

Students' Voices and Choices in Project-Based Learning: Driving Engagement through Essay Writing and Infographic Design

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Abstract— Teaching a foreign language at a vocational institution of higher education is a unique process in terms of its educational opportunities and challenges. In general, learning in vocational education aims to develop practical skills in specific disciplinary knowledge, to master standardized competency and internalize the attitudes and professional values. Thus, these requirements are expected to be made integral to the courses that the students take during their study including in the English classroom setting. Implementation of project-based learning (PBL) in teaching writing can be seen as an answer to this challenge as it encourages students to develop higher critical thinking, enhances deep learning and motivates students to be independent learners with exceptional self-management. This study aims to analyze students' perception on series of stages they experienced in completing essay and infographic project through PBL. Essay and infographic were the final products of the project in which the essay was used as the main reference to design infographics containing visually attractive elements such as images, graphs and tables. Those final products were uploaded into students' social media to get feedback from wider range of audience and as a medium for students to contribute positive impacts to the outside world. The goal of this project was to drive students' engagement in writing and put students in the language-specific setting in which language was naturally used based on the project characteristics. Participants were 64 second semester students enrolled in a three-year undergraduate program in Informatics Management. The data were collected by using two kinds of online questionnaires, i.e., google forms which require answers in the form of linear scale and paragraph. The results of online questionnaires revealed that students experienced deep and autonomous learning through the stages conducted in the project. They gain better understanding on grammar and vocabulary during peer review and showed positive attitude in designing infographics as they could revise the structure of their essay while designing the infographics' wireframes. Consequently, project-based learning in writing essay and designing infographics helped to enhance students' engagement to series of works within the projects and foster their collaborative and communicative skills while working together in groups.

Keywords— *project-based learning, essay writing, infographic, students' perception*

I. INTRODUCTION

Communicative competence is considered as the main purpose of teaching and learning a foreign language including in vocational education setting. Acquiring and achieving communicative competence means to be able to function or apply knowledge and skills beyond the classroom context and this requires knowledge, skills, and a positive attitude of learners. Recently, PBL has been implemented with the English as foreign language (EFL) classrooms because of its common expected learning outcomes sync in with language learning: communication skills, collaborative and problem-solving skills, deep content learning and autonomous learning. Although definitions vary in the specifics, project-based learning (PBL) is typically considered an approach to teaching in which students respond to real-world questions or challenges through an extended inquiry process [1].

PBL organizes learning around projects and involves the students in authentic situations where they can explore and apply the subject matter to problems that are complex and relevant to the professional practice for which they are preparing [2]. The characteristics of PBL are developing students' thinking skills, allowing them to have creativity, encouraging them to work cooperatively, and leading them to access the information on their own and to demonstrate this information. PBL usually require students to participate willingly in the meaningful learning activities proposed, mostly teamwork [3]. In PBL environments, students learn primarily by constructing knowledge and making meaning through iterative processes of questioning, active learning, sharing, and reflection. It service learning emphasizes educational opportunities that are interdisciplinary, student-centered, collaborative, and integrated with real-world issues

and practices [4]. It has been reported that this approach is effective and widely used in variety of classroom settings [5].

The implementation of PBL is particularly relevant in vocational education as students are not only equipped with practical knowledge but also life skill development. Classroom settings in vocational education emphasizes the process of producing 'work-ready graduates' by developing and equipping graduates with attributes needed in the workplace. In real workplace settings, skills such as decision-making, problem-solving, managing conflicts, team working and being innovative are important elements of job competence. Many of skills learned through PBL are highly sought by today's employers including the ability to work well with others and handle interpersonal conflicts, make thoughtful decisions, practice and solve complex problems. The learning outcome of students as manifested in their successful experiences gained in planning, managing, and accomplishing projects [6].

Recently, PBL has been implemented with the English as a second language (ESL) and English as foreign language (EFL) classrooms because of its common expected learning outcomes sync in with language learning: communication skills, collaborative and problem-solving skills, deep content learning and autonomous learning. Studies indicate that PBL aligns with language learning principles in which learners learn the target language by using it in a meaningful way to them. Previous studies of implementing PBL with EFL classes in Indonesia claim positive effects on both learners and teachers in terms of motivation, content learning, practical skills and learning autonomy [7-10].

This study implemented PBL in writing class through classroom action research in which students were required to write essays with and without the intervention to get pre-test and post-test score. Mastering writing skill has been a problem for most students and the present state of the vocational education system emphasizes that there seemed to be a need to shift from teaching writing through instructional method to student-centered method. Hence, the teaching or learning strategies in writing skill are able to meet with future career demands and tasks which incorporate skills beyond theories. Several studies stated that project-based learning considered as the effective method to reach the goals of teaching knowledge and soft skills in classroom setting. Evidently, project-based learning has not only improved language learning but also has succeeded in equipping students with the required workplace skills sought by employers. Project-based work lends itself well to evaluations of both language skills and employability skills [11]

PBL in this study was implemented with final products in the form of essay and infographic. Students' final essays were used as the main reference to design infographic. An infographic is a type of picture that blends data with design, helping individuals and organizations concisely communicate messages to their audience. More formally, an infographic is defined as a visualization of data or ideas that tries to convey complex information to an audience in a manner that can be

quickly consumed and easily understood. The process of developing and publishing infographics is called data visualization, information design, or information architecture [12].

Reviewing the literature on infographics, there are no resources that directly study the influence of infographics on writing through project-based learning. However, it has been reported that this approach is effective in improving students' achievement in learning course content and that infographics have considerable potential in education to enhance students' intellectual, life skills, and affective development [13]. In addition, infographics are considered as one of the basic instructional materials and it has been thought that these materials make learning more permanent [14].

