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The Effectiveness of Problem-Based Learning in Online Language Learning

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Abstract: Online language learning is still leaning towards teacher-centred learning where learners do not have enough opportunities to demonstrate their language skills in class as they are trying to finish their syllabus. Problem-Based Learning (PBL) is the opposite of conventional learning where the knowledge input comes from the student themselves as they are trying to solve a problem given by the teacher. Hence, this study aims to investigate the use of PBL for online language learning classroom participation and the effectiveness of PBL in improving English language usage through online language learning. A survey was conducted and distributed among undergraduates taking the English for Higher Education (EHE) course in Universiti Tun Hussein Onn Malaysia (UTHM) where their perspectives on PBL were recorded and analyzed via descriptive analysis. The findings show that PBL helps in increasing students' class participation, increase learning motivation, improve English language skills and soft skills. Hence, PBL is suitable for educators who wish to increase students' engagement in learning, facilitate their language learning and soft skills. Future researchers should consider incorporating PBL into a variety of online English language courses or online third language courses. Apart from that, there is a need to fully comprehend the most effective trigger for eliciting the excellent efficiency from language learners, resulting in PBL becoming even more widely used.

Keywords: Problem-Based Learning (PBL), self-directed learning, classroom participation

1. Introduction

Recently, we had a major shift in education thanks to the pandemic Covid-19, most universities and schools opt for online learning. Online teaching and learning offer flexibility and diverse platforms for both students and teachers to use. Despite this, online language learning still feels conventional or

teacher-centred where students need to pay attention and listen to a lecture instead of having more opportunities to demonstrate language skills, sharpen soft skills and build confidence in using the targeted language.

With regard the online setting as the learning platform, there are some obstacles in the learning process, mainly Internet access. Computer anxiety, according to Aydin (2011), has a significant negative impact on student achievement. Students become dissatisfied when a computer or network system goes down because they may not be able to follow the lessons. This raises anxiety among pupils who are less familiar with the Internet. Moreover, in relation to the Internet or online learning, it is a whole different environment with a face – to – face classroom where students and educators are physically in the same place, unlike online learning, where students have the opportunities to disappear or make technical excuses to avoid any participation in the online class. Other than that, Sultan and Kanwal (2017) mentioned how negative emotional states are more likely to affect an individual's ability to connect with technology, learn, establish social relationships, and ultimate well-being.

During both online and traditional methods of learning, students tend to be passive and have small opportunities to participate in the classroom as well as to use the language by speaking or interacting in which known as teacher- centred learning. Problem Based Learning (PBL), in contrast, is different as it centers more on self-directed learning. PBL is a learning method that promotes active learning and self-directed learning as students are responsible for their knowledge and teachers or educators will act as the facilitators. According to Ali (2019), Problem-based learning is a method of student - centered learning by solving complex and open-ended problems. These are real-world problems that are used to encourage learners to acquire through the application of principles and concepts. PBL offers a student-centred learning environment in which the learning process is organised from a problem or triggers and students will usually work in a small group with the guidance of the facilitators.

As such, PBL is expected to increase students' class participation and language use. Parton and Bailey (2008) discovered that PBL was widely used in higher education especially in the medical and health fields as it offers effective ways to increase students' autonomy in their own learning, increase the opportunities to hone soft skills and divert from conventional learning . The underlying philosophy of PBL is Constructivism where learners build on their personal experience and socialize in their learning process via scaffolding, self-discovery, group work, etc. (Pijl-Zieber, 2006; Cardon et al., 2022; Siti Nurhayati, 2022). Apart from that, Karim Shabani et al. (2010) emphasized that Vygotsky's Zone of Proximal Development (ZPD) is also present in PBL where students are expected to attain another level of skill after appropriate facilitation from the teacher and peers.

This, as a result, will enhance their opportunities to communicate more which as a result, will boost their language skills. The famous Chinese philosopher, Confucius, once said that 'I hear I forget, I see I remember, I do I understand'. This quote makes a strong point of the learning principle that hearing is not good as seeing, and seeing is not as good as action or doing. Thus, practising and doing something will help to increase understanding of the subject matter and that is what PBL offers students to experience. This study focuses on the effectiveness of online platforms in acquiring English language in terms of class participation and language usage by using the PBL approach.

