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Supporting Student Engagement with Technology: Findings from a Study of an Online Personal Learning Environment for Extensive Listening

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ABSTRACT

Learning English consists of four skills that students need to master: reading, writing, listening, and speaking. However, in EFL contexts, listening is found to be the most challenging and problematic skill for those students who encounter different kinds of listening problems. In order to improve Thai EFL students' listening performance during the COVID-19 pandemic, a two-week research project was conducted both to measure the levels of student engagement and to explore their opinions towards an online Personal Learning Environment (PLE) focused on extensive listening activities. A mixed-methods research design was applied, which included a pre-questionnaire for the purpose of designing the online PLE platform and listening materials, and a post-questionnaire to measure student engagement. Additionally, a semi-structured interview was used to investigate students' opinions towards the online PLE. The results showed high levels of student engagement in all three dimensions; behavioral, cognitive, and emotional. Students had positive opinions towards the online PLE because they found it enjoyable. Self-regulated and tailor-made learning also served to improve knowledge of vocabulary and pronunciation despite some personal problems with time management and internet connectivity during the project. These findings raise implications for educators, policymakers, and educational technology developers to consider when offering online PLEs for students' self-regulated learning.

Keywords: extensive listening, personal learning environment, student engagement, technology-enhanced language learning

Introduction

Universities and educational institutions all around the world have begun to value online platforms for providing courses in recent years. While there are advantages to offering educational opportunities via the internet, as we see with the emergence of Language Massive Open Online Courses (LMOOCs), attracting students to participate in online courses can be difficult for several reasons. Online participation can be hindered by students' computer literacy, adaptability struggles, time management skills, self-motivation, and technical issues (Kumar, 2015). However, online student engagement is on the rise and has become an essential criterion for evaluating the effectiveness of any educational course since it is an indicator of the quality of learning. Several studies have been conducted to investigate the notion of student engagement and found it has been used as an indicator of teaching quality (Leach, 2016); a predictor of learning outcomes (Burch et al., 2015); time and energy spent on academic activities (Kuh, 2003); amount, type, and intensity of investment by students (Jennings & Angelo, 2006); activities that lead to critical thinking, grading, and persistence (Kuh et al., 2008); involvement in educational activities (Radloff & Coates, 2010); achieving results in the learning environment, time dedicated to working, and influence on learning (Axelson & Flick, 2011); and of minimizing students' intentions to drop-out (Pascarella et al., 2010). Engagement also helps students connect with their studies (Kehrwald, 2008). Following that, level of student engagement is an assessment of the time and effort put into a course, as well as the sentiments associated with learning, the connections created via material, peer interaction, and the development of abilities linked to participation, performance, and emotions.

Student engagement is a complicated, multifaceted, and contentious concept with a variety of supporting ideas and reviews (Trowler & Trowler, 2010). Student engagement is significant because it helps teachers understand and intervene in student learning over time, helps students reflect on their learning, and facilitates their involvement in the learning process (Hu & Li, 2017). Consequently, it is high time to shift our focus on student engagement to the online learning environment. Throughout the COVID-19 pandemic and beyond, students have had to adapt to a personal learning space with lots of modifications. Resource-management techniques have been crucial to successfully adjusting to emergency remote education, given the abrupt switch to it at the beginning of the COVID-19 pandemic. In addition, there were external stress factors like uncertainty about the situation, distractions at home, and curtailed social interaction (Son et al., 2020). Instead of interacting with their teachers and peers mainly in the physical environment of the classroom, students had to rely more on online platforms and social networks for their learning. They then had to change their daily learning habits with the abrupt online learning environments. For example, some students had to purchase and equip themselves with more portable electronic devices for online learning, such as headphones and webcams, while some had to get used to reading online learning materials on their mobile device screens. These are common reasons why students fail to study online. Among the four language skills for learning English, listening was identified as the most difficult skill for Thai EFL learners when they must study online. This is according to the results from the pre-questionnaire from this research project.

Listening is considered the most problematic skill for Thai EFL learners due to learners' inadequate language knowledge, limited working memory, low motivation, anxiety, and lack of concentration (Suwannasit, 2018). Based on the pre-questionnaire results, it was found that three-quarters of the students involved in this research mentioned listening as the most problematic skill compared to speaking, writing, and reading. Moreover, their language proficiency lies in the A1-A2 range, which is very low based on the score from a Voxy Proficiency Assessment or VPA (Faria et al., (2019). VPA is a reliable online test that evaluates a test-taker's current English proficiency level and it is aligned with global standards such as the Common European Framework (CEFR). One possible reason for the poor language proficiency of Thai students is that in Thailand, possibilities for gaining exposure to English outside of the classroom are very limited

(Dhanasobhon, 2006). Therefore, students lack confidence using English and that contributes to the diminished English ability.

A Personal Learning Environment, hereafter PLE, is a learning method in which users may learn by utilizing accessible technology. It is common for students to build their own learning environment based on their personal needs and resources, especially when the COVID-19 pandemic abruptly reshaped and influenced all aspects of human life. In this study, Moodle was chosen as the platform to be designed in accordance with students' preferences and through which to deliver their extensive listening practice. Most of the previous research has focused on student satisfaction with or willingness to engage in online learning. Fewer studies have looked at the elements that contribute to or the levels of student engagement in an online environment. This study aims to measure the levels of student engagement at a university in Bangkok, Thailand, and the student's opinions towards an online PLE focused on extensive listening activities. Within the context of this research, most students have difficulties with their listening skills due to their low level of English proficiency and other personal obstacles. Besides, most of the participants are weekend students, who must work on weekdays. Hence, they simply have less time to focus on their studies. It is crucial for them to have an online PLE for self-regulated learning, and it is out of this need that the research project described herein was conceived. The results of this study are hoped to inform Thailand's higher educational system and other relevant stakeholders to improve their approach to teaching and learning, especially regarding online classes during and after the COVID-19 pandemic. Students' awareness could also be raised regarding creating their own PLEs to improve their learning, as well as to reinforce the significance of online PLEs and their functions in offering various EFL tasks. Additionally, it could inspire students to be more aware of their individual responsibility to engage in self-study. The usefulness of PLEs for students, which enhance their engagement in EFL learning, may be viewed favorably or adversely by decision-makers and educators. It may give scholars and university administrators insight into how to improve the process of teaching and learning a foreign language. Additionally, it could inspire developers of apps or other types of technology to alter, enhance, or produce a variety of EFL instructional materials to provide better PLEs for EFL students in the future.