Other literature proves the positive effect of using them in other fields related to language such as in teaching grammar, vocabulary and linguistics. A research on the impact of infographics to Iranian learners proved that teaching grammar items while using infographic instruction would lead to better comprehension among EFL learners. Infographic instruction increased the motivation of learners to improve their grammatical knowledge as they experienced different ways to learn vocabulary items [15]. Infographic was also used to facilitate in the field of teaching linguistics. The participants benefited from practicing various skills through creating infographics such as higher thinking skills, collaborative learning, and information analysis [16]

The two final products were uploaded in students' instagram accounts in order to get feedback from wider audience. This process also highlights the feature of PBL compared to traditional approach in which students' tasks are handed in to the teachers. Presenting final products of PBL into wider audience plays an important role to motivate students in producing quality products and to celebrate the success of completing the final products. The final products are displayed in the school or the wider community, and become a stimulus for thought and action for other students, teachers and local community. The project moves away from school and becomes social intervention, connecting the school with the community and real life [17]. The present study gained insights from the previous studies and aims to investigate students' perspective on the implementation of project-based learning in writing skill with essay and infographic as the final products.

II. RESEARCH METHOD

Project-based learning was implemented in English II course for three classes of students majoring in Informatics Management. The process of data collection in this research was done through mixed method design using two types of questionnaires. The online questionnaires, i.e., google forms were administered to 64 students who were undertaking the course. These questionnaires were answered by students after uploading the final products into their instagram accounts. The first questionnaire was design in scale type (1-4) ranging from

strongly disagree to strongly agree covering 35 questions to get quantitative data in the form of numbers and percentage. The second questionnaire was paragraph type of question designed to get longer answers from students. The second questionnaire was qualitatively designed with total 35 open ended questions. The questions consisted of eight components to elicit students' perspectives on the implementation of project-based learning. The eight components include students' perspectives on writing, perspectives on six phases implemented during PBL, and perspectives on PBL in general. The data from both types of questionnaires were analyzed and discussed quantitatively and qualitatively to examine students' perception towards the implementation of project-based learning.

III. RESULTS AND DISCUSSIONS

Project-based learning was implemented after the students' were taught with conventional lecture type approach. Before PBL, students were given material on cause and effect essay then they were asked to complete writing task and produced individual essay under the topic 'The Effects of Cyber Bullying'. Once they submitted the task, PBL cycle was being implemented in those three classrooms. The implementation of PBL in English II Class consisted of several steps including modeling and project agreement, outlining, presenting outline and research plan, drafting, peer-review process, final revision and info graphic design, and presenting final products to wider audience. Students in each class were divided into groups of four or five to put them in collaborative work. Students worked together as team especially in the stage of outlining and peer-review then shift their role to be responsible for individual works. In this context, students develop confidence and self-direction as they move through both team-based and independent work.

Classroom observation and result of the essay produced in conventional lecture type, students showed lack of competence in organization, flow of ideas and language use including grammatical structure and vocabularies. The structures of their essays were not well-organized because the topic sentences that they wrote were either too broad or too narrow to be developed into supporting details. Some students even developed their essays into a totally different direction by letting their ideas jumping from one particular topic to other irrelevant arguments.

TABLE I STUDENTS' PERCEPTION ON WRITING IN GENERAL

Questions	Scale 1 Strongly disagree	Scale 2 Disagree	Scale 3 Agree	Scale 4 Strongly agree
You often write in English	2 [3.3%]	19 [31.1%]	36 [59%]	4 [6.6%]
It is difficult for you to write individual essay	3 [4.8%]	21 [33.3%]	34 [54%]	5 [7.9%]
Working in group helped you to enjoy writing	2 [3.2%]	3 [4.8%]	29 [46%]	29 [46%]

Based on the scale type questionnaire, 54% of students agreed that it was difficult for them to write individual essay and 46% mentioned that they agree and strongly agree that working in group helped them to enjoy writing as seen in Fig. 1.

3. Working in group helped you to enjoy writing

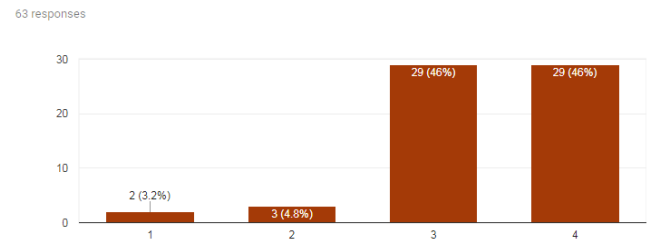


Fig. 1. Students' Responses on Working in Group

This showed that students need a more elaborated supervision and team work during the process of completing their tasks in order to keep them in the right track. Thus, completing writing task in a short period of time has its drawback when being used as a basic framework for enhancing skills in writing.

In language instruction, PBL is a flexible methodology allowing multiple skills to be developed in an integrated, meaningful, ongoing activity. Projects are generally thought of as a long-term (several weeks) activity which are part of an instructional method which promotes the simultaneous acquisition of language, content, and skills. A major goal of project-based instruction is comprehensible output which generally occurs both during the project and as the final product of the project [18]. The variety of definitions has provided the features of PBL. There are five criteria of project-based learning: centrality, driving question, constructive investigations, autonomy, and realism [19]. With its distinctive features, PBL has drawn a lot of attention and support from educators, teachers and learners. Research has provided evidence for more of its benefits than drawbacks. Students' perception on the implementation of PBL in this study showed that PBL gave benefits in each stages of project completion. Students competence in terms of language and soft skills improved based on the distinctive characteristic of the process being carried out until they submitted the final products. The process leading to the end-product of project-work provides opportunities for students to develop their confidence and independence [20].