1.1 Language learning

Learning a language or a new language indeed requires an understanding of the structure of the language as well as practices. Simpson (2011), highlighted that the Thai school system emphasises that student-centred learning is a significant component in all levels and all sectors including English language learning. Student-centred learning provides a platform for students to actively engage in the learning process and utilise the language. The fundamental elements in language learning, especially English are speaking, listening, writing and reading. Student-centred learning approach is founded from a constructivist theory which suggests that students learn better through doing and experiencing rather

than observing that is more to teacher-centred learning (Simpson, 2011). PBL is an approach that encourages students to participate in the learning process as an individual and a member in a group. PBL, other than that, enhances student's critical thinking and problem solving skills as learning was based on a problem designed by the facilitator. This is associated with a claim by Duckworth (2009) that students perform better when they are asked to think about a problem rather than doing the thinking for them. PBL, as a result, provides a room for students to produce their thoughts on the problem with their prior knowledge instead of the teacher's thoughts.

Next, online language learning is now widely adopted due to Covid-19 and social distancing because online classes are easy to access, convenient and provide an easy platform to review exams and tasks. However, a study suggests that students prefer face-to-face learning as they face challenges in online language learning which include weak internet connectivity, poor interaction, less motivation, less participation and less understanding are the most challenges of online learning (Zboun & Farrah, 2021).

1.2 Students' engagement

Student engagement, according to Newmann et al. (1992), is a psychological and physical effort toward acquiring, understanding, and mastering knowledge, qualities that academic work is meant to develop. It can also relate to a student's desire, willingness, and obligation to participate actively in the learning process (Bomia et al., 1997). One source of concern, particularly among language learners, is the assumption that a language class is only for acquiring language components such vocabulary, grammar, speaking, and writing, rather than for building competencies in areas including research and cooperative work (Beckett & Slater, 2005). As a result, resistance to collaborative learning or a lack of engagement may result in ineffective performance. One study suggests that there is a connection between teacher enthusiasm and students' enjoyment, boredom, and social-behavioral learning engagement (Dewaele & Li, 2021). Hence, teacher's enthusiasm plays a fundamental role in shaping students' engagement in class. In addition, a study conducted by Mazloom et al. (2021) proves that facilitating teaching styles shows positive, significant relationships with student engagement.

1.3 Language usage among ESL students

Language anxiety can affect second language speakers (Woodrow, 2006). Language anxiety can hinder oral achievement and render the second language speaker to be seen as less confident despite having immaculate information that they want to share. Another study found that second language learners in Malaysia face various challenges in learning new language skills of listening, reading, writing and speaking yet, the most glaring challenges that they face is having a lack of confidence which hampers their second language development greatly (Hiew, 2012). Hence, it is crucial for educators to facilitate the learner's learning experience to be more meaningful and keep the learners motivated in building their language skills (Thirusanku & Yunus, 2014).

Speaking abilities are one of the language abilities that has generated a great amount of controversy among educators especially in the English language (Kashinathan, & Aziz, 2021). Students with a limited command of the English language will almost probably lack the soft skills required to communicate effectively in an international setting. Although most students could pass the English exam, not all of them can communicate effectively and fluently as they have very limited opportunities to use English outside the classroom. As PBL is student-centred learning, students therefore are situated in an environment of being responsible for their own learning and better opportunity in participating, giving thoughts and using the language.

Next, a study conducted among non-native English speakers from various social and education backgrounds shows that learners' motivation is a huge factor in determining the success of language learning performance (Navun, 2021). Hence, educators need to set an achievable goal for students for them to challenge themselves. This is aligned with Vygotsky's theory of Zone of Proximal

Development (ZPD) where students' language development are determined through problem solving under educator's guidance or peer collaboration (Vygotsky, 1978).