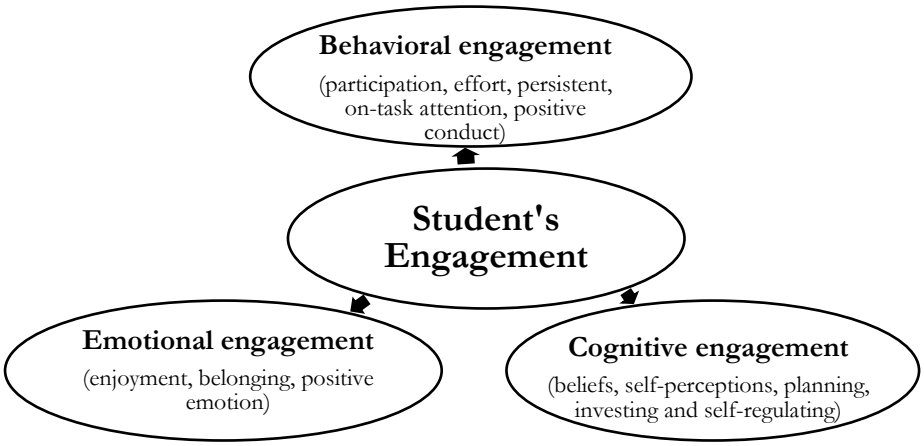
Literature Review

Student Engagement

Some academics have been attempting to construct assessment measures for student engagement in school during the last few years. Many scholars now consider engagement to be a multifaceted concept. According to Fredricks et al. (2004), engagement has three dimensions: behavioral (e.g., attendance and involvement), cognitive (e.g., investment in one's activities and appreciation of problems), and emotional (e.g., enjoyment of one's activities and appreciation of obstacles, along with positive affective reactions, including enjoyment and sense of belonging). They contend that all three types of engagement are crucial and that more multidimensional studies are needed. These categories, they believe, are non-hierarchical, with each holding equal importance in terms of student engagement. Based on preliminary quantitative data, these three types of engagement appear to encompass various parts of the student experience that are critical to academic performance and personal improvement (Blumenfeld et al., 2005). Figure 1 shows three types of student engagement.

Figure 1

Three Dimensions of Students' Engagement (Fredricks et al, 2004)



Teachers face a problem in developing a virtual environment that is interesting for students due to the nature and complexity of online education (Sher, 2009). An element contributing to postsecondary student persistence and attaining success is the engagement of the students (Flynn, 2014). Student engagement is a measure of an institution's educational quality (Robinson & Hullinger, 2008). One of the many goals that educators face is engaging students in learning (Ahlfeldt et al., 2005). Educators must adapt to suit the changing needs of their students as our environment advances and students' attention spans vary. However, assessing student engagement in online courses is difficult. According to previous research, students who are engaged in their studies are more likely to complete their activities, but students who feel isolated are more likely to drop out (Britt, 2015). The idea of engagement has been extensively researched in remote and online learning literature for decades according to Martin and Bolliger (2018). Student engagement has been defined by many scholars (Bomia et al., 1997) in terms of energy, improving knowledge, and promoting learning. Their investigation of students' engagement in their research focused on these elements. Attitude, personality, motivation, and effort were recognized as different elements in determining student engagement by Mandernach et al. (2011).

According to Dixson (2010), there are two key reasons to investigate student engagement in online education. First, online learning is here to stay in the context of higher education, and it's growing fast. The number of students taking online courses continues to rise (Allen & Seaman, 2016). According to Bowen (2018), higher education institutions that invested in online education do not encounter financial hardships in the event of a budget cut. Second, one of the most important aspects of student satisfaction is student engagement, as it provides important educational quality indicators (Robinson & Hullinger, 2008). Students are the reason for the existence of higher education institutions, and because students can take online classes from anywhere at any time, online education is complex and competitive. As a result, student engagement is critical for student engagement is critical if educational institutions want to retain online student enrollment, and it is one of the indicators of student development (Ramírez & Gillig, 2018).

Jasper (2021) assumed the online learning mode had somewhat greater levels of student engagement and satisfaction than the in-person sections. According to the research, educators should use strong design features, such as regular contact between the teachers and students, and promote student cooperation and student choice, regardless of the type of course. Student engagement, self-regulation, and enjoyment were found to be major predictors of student achievement by Commissiong (2020). The findings may result in positive societal changes in how universities approach the instruction process in online learning settings. Zeng and Goh (2018) found significant variations in metacognitive engagement between the two groups: online and in-

person, in three periods. These discrepancies, according to the article, had an impact on the various learners' listening development. It is necessary to explore the pedagogical consequences of a self-regulated learning strategy in extended listening for L2 listening development.

Personal Learning Environment

A personal learning environment or PLE is defined as "a learner-controlled environment for language learning" (Reinders, 2014 p. 14). A PLE is a teaching or learning approach in which learners can manage their learning environment using technological tools. (Tomberg et al., 2013). PLEs utilize a combination of digital-based tools and resources that are purposely selected by the learner to support them throughout the process, starting with their objectives and material selection. Not only do PLEs help support language learning, but they also enhance students' autonomy and contribute to life-long learning (Reinders, 2014).