At the very beginning, students were given model and explanation of cause and effect essay including the characteristics, the structure and the organization of ideas. Students were given time to have discussion on criteria of well-organized essay by analyzing the structures of a sample essay and they were asked to give evaluation based on an author's check lists. A model of essay with multiple effects was given to be used as the basis of analysis. By doing analysis, students could get insight on criteria of good essay including how to build coherent arguments from the

introductory paragraph, body paragraph and concluding paragraph. In this phase, the deadline of each stage in project was being discussed until lecturer and students came to an agreement. The description of students' perception on the phases of project- based learning is elaborated in the following sections.

A. Constructing Outline

After having brainstorming process, students agreed to choose the theme 'Social Media Addiction' to be developed as their project. This theme was chosen because it is highly related to real problems that students commonly have to face during this digital era. Choosing a stimulating topic is a very important step as students often feel discouraged to start writing because they feel that the topic is outside the area of their interest. Each group was given opportunity to decide whether to write essay with multiple causes or essay with multiple effects under the theme of 'Social Media Addiction'. All of the groups agreed to develop essay with multiple effects. Once the groups agreed on the type of essay, they started to build outline in one group under the topic "The Effects of Social Media Addiction". Table II describes students' perception while constructing outline in group discussion.

TABLE II STUDENTS' PERCEPTION ON THE PHASE OF CONSTRUCTING OULTINE

Questions	Scale 1 Strongly disagree	Scale 2 Disagree	Scale 3 Agree	Scale 4 Strongly agree
The outline helped you to develop ideas easier	2 [3.2%]	2 [3.2%]	31 [49.2%]	28 [44.4%]
The draft developed based on the outline has a better structure	1 [1.6%]	4 [6.3%]	38 [60.3%]	20 [31.7%]
It was difficult for you to make outline individually	1 [1.6%]	20 [31.3%]	37 [57.8%]	6 [9.4%]
Constructing thesis statement was the most difficult part in outline	4 [6.3%]	13 [20.3%]	33 [51.6%]	14 [21.9%]
Group discussion helped you to make outline	1 [1.6%]	2 [3.1%]	24 [37.5%]	37 [57.8%]

The outline produced by the students consisted of ideas for introductory paragraph (definition, self-experience, etc.), thesis statement, controlling ideas in body paragraph, and ideas for concluding paragraph (re-statement of controlling ideas, tips, etc.). A total of 51.6% students admitted that constructing thesis statement was the most difficult part. Furthermore, 57.8% of students responded that it was difficult for them to make outline individually. Thus, working in group helped them to overcome those difficulties. Students demonstrated a positive attitude towards working in group in

outlining process and showed increased self-esteem to continue developing the outline into drafts. A total 49.2% of students as shown by Fig.2 admitted that outline assisted them to develop ideas easier and resulted in an essay with better structure compared to the pre-test essay as stated by 60.3% respondents. This finding has shown that students have successfully worked in groups in managing the assigned tasks, i.e., constructing outline in the project work.

4. The outline helped you to develop ideas easier

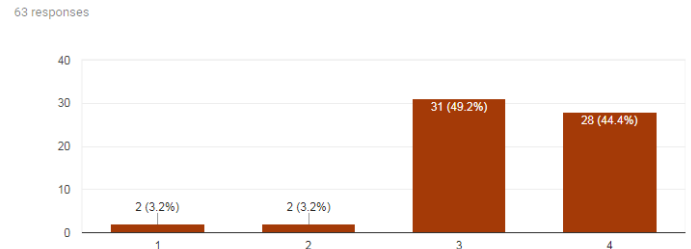


Fig. 2. Students' Responses on Constructing Outline

In addition, it is interesting to note that students gave variety of answers related to their opinion on the process of writing outline and whether outline was difficult to arrange.

- (1) In my opinion, it can facilitate me in preparing essay because we can correct each other with the same outline (1.4 – 2)
- (2) It was difficult to compromise among different opinion to get an agreement was difficult but the quality of the project will be at its best (1.4 – 25)
- (3) I think writing the outline in the group makes the grammar could be better (1.4– 43)

Those responses reveal that students considered outlining process as an important part in completing their project as it will be an essential basis when developing their drafts. They also admitted that they were given opportunities to get different opinions in team work to improve the quality of their arguments and grammatical structure. However, students have two sides of opinion in the challenges they faced during constructing outline as seen in the responses below.

- (4) Constructing outline is difficult because when we have to talk about the big picture, it means that we are talking about facts in general. We need to find very accurate information and should be able to arrange the ideas properly (2.6-45)
- (5) Yes, to make outline is difficult because it will determine the quality of your essay so the outline must be made as good as possible (2.6 -50)

Students stated that it was difficult for them to construct outline as it requires the ability to extract and manage information in order to ensure the quality of the outline. Other side of opinion expressed quite the opposite.

- (6) No, because making the outline is not as difficult as developing it (2.6-42)
- (7) It was not too difficult as we only need to write down the main ideas (2.6-43)

The positive perspective as shown in the above data may result from the fact that some students perceived the outlining stage either as the key element in the project or merely as a small part of the whole series of stages in project-based learning.

B. Presenting Outline and Research Plan

This section elaborates a phase that requires students to practice their communicative skill in a presentation. The outline and plans for necessary researches were presented in front of the classroom to gain feedback and evaluation from other groups and the lecturer. Students were invited to be involved in an open discussion and observation on the feasibility of their research plans and the quality of their outlines. A study conducted by Kaya [21] also emphasized the same finding as participating students in the research expressed that project based learning contributed to their presentation skills and augmented their self-confidences. Furthermore, they enjoyed getting feedback from their friends and instructors and the feedback contributed to their improvement.