1.4 Problem- based learning

Problem - based learning (PBL) is an educational approach where the problem or also known as the trigger is the starting point of the learning process. The problem serves as the foundation for the learning process since this determines the learning process's direction and emphasises the formulation of a question rather than the answer. This also allows the learning content to be linked to the context, which helps students stay motivated and understand what they are learning (De Graaff & Kolmos, 2003). The problem in PBL classroom must relate to the learning outcomes of the course (subject) that is implementing this approach in order to ensure that students acquire the course contents. Problem-based learning is a student-centered teaching technique in which the teacher acts as a facilitator. According to Etherington (2011), problem-based learning is a student-centered form of teaching in which students are given the responsibility of solving real-world problems connected to their courses. On top of that, Virk, Mahajan and Singh mentioned in their study, upon learning via PBL, students eventually learn to do self-reflection and monitor their learning process (2022). Meanwhile, Keiziah (2010) claims that PBL is an innovative teaching approach in which students work in small groups to resolve learning problems before working independently. Simone (2014) elaborates on this notion, stating that in PBL, learners engage in group work in evaluating complicated problems and independent work in completing solving problems. Furthermore, PBL is based on constructivism theory. Constructivism can build individual and social knowledge. Knowledge does not come from the teacher but from the students where they construct their own knowledge through the relation between their new and existing knowledge (Suhendi, Purwarno, & Chairani, 2021).

Besides the trigger, another essential part of PBL is the use of a 'sacred' system, known as the FILA table used in the problem analysis stage. FILA is an acronym that stands for Facts, Ideas, Learning Issue, and Action.

Even though there is prevalent research data on the benefits and achievement of PBL, study on how PBL could be efficiently applied in English classrooms in the Malaysian higher education system is inadequate. Likewise, little first-hand study has been carried out to present any challenges of PBL to English language learning. Hence, an investigation into the use of PBL in a Malaysian university English classroom would noticeably enhance research data. The consequences of this research may add towards humanizing teaching and learning of English in higher learning establishments. This is relatively significant as English is regarded as a substantial encouragement in developing nations such as ours and a doorway for better employment scenarios and better-quality life.

1.5 Research objectives and questions

This study investigated the use of PBL for online language learning classroom participation and the effectiveness of PBL in improving English language usage through online language learning. The following are the research questions that guided the study.

1)   What are the impacts of PBL on online language learning classroom participation?
2)   How does PBL through online language learning improve English language usage?

2.   Materials and Methods

2.1 Research design

An action research design was selected to conduct this study as it allows the researchers to systematically examine several aspects in their teaching practices, identify causes of arising challenges in classrooms and find ways to make improvements.

This research began with introducing students to PBL and the procedures as well as the roles of students and lecturer to ensure that students have a clear-cut understanding of how PBL is utilised. This was to ensure that confusion or misunderstanding did not happen as well as to navigate an effective learning environment and outcome.

The problem (trigger) was then presented to the students as the main catalyst or stimulus in the PBL setting. As this study was conducted through an online platform, the problem was presented in a form of PowerPoint. Students worked in a small group, therefore, each group was given a copy of the problem and FILA table. They were separated into breakout rooms in groups and they were given 45 minutes to observe and analyse the problem using the FILA table. The lecturer who acted as the facilitator entered each group's breakout rooms to facilitate the students.

From the generated ideas, the main issue of the problem was determined and subsequently related learning issues were identified and further investigations were conducted via their independent self-directed learning. Students were given the freedom to gather information from reliable and valid sources. Finally, the discussion session between group members to present information gathered from their research was carried out. In this step, students had the opportunity to visit other groups' answers/discussion outcomes via the gallery walk. This, in addition, enabled the students to make a self-reflection of what they, individually and as a group had done throughout the learning process.

2.2 Participants

The participants of this study consisted of 78 undergraduates taking the English for Higher Education (EHE) course in Univeristi Tun Hussein Onn Malaysia (UTHM). These students were from Section 1 and Section 3 and they were in their second year of study. Comments on their learning abilities were indicated as intermediate and some of the students had no experience in PBL and some were considered as novice.
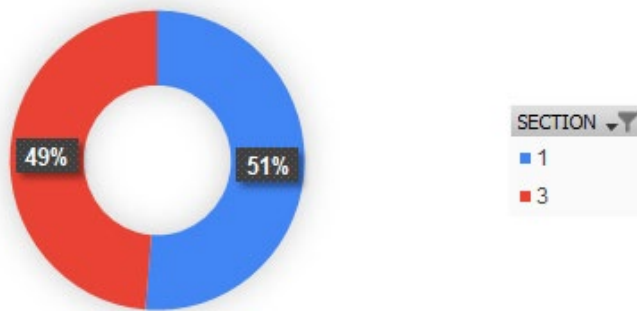
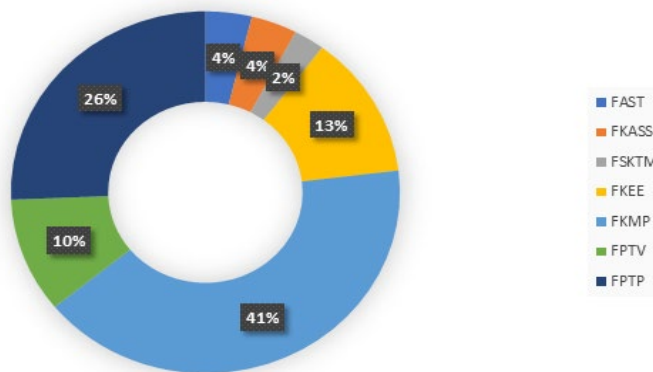## 3. Results and Discussion