In the Thai context, Ruengkul and Sukkavatee (2015) found that Thai EFL learners use different tools for different learning objectives. While Google and YouTube were mostly used to learn and enhance all English skills, Facebook was mainly used to acquire and improve only reading and writing skills. This indicates that a variety of tools may comprise major elements of the PLE, contributing to learner control and lifelong learning. More recently, Jitpaisarnwattana et al. (2022), inspired by the low participation and completion rates of learners, found that Thai EFL students tend to have their own learning environment even though there is a suggested learning pathway for them on their LMOOC. They tend to create their own "individual learning plan" (p. 325) rather than following a personalized learning pathway or PLP recommended by the system. The findings are in line with what Godwin-Jones' (2017) suggests, which is that personalized LMOOCs, the teacher should allow the learner to tailor their learning to engage in or participate in each course according to their personal learning needs.

These days, ELT scholars have integrated available technology into the classroom for PLEs. There are tools available for PLEs, such as platforms like LMOOCs, Facebook Groups, Google Classroom, and Moodle. Moodle is the most popular Learning Management System (LMS) tool available for E-learning instruction, and is recommended for language teaching (Garrote, 2007) and comprises useful tools to create and operate online courses (Su, 2006). Research indicates that Moodle is an effective learning space for various reasons, including the interaction between teachers and students (Acar & Kayaogl, 2020) as well as the potential for collaboration and engagement (Ziyad, 2016). Within the Thai context scholars have shown interest in the use of PLEs for Thai International Tourism and Hospitality undergraduate students, and for basic computer programming students as well (Chookaew et al, 2014). However, to the best of this researchers' knowledge, the integration of Moodle as a tool for PLEs to promote extensive listening remains unexplored.

Extensive Listening

Extensive listening is an approach to teaching listening skills, which aims to expose students to spoken English "without any pressure from anyone" (Gavenila et al, 2021, p.149). Extensive listening improves learners' listening fluency since students are exposed to comprehensible materials (Waring, 2008). While intensive listening is an approach in which a classroom teacher becomes the center of learning, material selection, and task design (Mayora, 2017), extensive listening, by contrast, is a student-centered approach in which the student can choose their own learning goal, along with appropriate listening materials, as well as what they will do after completing the listening task (Gavenila et al, 2021). Renandya & Farrell (2011) note that one of the most crucial characteristics of extensive listening is that a student will be exposed to comprehensible listening materials that they enjoy, such as television, radio, video and Internet sources, or audiobooks and magazines.

Concerning the personalization of extensive listening materials to suit students' preferences, Gavenila et al. (2021) stated that there are six main criteria for a selection of extensive listening materials. These include length, speaker, topic, accent, speed rate, and vocabulary complexity. However, to fit into the context of the current study, we have adapted five main criteria by merging "speaker" with "accent." This is because they tend to overlap. Thus, the five main criteria we have adapted include length, speaker (or accent), topic, speed rate, and vocabulary complexity.

To date, ELT scholars have acknowledged the benefits of diverse and authentic listening experiences (Renandya & Jacobs, 2016) to improve students' comprehension of spoken language, since it provides more than one mode of input. However, to the best of these researchers' knowledge, no existing study focuses on student engagement with extensive listening in a personal learning environment in which students can customize their learning path via a tailor-made lesson. Thus, the current study aims to bridge this gap by investigating the effects of a combination of a PLE and extensive listening by answering the following research questions:

1. What is the level of Thai EFL undergraduate students' engagement in an online personal learning environment for extensive listening?
2. What are Thai EFL undergraduate students' opinions towards an online personal learning environment for extensive listening?

Methodology

Research Design

This study employed a mixed-methods design which was carried out with one intact fundamental English language class. The aim of the pre-questionnaire was to collect students' general data and preferences in order to design a platform and select extensive listening materials for the personal learning environment (PLE). With the aim of investigating student engagement, the experiment was conducted via the student-selected platform. The Moodle was embedded with 14 extensive listening materials, accompanied by 14 self-reflections and 2 group discussions, which were based on the pre-questionnaire results carried out over the course of two weeks. Upon completion, the participants were given a post-questionnaire, which was designed to investigate the level of engagement in the online PLE for extensive listening. Later, eight participants were recruited for a semi-structured interview aimed at exploring Thai EFL undergraduate students' opinions towards the online PLE for Extensive Listening.

Participants

The participants consisted of one intact class of 30 Thai students who enrolled in an English for Communication course in the summer term of the 2021 academic year at a private university in Bangkok, Thailand. Purposive sampling was used to remain in line with the research goals (Crossman, 2020). All the participants were weekend students, consisting of 20 first-year students and 10 second-year students. There were 26 students majoring in Accounting, while two majored in Marketing and another two majored in Logistics and Management. All students have studied English for more than 10 years. To measure their English language proficiency, a Voxy Proficiency Assessment or VPA, which is a reliable online English proficiency test and aligned with Common European Framework (CEFR) was used (Faria et al., (2019). The English language proficiency of 18 of the students was at the A1 level (51-210 out of 1680 marks), while 12 of the students were at the A2 level (211-490 out of 1680 marks) meaning that they are basic users according to Council of Europe (2001).

Instruments

The instruments are divided into two types: research instruments and instructional instruments. The instructional instruments consisted of the pre-questionnaire, used for designing the activities in the online PLE for extensive listening. The research instruments consisted of the post-questionnaire, and the semi-structured interview.