Students mostly divided their controlling ideas into three main categories with different scope of elaboration. The effects of social media addiction covered issues such as health, social life and education. Others chose to focus on the limitation of the social media platform such as instagram, youtube or facebook to explore the specific impacts of addiction. Based on the classroom observation and questionnaire, students had a positive engagement in giving feedback to other groups as they could reflect on their own outline through suggestions or comments they gave during presentation. Responses revealing insights on students' perception in delivering a presentation of outline and research plan are shown in Table III.

TABLE III STUDENTS' PERCEPTION ON THE PHASE OF PRESENTING OUTLINE AND RESEARCH PLAN

Questions	Scale 1 Strongly disagree	Scale 2 Disagree	Scale 3 Agree	Scale 4 Strongly agree
Presenting the research plan helped you to evaluate your outline	0 [0%]	8 [12.5%]	35 [54.7%]	21 [32.8%]
You enjoyed the process of collecting data through research (distributing questionnaire, doing interview, etc)	0 [0%]	9 [14.1%]	37 [57.8%]	18 [28.1%]
The process of planning for the research kept you to focus on developing your outline	0 [0%]	7 [10.9%]	35 [54.7%]	20 [31.1%]

The findings in table III show that planning and presenting research plan contributed significant advantages to students in evaluating and developing the outline. 54.7% of students as explicitly shown by Fig. 3 agreed that presenting research plan gave the opportunity to evaluate their outlines.

6. Presenting the research plan helped you to evaluate your outline

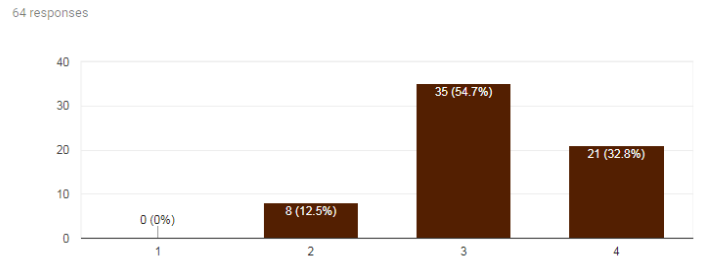


Fig. 3. Students' Responses on Presenting Outline and Research Plan

This implies that students developed their skills in presentation and were able to listen attentively and comprehend what was being presented to them. This would further enhance their ability to make further inquiries and respond appropriately. A total of 54.7 % of the respondents acknowledged that this process kept them to focus on conducting research based on the specific issues covered by their outlines. Research plan are arranged in order to ensure that students got sufficient resources to support their controlling ideas and keep their focus on specific issues. Furthermore, 57.8 % of students responded they enjoyed the process of collecting data through research (distributing questionnaire, doing interview, etc.).

In addition to feedback from other groups, students also got necessary feedback from the lecturer to improve the quality of their outlines and research plan. Most of the students chose to have literature research, online questionnaire and interview with friends to collect the data. Gathering information from reading materials is a required skill in doing project work. Thus, students could acquire relevant skill in conducting research by having different type of data source. The following comments taken from questionnaire with paragraph type elaborate benefits from planning and presenting research plan.

- (8) Presenting a research plan before developing the concept can help me to correct mistakes in my concept (1.5-20)
- (9) I think by doing research before writing a concept of essay, I can produce essay with good quality and based on facts (1.5-21)

The above responses reveal that students were aware of the benefits they got by presenting research plans and outline because they could use the feedback to build arguments in the next process of developing outline into drafts. However,

speaking in front of the classroom was a challenge for most of the students as seen in the following answers.

- (10) Yes, because I still feel not confident when speaking in front of the class (2.7-20)
- (11) Yes, it was challenging to present material and deliver it in front a lot of people, feel nervous and afraid to make mistakes in speaking (2.7-24)
- (12) It is challenging because I need to make sure that my data are correct (2.7-46)

Students' perception showed that they still faced obstacles when they had to express their ideas in English as they were afraid to make mistakes while speaking or delivering the content.

C. Drafting

Students continued to develop the outline into individual drafts and use the result of their research to support the arguments. Students were encouraged to use appropriate citation based on the article research. They also processed the data they gathered through interview or online questionnaire to support their arguments. These two steps helped to reduce the possibility of practicing plagiarism as lecturer could monitor the originality of students' writing by the citation and data collection that they submitted as part of the research progress. Students are involved in seeking answers to questions they have formulated by themselves, or in cooperation with their teachers, and proceed with investigation of an in-depth study on a selected topic. The drafting stage was a quite exhausting process as students had to accumulate their research data and manage to insert them into correct parts. However, as they worked in group, they could discuss the development of their ideas with other group members. Table IV displays statements that require students' responses on the process of developing outline into drafts.

TABLE IV STUDENTS' PERCEPTION ON THE PHASE OF DEVELOPING OUTLINE INTO DRAFT

Questions	Scale 1 Strongly disagree	Scale 2 Disagree	Scale 3 Agree	Scale 4 Strongly agree
Writing topic sentences for body paragraphs was difficult for you	2 [3.1%]	22 [34.3%]	29 [45.3]	11 [17.2%]
Writing conclusion was easy for you	1 [1.6%]	9 [14.3%]	35 [55.6%]	18 [28.6%]
Your group members helped you to develop the outline into a good draft	1 [1.6%]	5 [7.9%]	34 [54%]	23 [36.5%]
The data you collect helped you to develop ideas in your draft	1 [1.6%]	3 [4.7%]	37 [57.8%]	23 [35.9%]
A good outline helped you to improve the structure of your essay	0 [(0%)]	2 [2.3%]	28 [44.4%]	33 [52.4%]

The findings reveal that students had a quite slightly different opinion on writing topic sentences in each body paragraphs. A number of 29 students (45.3%) agreed that they had difficulty in writing the topic sentences. However, 22 students (34.3%) gave a negative answer stating that they did not experience difficulty. Students' perspective in drawing conclusion show different finding. More than half (55.6%) of the respondents agreed that elaborating conclusion was not an obstacle for them. Fig. 4 shows students' perspective on the role of group discussion in helping students to elaborate outline into draft.