3.1 Results
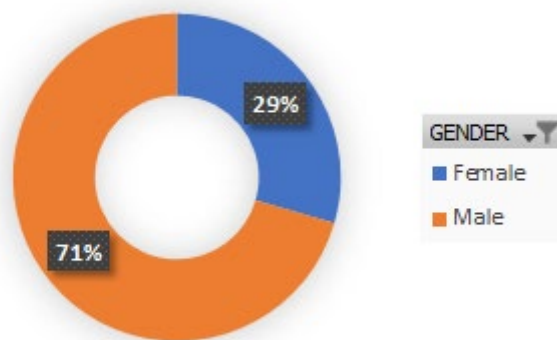
Figure 1: Gender

Based on Figure 1, the majority of respondents (71%) were males whereas the rest (29%) were females.

Figure 2: Course Section

As depicted in Figure 2, the percentage of participants from Section 1 is slightly higher than Section 3. Section 1 with 51% participants and Section 3 with 49% participants.

Figure 3: Faculty

The respondents represented seven faculties; Faculty of Applied Science and Technology (FAST) - 4%; Faculty of Civil Engineering and Built Environment (FKAAB) - 4%; Faculty of Computer Science and Information Technology (FSKTM) - 2%; Faculty of Electrical and Electronic Engineering (FKEE) - 13%; Faculty of Mechanical and Manufacturing Engineering (FKMP) - 41%; Faculty of Technical and Vocational Education (FPTV) - 10% and Faculty of Technology Management and Business (FPTP) - 41%.

In order to achieve the preferred outcomes of PBL, focused communications and cooperation between the students and their lecturers are indeed essential. Therefore, it is crucial to discover students' views of the effectiveness of this approach.
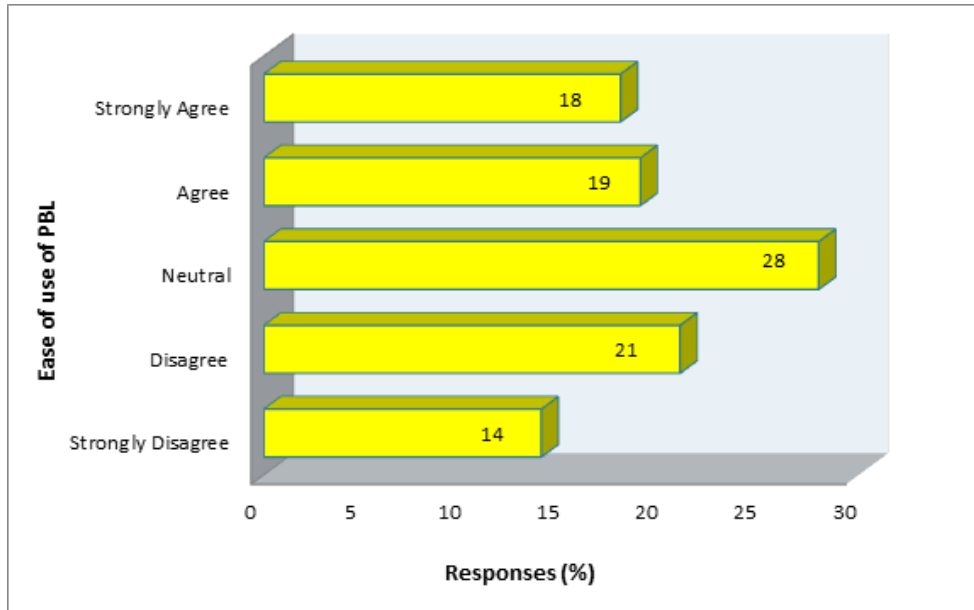
Figure 4: Ease of Use of PBL