The Pre-Questionnaire for Designing Activities in an Online PLE for Extensive Listening

The pre-questionnaire was developed by the researchers by adapting the extensive listening development survey from Gavenila et al (2021). It was divided into three parts containing 18 items. The first part surveyed participants' backgrounds. The second part dealt with their learning preferences for their PLE as well as the preferred platform to be used. The last part addressed their preferred listening materials for the extensive listening project.

In terms of validity, the pre-questionnaire was checked and verified using the Index of Item Objective Congruence (IOC) by three scholars in the field of English Language Teaching based on the scores ranging from -1 to +1, (Congruent = + 1 Questionable = 0 Incongruent = -1). Items with a score of less than 0.5 must be revised while items with scores of more than or equal to 0.5, on the other hand, are acceptable. The average IOC score of the pre-questionnaire was 0.93, showing the validity of the instrument. There were two items removed based on the IOC score (lower than 0.5).

The Activities in the Online PLE for Extensive Listening

To tailor and personalize listening materials in a student-selected platform via an online personal learning environment, the 14 extensive listening materials were selected based on the pre-questionnaire results. There were five main criteria for selecting listening. These were material length, speaker (or accent), topic, speech rate, and vocabulary complexity.

The length of the individual listening segments varied from 3-5 minutes, 5-10 minutes, and more than 10 minutes, delivered by both native and non-native speakers. The listening materials consisted of mostly songs and educational topics. The vocabulary complexity covered a range of general and academic words. The speech rates were slow and normal.

In terms of the suitability of extensive listening materials, the 14 listening clips were selected based on the 5 criteria previously mentioned. All of them were scrutinized to determine whether they were suitable for A1-A2 English language users as well as whether they were in line with the pre-questionnaire score. The two experts in the field of technology-enhanced language learning (TELL) were invited to check the reliability and validity of the materials.

The 14 individual segments of extensive listening materials were embedded on Moodle, which was the preferred online learning LMS (learning management system) selected by 100% of the participants. A Line group, which is an instant messaging group chat, was used as a secondary platform for communication.

Students were assigned 14 listening clips and were to write 14 short paragraph reflections on the listening material to ensure that they have completed all the listening activities. Since their language proficiency lies in the A1-A2 range, they were allowed to use both Thai and English to complete the task. Moreover, two discussion forums were created to enhance collaborative learning with peers and the instructor. The first forum was for the listening material for items 1-7 to be completed after the first week of the project. The second forum was for the listening material for items 8-14, which participants were able to complete by the last day of the project. Each group discussion forum is made up of 7 sub-forums for each listening segment, where students can share their ideas, ask questions of their peers and instructor, as well as write their reflections.

The validity of the activities in the online PLE for extensive listening was also checked using IOC by two experts in the field of TELL. The average score was 1.0 with some revisions i.e., 1) the order between listening materials and assignments, 2) inclusion of discussion forums 3) font style, colors, and letter capitalization, 4) the addition of a brief guideline for what students must do and who to contact if they have an issue.

The Post-Questionnaire

The post-questionnaire was adapted from Fernández Álvarez and Montes (2021). The questionnaire is designed to measure the three different dimensions of students' engagement and is made up of 10 items. Each item measures student engagement based on the literature, which divides student engagement into three main dimensions, namely, behavioral, cognitive, and emotional (Fredricks et al, 2004).

In terms of validity, both research instruments were checked and verified using the IOC by three scholars in the field of English Language Teaching. For the post-questionnaire, the average IOC score was 1.00 and some minor language revisions were made based on the experts' feedback.

The Semi-Structured Interview

The 5 semi-structured interview questions, which are shown in Table 1, were developed by the researchers to explore students' opinions towards the use and experience of an online personal learning environment for extensive listening.

Table 1

The 5 Semi-Structured Interview Questions

No.	Questions
1	What do you think about this project? (Do you like/dislike this project?)
2	What benefits did you get from this project?
3	What difficulties do you experience from this project?
4	What are your strategies to deal with those difficulties?
5	What recommendations or suggestions do you have for improving this project?

The validity of the semi-instructed interview was checked and verified using the IOC by three scholars in the field of English Language Teaching. The average IOC score of the semi-instructed interview items was 1.00 and all items were retained.

The 8 participants were purposely selected using "Criterion Sampling" (Cohen & Crabtree, 2006) based on students' rating scores on the post-questionnaire. This means that the 4 students with the highest rating score and the 4 students with the lowest rating score were selected.

Data Collection

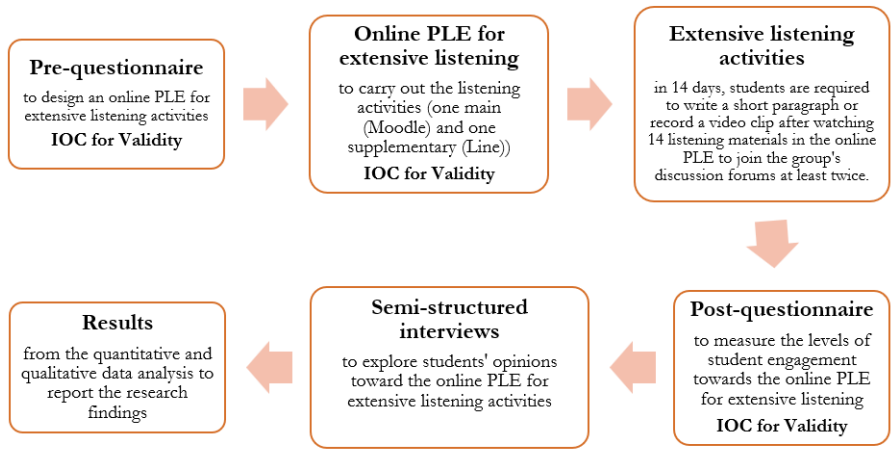
A consent form was administered to all participants to confirm their willingness to participate in the research project. One of the researchers, who was also the course instructor, met with the class and clearly explained the benefits of the research and what the project entailed. Furthermore, privacy and confidentiality for participants regarding all responses, reflections, and results of the research was assured.