8. Your group members helped you to develop the outline into a good draft

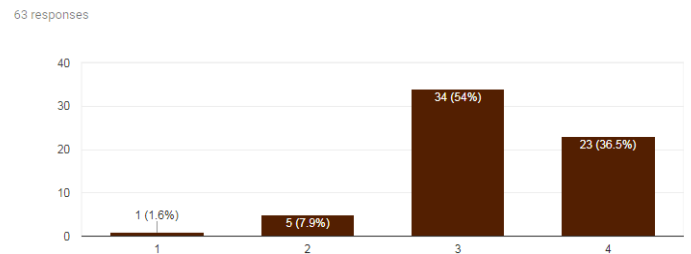


Fig. 4. Students' Responses on Constructing Draft

Total 54% of students could work collaboratively in solving problems related to developing drafts. This means that through PBL, students have acquired relevant skills to manage the data source including digest important information from written source, gather information and identifying relevant ideas related to the project undertaken by their group. Although students were assigned to write individual essay, they were also encouraged to solve problems they faced collaboratively through group discussion. More specifically, the PBL learning process allows learners to study, search, set goals, plan, practice, and/or experiment according to their interest, preferences, and capability. PBL in groups and with individuals relies on thinking processes, integrating knowledge, and using a scientific method in each step [22]. The following finding also shows that the data conducted through group research play an essential part in helping students to develop their ideas.

9. The data you collected helped you to develop ideas in your draft

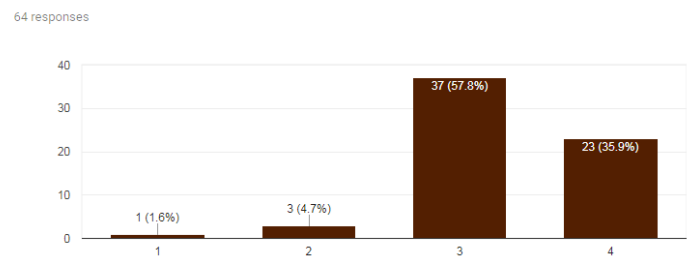


Fig. 5. Students' Responses on Constructing Draft

Students gave positive responses towards the process of developing the outline into drafts because they could get help from other members in on group and used the result of their research to strengthen their core arguments. The above graphic showed that total 57.8% respondents were able to manage their data collection well. This denotes that more than half of the students are sufficiently skillful in collecting information based on their research plan. However, the data also revealed that many students experienced obstacles in constructing outline. Most of them admitted that they had difficulty in arranging sentences with good structure and coherency. They also stated that they found it difficult to choose the correct diction and grammatical structures. These are some excerpt of students' answers to the question 'What are the difficulties you have when developing your outline into a draft?'

- (13) When developing an outline into a concept is to think about the sentence to be made and the words to be used (2.9-13)
- (14) Develop outline so that it can be a good paragraph, and looking for ideas for each paragraph (2.9-37)
- (15) Develop the outline into a good sentence and make a coherent sentence (2.9-31)

D. Peer-review process

Peer review is increasingly conducted in writing classes since the prevalence of communicative approach in recent years, and it has been proved as an effective approach to improve the writing skill [23], to increase motivation to writing, and to learn how to treat writing as a collaborative social activity [24]. In this phase, students' drafts were evaluated in the stage of peer-review in which students in one group exchange their drafts to get comments and suggestions and lecturer's evaluation. The feedback may in the form of essay structure, grammar or mechanical errors. Students and lecturer were equipped with checklist and rubric score as a guide to their assessment. This process played an important role as students were encouraged to give comments based on their background knowledge in terms of writing essay and the topic being discussed. Hence, this process could help students to reflect on their own writing while assessing other friend's work. Students were then allowed to discuss and work on the feedback in group in order to give necessary explanation on the peer-review process. Making students perform concrete tasks in pairs and groups is common for foreign languages training; this practice stimulates cooperation and knowledge exchange amongst students and it encourages individual students to talk more [25]. Collaborative skills and involved in this process because students were required to give and receive feedback in groups.

TABLE V STUDENTS' PERCEPTION ON THE PHASE OF PEER-REVIEW

Questions	Scale 1 Strongly disagree	Scale 2 Disagree	Scale 3 Agree	Scale 4 Strongly agree
Peer review process encouraged you to give comments and suggestions	1 [1.6%]	4 [6.3%]	48 [75%]	11 [17.2%]
You felt confident when giving comments and suggestions in peer review	1 [1.6%]	18 [28.1%]	38 [59.4%]	7 [10.9%]
It was difficult for you to revise your friend's draft	0 [0%]	20 [31.3%]	37 [57.8%]	7 [10.9%]
Evaluating your friend's essay helped you to review the quality of your essay	0 [0%]	6 [9.4%]	45 [70.3%]	13 [20.3%]
It was difficult for you to understand your friend's comments and suggestions	5 [7.8%]	30 [46.9%]	24 [37.5%]	5 [7.8%]

The above table displayed findings which describe students' positive perspective on peer-review process. In this phase, students were assigned to give feedback on their friend's work based on the author's checklist and add comments using the review bar in Microsoft Word.

A large number of students (48 students or 75% of total respondents) felt that peer-review process encouraged them to contribute actively in giving feedback and 59,4% admitted that they felt confident during the process. This highlights that students displayed good interpersonal skills in working collaboratively with their group members. In group discussion, students had a chance to improve the quality of their work by helping other members in one group particularly in the phase of peer-review. They were responsible to give enough contribution so that they could enhance their individual proficiency as well as provide benefits to other members in their group. In addition, the current peer feedback activity emphasized the beneficial feedback where learners collaboratively helped each other to improve their ideas and the structure of their essay as shown in Fig 6.