Figure 4 shows the respondents' feedback to the question of their agreement towards the 'ease of use of PBL'. Strongly disagree - 14%. Disagree - 21%. Neutral - 28% which has the highest score. Disagree - 21%. Strongly agree - 18%. This therefore suggests that PBL is not too difficult and is easy to follow in an English course.
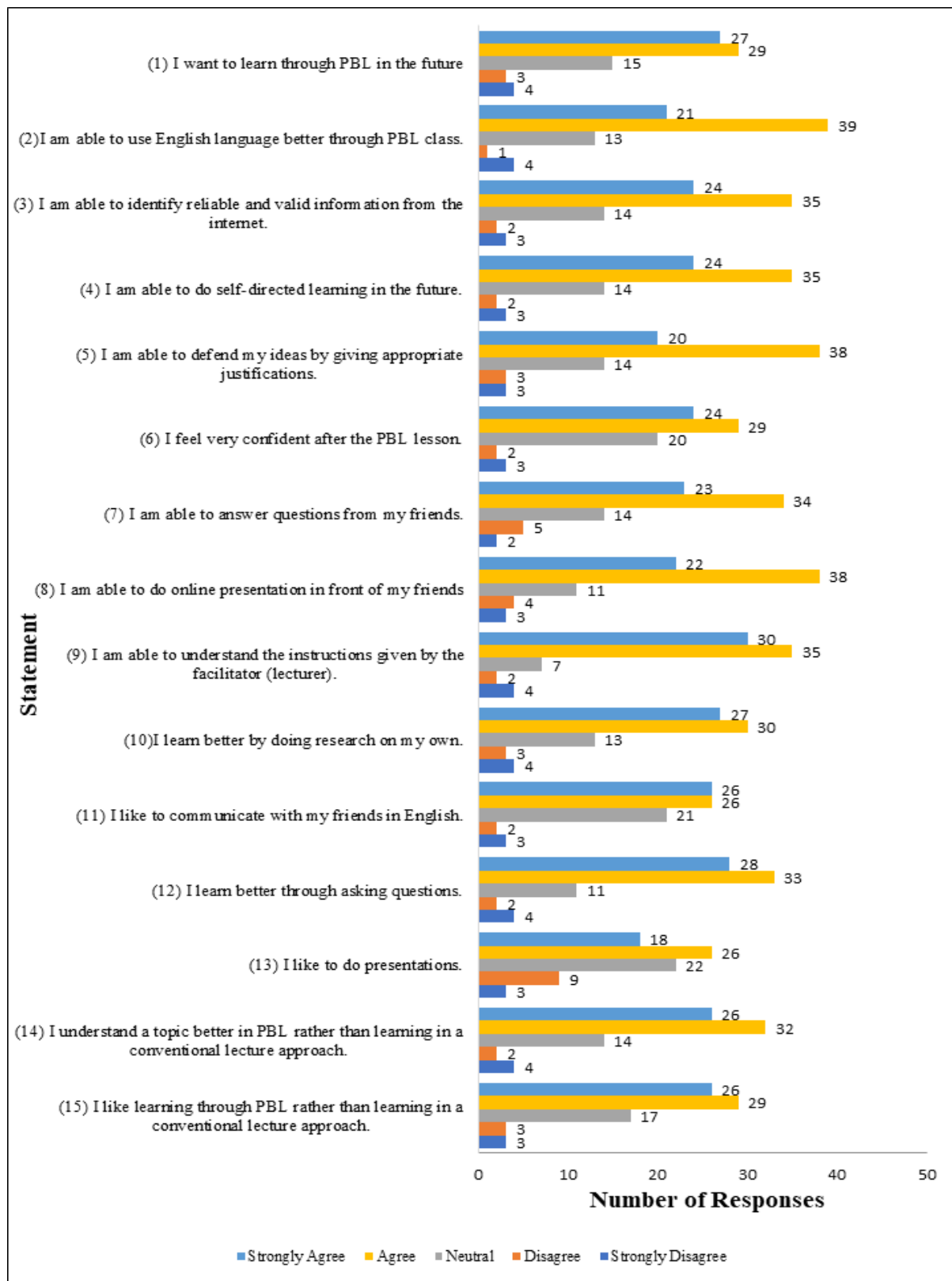
Figure 5: Students' feedback on PBL