The pre-questionnaire was distributed to the students on-site at the university. The data was analyzed and used to design activities in the online PLE for extensive listening. An

instructional instrument on Moodle contained the 14 extensive listening clips along with assigned tasks. After completing the activities in the online PLE for extensive listening, the participants were given a post-questionnaire aimed at investigating their engagement. After the questionnaires were administered to the 30 participants, they were collected and analyzed. Upon completion of the post-questionnaire, the semi-structured interviews were conducted with 8 participants. The qualitative data from these eight semi-structured interviews was collected from the 4 participants with the highest level of engagement and the 4 participants with the lowest levels of engagement, according to the post-questionnaire results. All interviews were recorded and transcribed verbatim after the interviews were completed. These semi-structured interviews were held in Thai, which is the participants' native language in order to gather information that was both exact and insightful from the participants. Each interview lasted approximately five minutes. Interviews were then translated into English for data analysis and reporting. Both inter-rater and intra-rater reliability checks were utilized by the researchers, including input from their supervisor. A framework for student engagement in the online PLE for extensive listening will be shown in Figure 2.

Figure 2

A Framework for Student Engagement in an Online PLE for Extensive Listening



Data Analysis

Quantitative Analysis

In response to the first research question, the 5-Point Likert scale investigating participants' engagement towards the online PLE for extensive listening was utilized. The 5-point scale was utilized, as it is better than other scales in terms of reducing participants' frustration as well as increasing response rate and quality (Sachdev & Verma, 2004). The criteria for interpretation of the Likert scale are shown in Table 2.

Table 2

The Criteria for Likert Scale Interpretation

Rating	Rating score	Scale score
Strongly disagree	1	1
Disagree	2	2
Neither agree nor disagree	3	3
Agree	4	4
Strongly agree	5	5

To interpret the data based on the five-point scale, the mean scale score varies from 1.00 to 5.00. The following criteria of scale interpretation were adopted from Ghaffar (2003) as in Table 3.

Table 3

Scale Scores Interpretation

Scale score	Meaning
4.50-5.00	Very high
3.50 -4.49	High
2.50-3.49	Moderate
1.50-2.49	Low
1.00 -1.49	Very low

Qualitative Data Analysis

A thematic and inductive analysis approach was used to report results, as this would allow us to report the analyzed data in terms of themes (Creswell, 2014). The researchers arranged the raw data by transcribing the interview. The transcription was reread to ensure accurate understanding of the information as well as to reflect on the meaning of the information, along with the field notes taken during the interviews. The data was then coded into themes inductively. To ensure data validity and reliability, an expert in the field of technology-enhanced language learning justified the coding and the interpretation of the data.

Results and Discussion

In response to both the first and second research questions, the post-questionnaire and semi-structured interview were used to gather data from respondents about their level of engagement and opinions towards the online PLE for extensive listening. The results and discussion are presented as a combined section.

Students' Engagement in an Online Personal Learning Environment for Extensive Listening

The post-questionnaire was used to gather quantitative data from respondents about their engagement in the online PLE for extensive listening. Table 4 shows the results for the three dimensions of student engagement from the post-questionnaire. HIGH or VERY HIGH levels of engagement are indicated in three dimensions termed behavioral, emotional, and cognitive engagement.

Table 4

Results for 3 Dimensions of Student Engagement

Types of Engagement	Mean Score
Behavioral	4.24
Emotional	4.11
Cognitive	3.70

When a student's behavioral and emotional engagement are both significantly high (>4.0 in mean scores) and higher than their cognitive engagement (3.70), this can be interpreted as the student being eager and excited about their online PLE and the assistance and support they receive from their teacher in the project. It means that even though some of the learning content may not be the most appropriate for them, a VERY HIGH level of engagement can be easily attained when students participate in the process of creating a personalized learning environment. Due to the teacher's thorough planning based on guidance from the pre-questionnaire survey which investigated students' backgrounds and preferences, the level of cognitive engagement remained HIGH.

An important finding of this study is that students choose and value asynchronous, self-paced learning in an online PLE for extensive listening activities when the results of their engagement are significantly high. The main findings of the research objectives were shown in Table 5.

Table 5

Results of student engagement with the PLE for extensive listening

Question Item	MEAN	SD	Types of Engagement	Level of Engagement
No.1: I participate actively in this online PLE for the extensive listening activities regularly.	4.53	1.52	Behavioral	Very high
No.2: I pay attention to listening materials while listening during the extensive listening activities.	4.20	1.07	Behavioral	High
No.3: I use Line or other applications to ask questions when I have a problem or don't understand the lessons during this online PLE (Personal Learning Environment) for the extensive listening activities.	4.73	1.75	Behavioral	Very high
No.4: I am well organized in my learning for this online PLE for the extensive listening activities	3.53	1.05	Behavioral	High
No.5: I understand the extensive listening activities in this online PLE and completed all the assigned work.	3.63	0.80	Cognitive	High
No.6: I can apply knowledge from the listening materials of this online PLE for the extensive listening activities in my daily life.	3.96	1.24	Cognitive	High
No.7: I memorize difficult content in listening materials of this online PLE for the extensive listening activities.	3.53	1.04	Cognitive	High
No.8: I feel desirable to learn the listening materials in this online PLE for the extensive listening activities.	4.13	1.01	Emotional	High
No.9: I enjoy listening to the materials because I can self-regulate my learning activity for this online PLE for the extensive listening activities.	4.06	0.92	Emotional	High
No.10: After listening, I feel happy and desirable to do an assignment to understand more about the content of this online PLE for the extensive listening activities.	4.16	1.03	Emotional	High

Beginning with the quantitative results from the post-questionnaire, item three shows the highest mean at 4.73. Even though the listening materials were selected based on their language proficiency, it should be noted that these students possess a lower level of proficiency in the A1-A2 range. The listening materials are in line with their language proficiency and not too difficult for them, but they still needed to cope with some difficult aspects such as unknown vocabulary.