14. Evaluating your friend's essay helped you to review the quality of your own essay

64 responses

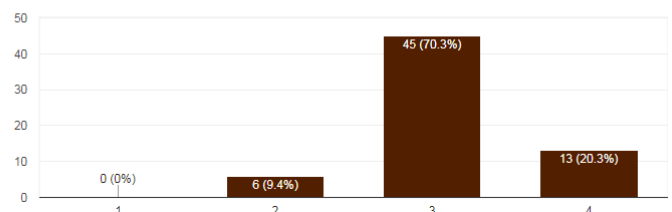


Fig. 6. Students' Responses on Peer-Review

The majority of students (70.3%) agreed the process of evaluation gave them opportunity to reflect on their own essay. This positive response implies that learners were aware of the nature of peer-review so they showed supportive attitude and being open to suggestions as they realized that everyone was in the stage of idea forming and developing. In the context of project-based learning, peer feedback has the potential to facilitate learning processes in different ways. Reviewing peers' project drafts may help learners reflect on their own work and improve their own project performance [26].

Most of the students (46,9%) did not experience any significant obstacles in this phase in terms of understanding feedback given by their friends even though a slightly less of number of students (37,5%) revealed a level of difficulty to comprehend the given comments and suggestions. In accordance with the result of the scale type questionnaire, the following data elaborate further the advantages the students got during the process and how peer review helped them to improve the quality of their essay.

- (16) Find out if our essay matches the outline and we know it is correct spelling on the word or that we use (1.12-11)
- (17) Exchange ideas and can increase knowledge (1.12-40)
- (18) To know the shortcomings of our writing according to the point of view of others so that we can fix it (1.12-44)
- (19) Yes, it helps me a lot, because sometimes, you need to hear someone's opinion about your draft before you publish it, in case there's a mistake or two in your grammar, or if the content is misleading (2.13-18)
- (20) Yes I did, because of the peer-view we will more easily find out the location of the error on the vocabulary and find out if our essay in accordance with the outline that we created earlier. (2.13-29)

The above data described the areas in which students got advantages from peer-review process. Students got feedback in terms of vocabulary, grammar, content and flow of ideas, and the structure of essay in general based on the outline designed at the earlier stage. By learning how to solve problems in writing based on the feedback, students had an opportunity to have deep and autonomous learning as well as improve their soft skills. This highlighted the fact that in addition to learning core competencies of writing, vocational students need to experience exposure in various fields of interpersonal relationships, communication, and group work in order to be prepared for the workplace requirements. This is the area in which PBL posts more benefits compared to the traditional teacher-centered approach. Being in a culture of learning and exposure to new people and experiences, project based learning contributes to the development of many soft

skills with applications to the workplace which apparently will fulfill the needs of the 21st century job market [27].

E. Final Revision and Infographic Design

After the process of peer-review, students did some necessary revisions to their drafts and were allowed to have discussion with their group members. Students were given wide opportunity to learn from each other and view their peers as links in a chain through exchange of information and explanation in order to achieve the desired goals. In addition, students were also given time to get individual feedback from the lecturer. The students then proceeded to transform their essays into infographic designs. The final essay and infographic were submitted and uploaded into students' social media account, in this case instagram. The publication of project into wider audience is an important part of PBL because it allowed the products to give impacts to people outside the classroom setting. In addition, three best essays were chosen to be displayed in the lobby area of Electrical Engineering Department building.

TABLE VI STUDENTS' PERCEPTION ON THE PHASE OF FINAL REVISION AND INFOGRAPHIC DESIGN

Questions	Scale 1 Strongly disagree	Scale 2 Disagree	Scale 3 Agree	Scale 4 Strongly agree
The suggestions or comments you got from your friends can help you to improve your essay	2 [3.2%]	1 [1.6%]	36 [58.1%]	23 [37.1%]
You revised your essay based on your friend's review	0 [0%]	3 [4.8%]	49 [77.8%]	11 [17.5%]
The feedback you got in peer review improve the quality of your grammar	1 [1.6%]	6 [9.4%]	43 [67.2%]	14 [21.9%]
The feedback you got in peer review improve the quality of your ideas	1 [1.6%]	2 [3.1%]	52 [81.3%]	9 [14.1%]
The process of revising draft into final essay encourage you to learn more	1 [1.6%]	2 [3.1%]	35 [54.7%]	26 [40.6%]
Turning your essay into an infographic helped you to check your essay	1 [1.6%]	2 [3.2%]	40 [64.5%]	19 [30.6%]
The infographic helped you to check the structure of your essay	2 [3.2%]	1 [1.6%]	36 [57.1%]	24 [38.1%]
You enjoyed the process of designing the infographic	1 [1.6%]	7 [10.9%]	28 [43.8%]	28 [43.8%]

. In the phase of final revision, a total of 58.1% of the respondents agreed that they could improve the quality of their essay by taking into consideration the suggestions and comments they got during peer-review process. 77.8% of the

students also admitted that they revised their essays based on the review given by their friends. It is also interesting to note students' perception on the impacts of peer review in improving their competence both in language and writing competency.