Based on the first statement, majority of the respondents would like to learn through PBL in the future with 27 of them voted strongly agree and 29 voted agree. For Statement 2, a large number of respondents do feel that they are able to use English language better through PBL with 21 respondents voted strongly agree and 39 voted agree. After that, Statement 3 and 4 share the same number which

are 24 votes for strongly agree and 35 votes for agree. This indicates that the majority of them are able to identify reliable and valid information from the internet and they will be able to engage in self-directed learning when the opportunity comes in the future. For statement 5, there is a substantial vote for agree with a total of 38 respondents along followed by 20 votes for strongly agree. This validates that the majority of the respondents are able to defend their ideas by giving appropriate justifications during the PBL session.

Next, Statement 6 shows 24 votes for strongly agree and 29 votes for agree. This reveals that more than half of the respondents feel confident in terms of communicating in English after the PBL sessions. After that, Statement 7 displays 23 votes for strongly agree and 34 votes for agree. This demonstrates that more than half of the respondents are able to answer questions from friends during discussion sessions. Statement 8 also indicates a considerable number of votes for strongly agree and agree which are 22 and 38 respectively. This confirms that the majority of the respondents feels that they are able to demonstrate online presentation in front of their peers.

Then, Statement 9 shows significant numbers for strongly agree and agree which are 30 and 35 respectively. This corroborates that most of the respondents are able to understand the instructions given by the facilitator during the PBL sessions. Statement 10 has a record of participants agreeing to the statement as the highest with 30 students and another 27 voted for strongly agree. This indicates that 56 students of the total participants agree that they learn better by doing research on their own throughout the process finding the answers of the learning issue they have. Statement 11 shows that most participants agree that they like to interact with their friends in English through PBL with 26 students for both agree and strongly agree. PBL is a student – centred learning where students have to actively participate in the learning process and the other rule in this online PBL applied by facilitator was they have to communicate in English as the course used in this study was an English course. Statement 12 shows a result where the highest vote was agreeing (33 students) with the statement in addition with the other 28 voted for strongly agree.

Another positive feedback as most of the participants seem to get better understanding with an active participation by asking questions. This shows that students could increase their participation through the PBL approach. Statement 13 shows the highest vote is for agreeing with 26 students who like to do presentations and another 18 strongly agree. For statements 14 and 15, understanding the topic better and prefer to learn through PBL rather than the conventional lecture show that the highest number of students voted to agree with 32 and 29 students respectively. The second highest vote was to strongly agree with the statements, 26 students for both statements. This shows that students realised that they prefer PBL because they can learn more effectively with the use of PBL in language lessons.
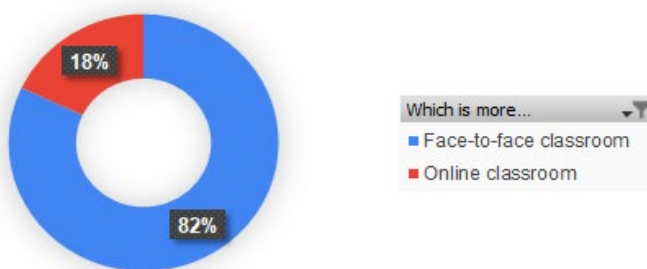
Figure 6: Appropriate mode for a PBL lesson