This is the reason they used Line, an instant messaging application to text their friends or peers. For example, the statement from Student No.5 claimed that "*I use Line to ask my peers about difficult parts of the listening materials",* which constitutes behavioral engagement.

This can be explained by the human learning habit for success. Humans are social learners by nature. Even though this may just entail trying to sneak a peek at someone else's online PLE, students like the feeling of assurance that comes from knowing that they are headed in the right direction. Any collaborative learning experience will ultimately succeed or fail based on how well the participants engage with it. While there are a variety of reasons why this may occur, students can be comfortable if they consider the dynamics and motivations of each individual; hence, they will have the best chance of success. The Line application is one of the most popular social networks in Thailand. Therefore, it is easy for students to use for collaborative learning, as it is already one of their favorite means of communication.

For item 1 in the post-questionnaire, participants were asked to respond to the statement, "I participate actively in this online PLE for the extensive listening activities regularly". The mean score for this item is 4.53 which is the second-highest one. This is understandable as it is the very first time that students could join the process of making an online PLE for themselves. One interpretation of these results is that adult students already possess a certain degree of self-regulation (Whipp & Chiarelli, 2004). These fundamental results are consistent with earlier studies. In terms of behavioral engagement, they had a high level of engagement because they found the environment enjoyable (Renandya & Farrell, 2011).

This might be viewed as a reflection of Asian traditional education. In most cases, students will be actively and regularly involved in class activities or assignments proposed by their teachers. In this study, when presented with the opportunity to create a PLE for themselves, students were less stressed and experienced more enjoyment because they considered this a kind of DIY (do it yourself) activity incorporating their own hobbies or interests. Unlike project-based learning, most students find that online PLEs are easier because they do not cause as much stress for them as their teachers' lessons and assignments. This is also supported by students' positive opinions toward the online PLE, which were illustrated by the responses from the students' interviews.

In terms of cognitive engagement, participants also responded with high levels since this project helped improve both their vocabulary knowledge, in line with Ivone & Renandya (2019), and pronunciation, consistent with Almalki & Algethami (2022). Additionally, students had a high level of emotional engagement since this is tailor-made, self-regulated learning. The students feel motivated to learn in "a learner-controlled environment" (Reinders, 2014, p.14) through their own preferred listening materials (Waring, 2008). In terms of PLEs, the results of Kauffman's (2015) study adequately described the characteristics of online self-regulated learning, which can be found in this research project. It means that, behaviorally and emotionally, students are aware of their level of enjoyment, the benefits they are receiving, and their duties when taking part in an online PLE. They are especially aware of their own problematic English listening skills. In addition to quantitative data, by drawing upon qualitative data from the semi-structured-structured interviews, students shared their positive opinions toward the online PLE for extensive listening in terms of benefits of the project, i.e., enjoyable environment for learning, self-regulated learning, tailor-made learning as well as the improvement of vocabulary knowledge and pronunciation.

On the other hand, even though participants were highly engaged with the PLE for extensive listening, both items four and seven received the lowest scores in the group, with a mean of 3.53. Item four was also about behavioral engagement; however, it was about the organization of learning.

All participants in this study are part-time students. This means that they have to work during the week and have little time to study while being pressured to maintain work-life balance. Some students complained that they couldn't manage or organize their learning schedules effectively. In general, working students have less time to dedicate to their lessons. Classes requiring a lot of extensive activities are impacted (Tumin et al, 2020). According to Bandura's Social Learning Theory (1977), learning, development, and behavior are all responses to the

environment and are shaped by the learner's surroundings. However, some studies have demonstrated the negative effects of distractions during the learning process. Stress from balancing employment and school might cause students to drop out. Working lengthy hours, particularly in off-campus jobs, might have a negative impact, while working a few hours on campus can assist students to integrate into campus life and boost retention and engagement (Tinto, 1975).

The results of this research are in line with previous research conducted by Lamb et al. (2004) in which it was reported that individual, family, and social factors might hinder student engagement. Our findings concur, in that learners have faced internet connection problems during the Covid-19 pandemic, when the classroom was shifted to an online format (e.g., Each & Suppasetseree, 2021; Jibrinet al., 2017; Nuraeni et al, 2020).

Item 7 asked students about the value they place on the memorization of difficult content, which is indicative of cognitive engagement. The lowest scores in the high-level group showed the students' effort in learning. These students did not significantly exploit their cognitive demands and mental effort. This indicates that these students require additional support to raise their cognitive engagement level to improve their learning performance in the online PLE. In addition, this data may help instructors decide whether to step in or provide extra support to improve their students' cognitive engagement with the online PLE.

The majority of the students showed lower levels of cognitive engagement, compared with behavioral and emotional engagement, which is similar to the study done by Shukor et al. (2014). Teachers should identify alternate strategies to raise the cognitive engagement levels of students. For example, Valencia-Vallejo et al. (2019) suggested using scaffolding to help students interact with an online learning environment after discovering that it can improve students' metacognitive ability, academic self-efficacy, and achievement in learning. Additionally, Zhu et al. (2009) claimed that by doing so, students could expect to have better learning experiences and improved performance while engaging in higher-order cognitive tasks. Thus, while students strive to achieve greater levels of cognitive engagement, those who don't are advised to increase study time with the subject at hand in order to become more independent and self-reliant, which can improve the quality of learning in an online environment. Because there aren't many studies that specifically address this topic, particularly in an online PLE, the findings of this study add to the body of knowledge about student engagement.