17. The feedback you got in peer review improved the quality of your ideas

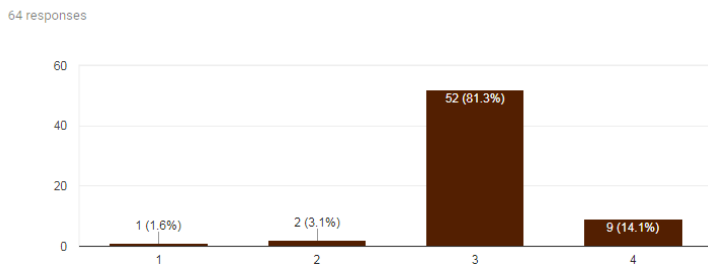


Fig. 7. Students' Responses on Final Revision and Infographic Design

A big percentage of the respondents (81.3%) as seen in Fig. 7 approved that the feedback they got during peer-review increased the quality of their ideas. In other words, this indicates that students were able to revise their essay into a better structure through student-centered and independent learning context. This implies that students were able to take advantage from peer-review process. Criteria for project work are, learners work in a group to select topics of interest and decide the direction of their learning; they rely on insights from their peers while providing feedback to others; they may use the teacher as a resource, but by and large, they create their own knowledge [28].

Besides the improvement of ideas, more than half number of students (43 persons or 67.2% of total respondents) acknowledged that they could use their friends' feedback to improve the quality of their grammar during final revision. As students were put in a situation in which the language was used based on the context of situation, they could learn grammatical structures in a specific area within a certain period of project. This purposeful and meaningful use of language will make language learning more fruitful as it encourages authentic learning experience that will help to motivate students to independently seek knowledge and continuously improve their language ability; it stimulates autonomy and life-long learning in addition to increasing English language competency [29].

Besides giving improvements for students' content and ideas, the process of revising draft into final essay also encouraged students to learn more knowledge on writing and language use. A total of 54.7 % agreed and 40.6% strongly agreed that the process motivated them to continue learning. This implies that project-based learning was an efficient teaching strategy to enhance students' learning motivation. It also helped students to engage into the learning activities. Student motivation is stimulated in multiple ways in a PBL environment, such as formal and informal group discussions, regular supervisor meetings and sharing leadership [30].

Students continued to use design infographics as one of final products of this project. Both of the products had to be submitted and uploaded into their instagram account on the following week. Hence, it gave them additional time to reassess them thoroughly. The finding revealed that this process gave benefits to students to reflect on their essay from a different point of view as illustrated in Fig. 8.

Turning the essay into an infographic helped you to check your essay

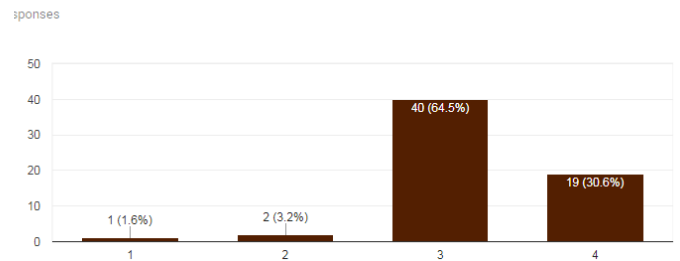


Fig. 8. Students' Responses on Final Revision and Infographic Design

More than half of the respondents (64,5% and 57.1%) stated that they could check the quality of their essay including the structure and the language being used through the process of infographic design. This was possible because the process of designing infographic involved the stage of constructing wireframe, extracting information based on the resources and creating sentences with good structure. Even though infographics put the emphasis on the use of images, graph or tables in conveying the information, the data were organized systematically according to the wireframe. Thus, designing infographic could help students to check the structure and the content of their essays.

- (21) Infographic help me to check the structure of my essay because from infographic I know main idea in my essay more easy because infographic more simple and easy to understanding (1.13-5)
- (22) Infographic is really helpful to check my essay, if there is confusion in designing infographic, then it can be guarantee that the structure of our essay is not well-organized. It makes us difficult to make infographic. (1.13-47)
- (23) Having infographic with lots of pictures and have the main idea of each paragraph, I can check whether the structure of my essay is already correct or not (1.13-30)

The data above emphasize students' perceptions on the role of infographics in the final revision of the essay. Infographics can help re-examine the essay structure being used as a reference material because if the infographic design process experiences many obstacles, it can be ascertained that one of the factors is the weakness of the data structure presented in the essay. In addition to the benefits of infographic design, students revealed that they enjoyed the process of designing it. A total

of 43.8% of students declared that they agreed and strongly agreed to the statement asking whether they enjoyed the process. Enjoyment may derive from the fact that students were challenged to explore their creativity through the digital application. Infographics are promising instructional instruments that align with the interests and characteristics of digital age students who are often referred to as “digital natives” or “digital citizens” surrounded by technology [31].

F. Publication of Final Products

Students’ final products were published using captions and Instagram hashtags that were discussed and approved together in the classroom as seen in the Fig.9. Three best essays were also displayed as posters in the lobby area of Electrical Engineering building.

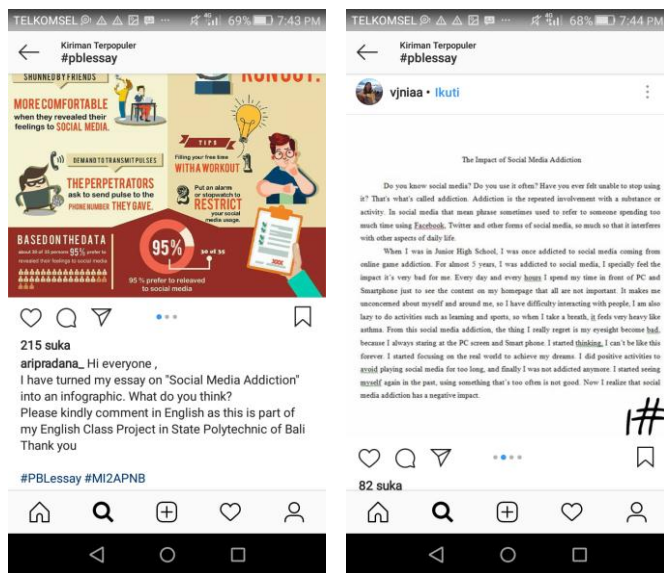


Fig. 9. Screenshot of Students’ Posts on Instagram

Through publication in social media, students were encouraged to seek out feedback and place value on receiving comments from diverse perspective. In addition, under normal classroom conditions, it’s difficult to get students to revisit their work. However, somehow, sharing work in public spaces and the prospect of doing so helps learners revisit their work, integrate feedback and improve future work. The opportunity to cultivate and grow their virtual identity through their work motivates them to create, critique, and iterate [32].