Figure 6 indicates that most students (82%) considered face - to - face classroom more appropriate for a PBL lesson in comparison to online. Only 18% of them considered online as a more appropriate mode instead. This is probably due to the technical glitches encountered during online classes that could not be avoided at times.
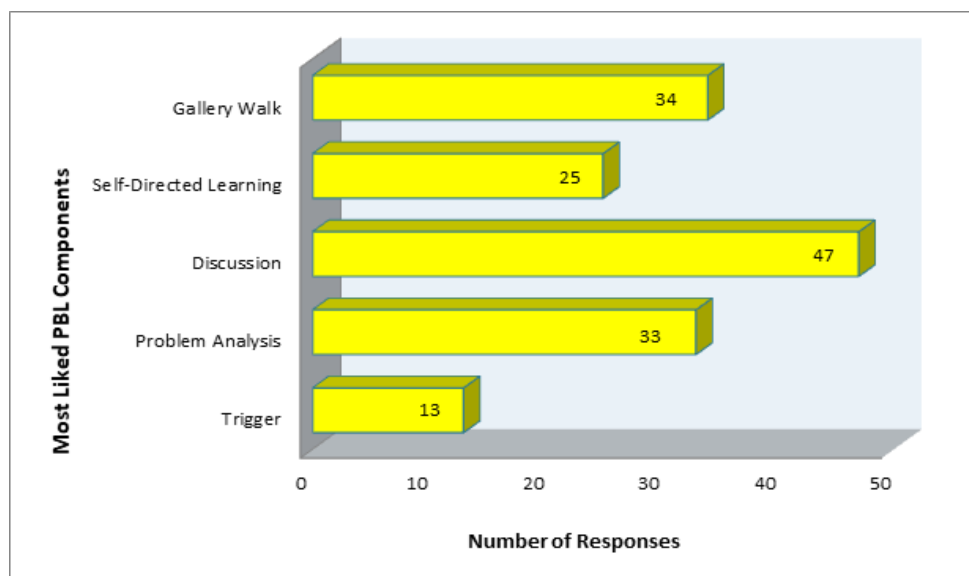
Figure 7: Things liked most about PBL

Figure 7 depicts that there are different things about PBL that the respondents liked most ranging from the discussion to trigger. Firstly, 47 of the respondents liked the discussion component involved in the learning process. 34 and 33 of them respectively liked the Gallery Walk and problem analysis in PBL. Another 25 of them liked the self-directed learning to obtain answers to their questions. 13 of them cited the trigger as what they liked most about the PBL approach in the English classroom.

3.2 Discussion

Overall, most of the students do appreciate PBL approach and they responded that they experience a certain degree of shift in terms of their learning style and their English communications. Notably, soft skills and language skills, predominantly communication appeared to be their practical inspiration of PBL. The utmost effect was on their confidence in using English. This is aligned with the findings of a study conducted by Cardon et al. (2022) and Siti Nurhayati (2022) towards the use of PBL in class where there was an increase of students' interest in learning, an increase in learning performance, taking responsibility and becoming more engaged in teamwork. According to Anthony (2010), this is vital in language learning because the students become fearless of making mistakes. As they endure using the language, they will ultimately advance in their language development and precision.

Apart from that, PBL serves as a challenge for the students where scaffolding occurs. This is aligned with Vygotsky's theory of Zone of Proximal Development (ZPD). ZPD is defined by Vygotsky (1978) as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers". Hence, after the PBL sessions, students are more confident in using the English language and they are more engaged with their learning as compared to their previous lectures. Majority of the students agreed that they can find appropriate information, give presentations, have peer discussions and use better English in class.

Despite the data shown in this study shows consistency in terms of the participants' view towards PBL, the data cannot be used for generalisation as the number of participants is quite small and this approach was only conducted for one major topic in the EHE course. Nevertheless, this study does have some pedagogical implications.

Firstly, PBL can be applied in higher education language courses as it serves as a change in learning style that is different from the conventional learning. PBL promises more opportunities to demonstrate

and sharpen English skills among the students. Moreover, students gain more autonomy in their own learning hence, making the students have responsibilities and probably increase intrinsic motivation as students see changes in themselves.

Secondly, the PBL approach can hone the soft skills needed in the current digitalised era where there is a widespread of information. It is important to teach our new generation identify and differentiate between credible, valid information from invalid or incomplete information.

4. Conclusion

In summary, this study indicates that PBL does have a significant role in online language learning among second language learners. An increase of students' participation in the classroom can be seen via PBL activities such as discussions and presentation sessions. This reveals that PBL is an effective tool to build students' language proficiency, critical thinking, soft skills and learning motivation as they are actively involved in their given tasks. Apart from that, students are able to demonstrate debates, negotiation, giving suggestions and show tolerance when they are engaged in discussion sessions. The effectiveness of PBL, however, integrates with the ability of the facilitator to assist students throughout the online learning and the procedures in PBL classroom. Based on the findings in this study, PBL shows a reasonable outcome through online platforms. Therefore, future researchers should consider applying PBL in different online English language courses or online third language courses. Apart from that, there is a need to understand in depth designing the most effective trigger that will make the best out of language learners which in turn makes PBL to be more widely used.

Acknowledgement

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