Student's Opinions towards the Online PLE for Extensive Listening

It is necessary to listen to the voices of our students and to know their opinions to improve the Online PLE for Extensive Listening. The semi-structured interview was used to collect data qualitatively. Even though some students experienced difficulties with their online PLE's extensive listening activities due to issues with their internet connections, or sluggish mobile devices, the majority of them have favorable opinions toward the project as a whole. The three components of student engagement, which are researched and measured in this study, are behavioral, emotional, and cognitive. Student participation in both academic and extracurricular activities is referred to as behavioral engagement. Students' emotional engagement includes both positive and negative emotions in response to schools, instructors, and classmates. While cognitive engagement discusses students' awareness and readiness to acquire challenging skills. All are discussed and illustrated in the following parts.

Firstly, both behavioral and emotional engagement are clearly illustrated when students claimed that this project created "an enjoyable environment", which is the first factor contributing to why they liked the project. An enjoyable environment means a learning approach with "a lot of comprehensible and enjoyable listening input" (Renandya & Farrell, 2011, p. 5) without any pressure, and the listening materials and activities are pleasurable.

As students stated,

> *"I learn without any pressure" (S1).*
> *"I learn in an enjoyable environment in which I can enjoy the preferred topics" (S4).*

In an enjoyable environment, they are apt to open their minds and be willing to learn as well as ask questions if they have any problems understanding something, which will help them understand the listening materials more deeply. When they were asked to express their opinions and make suggestions, a few students said that they enjoyed the project because of its interesting listening topics and enjoyable activities. They also enjoyed the presence of their friends both online and offline.

Secondly, "self-regulated learning," makes it possible for students to personalize and customize their learning paths. Also, this is the indicator of cognitive engagement of students to their online PLE in this project. Self-regulated learning is composed of both plans and actions. It involves a learning path that learners can manage to pursue an educational goal by themselves (Kinnebrew et al., 2015; Zimmerman, 2002). Students' opinions were positive since they could self-regulate their learning within a personal learning environment on Moodle (LMS). Our findings are in line with Jitpaisarnwattana et al, (2022) who claimed that a personal learning environment allows students with choices in "learning approaches, content and pace" (p.325) to pursue each personal learning goal. There is a general agreement that the educational strategy guiding the establishment of PLEs emphasizes learner empowerment and endorses the initiatives of self-regulated learners (Van Harmelen, 2008). It is in contrast with traditional education in most Asian countries where students still have limited power and freedom to develop their learning environment. It creates a joyful and satisfying learning atmosphere for the students in this study, since they could join in on the development of their online PLE under their instructor's supervision and guidance. This contributed to the third advantage of this current study, which is tailor-made learning.

"Tailor-made learning" is a process in which students are provided with a learning plan to meet specific needs and requirements particular to their educational goals. The platform for this project, Moodle (LMS), and listening materials therein, are based on responses to the pre-questionnaire. Listening materials and tasks were subsequently embedded in the Moodle platform. Students' reflections showed their positive opinions about tailor-made learning as follows:

> *"I like this project because I was provided with preferred listening materials. And I am a person who likes to listen to English songs, so I can sing."* (S3)
> *"I learn in an enjoyable environment in which I can enjoy the preferred topics"* (S4).

Our findings are in line with Yeh's (2013) study in which podcasts are utilized for extensive listening. Music and arts are always bound to elicit human enjoyment, provide entertainment, and promote relaxation. People from all different backgrounds and industries would value and enjoy such artistic activities that coincide with their preferences. It is an indication of how the future implementation of PLEs and their development for EFL learners should be carried out.

Fourthly, "learning motivation" also contributes to students' positive opinions. It was found that students were motivated to listen to the extensive listening materials. Reasons for this likely mirror previously mentioned items related to how personal preferences were fulfilled and satisfied within the content of their online PLE. This is something that tends to boost learning motivation.

> *"I am motivated to learn, for example, I want to know the meaning of words. Well, I'm a person who likes to listen to English songs. Listen to songs and I will be able to sing. and practice pronunciation*" (S2).
> *"I liked this project, and I am motivated to learn. When I listen to my preferred songs with melody. It makes me remember easily because I can pause and replay when I want."* (S8)

All three dimensions of engagement can be seen in these extracts from students. Gonulal (2020) found that students are motivated to learn through extensive listening as it helped them improve their listening skills. Extensive listening via Podcast and Vodcast not only allowed students to learn the target language anywhere and anytime, but also included exposure to real-life

examples of English. Our findings are also in line with Vandergrift (2004) who indicated that the ability to pause and replay features of listening materials gave L2 learners an unprecedented element of control over their listening materials. This solved the issue of directing their attention. Learners are exposed to authentic language and are able to use pause and replay functions. This helps improve students' motivation for practicing listening, as they can better understand rapidly spoken and authentic texts.

Fifthly, the last benefit is "language improvement", which can be linked to cognitive engagement. As some of them stated,

> *"To pronounce an English word if I am not sure I don't dare to pronounce. This project makes me more confident, especially in terms of pronunciation."* (S1)
> *"I can read the script and practice pronouncing so I think I have improved my pronunciation." (S3)*

Our findings are also consistent with Gonulala (2020), who indicates that extensive listening not only improves listening comprehension, but also pronunciation skills. This is because students also learn the correct pronunciations of words.

Apart from pronunciation, our findings reveal that students also improved their knowledge of vocabulary. Our findings are also consistent with Ivone & Renandya (2019) who claimed learners acquire the vocabulary when they conduct narrow listening through repeated exposure to words, expressions, and phrases. In our study, students were exposed to listening materials which include words, expressions, and phrases they can practice.