TABLE VII STUDENTS’ PERCEPTION ON THE PHASE OF FINAL PRODUCTS PUBLICATION

Questions	Scale 1 Strongly disagree	Scale 2 Disagree	Scale 3 Agree	Scale 4 Strongly agree
You like to have your	1	3	43	16

infographic posted online	[1.6%]	[4.8%]	[68.3%]	[25.4%]
You got positive feedback from your friends in social media	1 [1.6%]	6 [9.5%]	40 [63.5%]	16 [25.4%]
You think your second essay is better than the first one	1 [1.6%]	7 [11.1%]	29 [46%]	26 [41.3%]

Table VII displays students’ perception on the final phase of project-based learning conducted in this study. A percentage of the respondents (68.3%) agreed that they appreciated the publication of their infographic in social media. More than half number of students (64.5%) admitted that their posts received good comments from their friends. A big number of students as seen closely in Fig.10 also acknowledged that they gain positive feedback from their friends.

12. You got positive feedback from your friends in social media

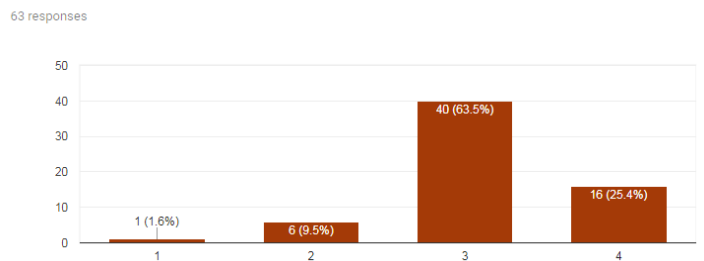


Fig. 10. Students’ Responses on Final Products Publication

The responses taken from the result of paragraph type questionnaire further describes students’ various perceptions on final products publication. Some students gave positive remarks as seen in the data below.

- (24) Proud, I can show people that I can make it (1.15-4)
- (25) Very nice, the public can view information in brief and detailed (1.15-43)
- (26) By posting infographic on the effects of social media addiction, we can do campaign on the negative use of social media (1.15-50)
- (27) I feel relieved because my task is finally finished, and it makes me happy if I can share the important information that I made to my friends in social media especially when they appreciate it (2.15-12)
- (28) Just like in peer-review, the feedback in social media can help me to know my mistakes (2.15-20)

Data (24-28) show that students experienced positive feeling as they could finish the final projects completely, shared important information and at the same time gained feedback from diverse perspectives outside the classroom setting. Publication in social media also gave opportunity for students to receive feedback from wider audience so they

could reflect on their mistakes. It indicates that students understand the potential impact they could bring to wider audience through their final product and accepted different roles when sharing work in public space. However, some students also expressed negative personal feeling due to the lack of confidence on the quality of their products, being nervous and worried by the fact that their products were exposed in public spaces.

Besides providing perspectives on the implementation of project-based learning in each phase, students were also required to give their view on project-based learning in general. Students' perception on project-based learning can be seen in Table VIII.

TABLE VIII STUDENTS' PERCEPTION ON PROJECT-BASED LEARNING

Questions	Scale 1 Strongly disagree	Scale 2 Disagree	Scale 3 Agree	Scale 4 Strongly agree
Project-based learning helped you improve your grammar	2 [3.2%]	0 [0%]	41 [65.1%]	20 [31.7%]
Project-based learning helped you improve your writing skill	2 [3.2%]	5 [7.9%]	34 [54%]	22 [34.9%]
In general, you enjoyed writing essay in project-based learning method	2 [3.2%]	3 [4.8%]	46 [73%]	12 [19%]

A majority of students acknowledged that project-based learning could help them in improving their grammar (65.1%) and increasing their skill in writing (54%). A big percentage of students (73%) also admitted that they enjoyed the process of writing in project-based learning. The benefits of project-based learning in improving students' writing and language skills have also been confirmed by other studies. The similar result was also found in Foulger and Jimenez-Silva's research. The study reported that via project-based learning, writing embedded in natural settings that helped create increased levels of language cognition – attention to topic organization, awareness raising on linguistic features, vocabulary and word choice, genre principles, and sentence formation for a variety of purposes are processed all at the same time [33].

Project-based Learning improves students' writing skill since it place an emphasis on communication, students focus their attention on conveying their message and, at the same time, apply knowledge of conventions to their writing. The conventions are used at various points in the project and practiced in authentic context. In addition, Project-based Learning potentially promotes students' critical thinking, communication, and creativity through collaborative work which benefit on students' writing skill. Project-based Learning creates a pathway for students to explore, inquire, and create [34]. Thus, the implementation of project-based learning contributes learning environment that fosters students' writing and language skills.

IV. CONCLUSION

In view of the findings from this study, project-based learning gave positive impacts on students' knowledge and soft skills. Final projects successfully completed as a result of collaborative effort helped to develop individual soft skills especially project management. Students were able to forward feedback and also identifying and judging suggestions from group members especially in the process of peer review. Students' perspectives on each phase of project-based learning indicated that this project work has enabled students to engage in deep and autonomous learning as well as interpersonal skill through problem solving and publication of their essays and infographics in social media.

ACKNOWLEDGMENT

The researchers would like to express special thanks to the head of Electrical Engineering Department for the support during this research.

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