> "*When I translate, I learn vocabulary and meaning. I learn vocabulary and their meaning." (S7)*
> *I learned a lot of vocabulary and meaning as well as how to use it from listening to songs. (S3)*

Finally, in terms of the challenges faced in this current study, there are two main aspects that need to be taken into consideration; time management and internet connection. Time management is one of the most challenging factors affecting student engagement since they are part-time students. As the following students stated:

> *I don't have much time to do the listening since I need to work Monday to Friday" (S2).*
> *"I have a job, so I have a time-management problem. I stayed up late than before to finish the project" (S8).*

The difficulty is due to the limited time that students have to devote to this project, since most of them needed to work and study at the same time. This is a limitation of this study. Future research may be applied to different types of participants in order to better generalize and provide a more holistic perspective for online PLEs.

Apart from time management, "a poor Internet connection" is the other challenge. As students mentioned:

> *"I found myself struggling with the internet which hinders my online learning." (S1)*
> *"I got stuck while listening because my internet connection is poor." (S8)*

This is probably a common issue all over the world. Modern technology has been developed with the fast integration of IoT and the 4.0 digital era and grants us access to the Internet and personal mobile devices at a very high rate of speed. However, there is still an imbalance in technology distribution and its affordability for everyone, especially in remote areas or with low-income learners. To solve this problem, learners might use the computers available at their universities, if possible, which likely have much more stable Internet connections.

To sum up, students had positive opinions about the online PLE for extensive listening. This is in line with Lim & Newby's (2018) study, indicating that learners had positive opinions towards the use of web 2.0 for PLE in their context, as it enhanced learners' ability to use available tools to complete the course and participate with their peers. Our findings also shed light on the

use of PLEs for extensive listening on a preferred platform. This is because Moodle and Line, which were selected and utilized based on the pre-questionnaire, were able to suit each personal learning environment. This allowed students to incorporate use of Connectivism Theory during their use of the PLE. Interestingly, the level of behavioral engagement is the highest, which is correlated with students' opinions based on their responses to the questionnaire and the interview afterwards. For example, they used available tools and applications to both participate in and complete this project, such as machine translation, or the use of Line to text their friends and peers. Our findings match what Elfeky (2018) mentioned about students' positive opinions towards the use of PLEs as learners could benefit from many available online sources to pursue their education goals.

Limitations

The study had two major issues that kept it from being as rigorous as it might have been, even though it was planned and executed by precise and research-based guidelines. First, there were only 30 participants in the research. These 30 students were assigned to a communication class, taught by the researcher. The fact that this study was conducted at a university in Thailand may have contributed to the outcomes in a manner that may have been different had the study been conducted at other institutions. The small sample size of students used in this study is also one of its shortcomings. Future research is necessary to increase the generalizability of this study, and a larger-scale inquiry with more subjects might prove beneficial. The fact that limited time and resources were involved in this research project due to it being conducted during the COVID -19 pandemic is the second research constraint. The design of the PLE, in this case, Moodle, should be utilized with students' technology literacy and affordances in mind, because some of them encountered problems with logging in or internet connections. Moreover, if the researchers had been able to acquire additional qualitative data from more participants, a more in-depth analysis would have been possible. Finally, this research follows a model from Fredricks et al. (2004) with only three dimensions of engagement, which might lack a very popular one recently: social engagement. This has been illustrated by the urgent needs of students to use Line as an immediate channel to interact with their teacher and peers within a limited time for learning. Future research could explore and integrate more dimensions in one study to have a more holistic view to better evaluate the research purposes: student engagement in an online PLE.

Recommendations

The findings of the present study indicate that the integration of PLEs for extensive listening help enhance student engagement, as the participants were all satisfied with the implementation of this project. More importantly, the results of the present study have raised some interesting points as well as recommendations concerning pedagogy and further study. Firstly, student engagement can contribute to language skills improvement. Further research can use pre and post-tests to measure participants' improvement, e.g., listening fluency, listening comprehension, vocabulary knowledge, or even pronunciation. Secondly, in the interest of promoting both language improvement and learner engagement, integrating extensive listening into a personal learning environment can be applied to the ELT classroom. However, extensive reading on a personal learning environment, on the other hand, may be considered for further studies. Extensive reading's characteristics are similar to those of extensive listening but differ in terms of the use of spoken or written materials. Thirdly, since the selected platform is designed based on a pre-questionnaire, further study may consider allowing more platforms to make it possible for students to have more choices, rather than only relying on one platform (e.g., Facebook group, web blog, mobile app, etc.). Finally, further studies may focus on different learning contexts, such as other educational levels, language proficiency levels, age groups, or even

genders. Finding a new learning environment and evaluating its effectiveness for students may also prove beneficial.

Conclusion

The COVID-19 pandemic has created many difficulties for all stakeholders involved in higher education in Thailand and all over the world. These include students, parents, teachers, and educational institutions themselves. Student engagement plays an important role in learning. This study investigated levels of student engagement and explored their opinions towards an online personal learning environment for extensive listening activities. The results revealed that students have high levels of engagement with their studies. Student engagement consists of three types of engagement, cognitive, behavioral, and emotional. Drawing upon quantitative data, these were shown to be at a high level. Moreover, students had positive opinions toward the project in terms of it providing an enjoyable environment, opportunities for self-regulated and tailor-made learning, as well as learning motivation and language improvement. Although there are two remaining challenges for participants, namely time management and poor internet connectivity, which may hinder online learning, students show a high level of engagement. They value and enjoy the use of online PLEs for extensive listening activities despite some of those personal and technological issues.

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