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DESIGNING A RHIZOMATIC ONLINE PERSONAL LEARNING ENVIRONMENT MODEL TO IMPROVE UNIVERSITY STUDENTS' ACADEMIC LISTENING SKILLS



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ABSTRACT

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The paper proposes principles and a theoretical framework for the construction of an online personal learning environment model named the PLERN model, aiming to assist university students to improve their academic listening comprehension skills, and to apply the suggested model to investigate the targeted students' perception of online learning. The paper describes the importance of listening comprehension at tertiary level, and the principles employed to construct the PLERN model. It presents the theoretical and intellectual framework used to construct the model, and a suggested research methodology to effectively implement this online learning model in the digital age. The paper also includes research design, research settings, and participants, instruments to implement the PLERN model, and the data collection methods of data analysis procedures which bring out research findings as well as the recommendations of the future study. The paper ends by indicating the weaknesses and strengths of the model which help researchers maximize the model strengths and minimize its weaknesses.

Contribution/Originality: The primary contribution of this paper is to construct a rhizomatic online PLERN model to assist university students improve their academic listening skills using resources completely free online, easily-accessed, and available online anytime and anywhere. This rhizomatic model aims to raise language learners' awareness of their great potentials that if used properly will lead to desired academic achievements.

1. INTRODUCTION

Personal learning environments (PLEs) are environments where people and communities assisted with tools and resources can interact in a very flexible way. PLEs promise to learners to bring out an important result of learning and help build habits of independent learning (Peña-López, 2010; Wilson, 2008). PLEs promise new teaching methodologies for successful learning in order to make teachers re-think of their traditional ELT methods.

PLEs open doors for learners to freely explore resources and tools that they need, helping them get rid of “teacher-controlled environments” and create their own learning worlds. If learners need help or support, PLEs help build learners collaborative space in a networked learning and social environment (Elliott, 2010). PLEs is often seen as a concept or an approach or “a new application of educational technology” Attwell (2007). PLEs help

students and teachers change their thinking ways. From a view of looking at PLEs as a technological application, teachers and students should view PLEs as methods that help them solve their personal learning problems. Downes (2005) seems to express a similar view when he says, “The PLE is also a recognition that ‘one-size-fits-all’ approach characteristic of the LMS (Learning Management System) will not be sufficient to meet the varied needs of students” (p. 20).

Attwell (2007) defines PLE as “a new approach to the use of new technologies for learning” (p. 7). Downes (2010) defines a PLE as “as a content management device or as a file manager, like a tool that allows “learners to engage in a distributed environment consisting of a network of people, services and resources.” (p. 25). Buchem, Attwell, and Torres (2011) describes a PLE as “an approach to using technology for learning, focusing on self-directed and self-regulated uses of tools and resources by learner.” (p. 4). Buchem, Tur, and Hoeltherhof (2014) focus using technology in PLEs; likewise, Archee (2012) too finds a PLE balancing the use of technology, resources and social networks that learners need to engage and socially interact with other people via PLE. Archee (2012) further states that a PLE is viewed as a “digital space in which learners have the ability to access, aggregate, create, store and share learning materials. The PLE materials can include such artefacts as lectures, notes, assignments, blogs, wikis, and forums and most PLEs have social networks that users can use to socially interact with others” (p. 419).

There is a dearth of research studies that focus on rhizomatic personal learning environments models, using researchers’ designed listening materials or listening tools, especially self-directed video and audio resources. For this reason, there is a lack of adequate guidelines to assist students at tertiary level to improve their academic listening skills. An attempt is made in this study to fill this research gap and identify a new listening technique in the form of the PLERN model.

2. LITERATURE REVIEW

2.1. *The Important Role of Listening in University Students’ Academic Life*

Listening has long been considered one of the most important skills that a language learner needs to master in order to use the language learned competently (Flower & Miller, 2005; Miller, 2003; Puakpong, 2005). However, when investigating literature relating this skill, it seems listening is neglected although a language learner spends most of his or her time in class on listening (Canh, 1999; Thinh, 2006; Tomlinson & Dat, 2004; Trang, 2020; Vãn, 2007; Wright, 2002). Research conducted by Burley-Allen (1995) and Flower and Miller (2005) confirmed that language students in general have to spend most of their time in class for their listening practice (40%, for listening compared to 35% for speaking, 16% for reading and only 9% for writing). These researchers discovered one reason that caused listening rejection in classroom practice is the inappropriate application of ELT methods to teach listening. In the Vietnamese context, Vietnamese researchers and educators also found out that listening teaching in Vietnam does not produce good results for language learners. Despite the need for oral communication skills, especially for students who will participate in workforce after school, in most Vietnamese schools, teachers continue to apply grammar-translation methods in English classes (Canh, 1999; Canh & Barnard, 2009; Tomlinson & Dat, 2004). In both secondary and tertiary levels, the MOET curriculum is examination-driven. That is one of the reasons teachers of English tend to teach the English language to prepare students for tests and examination (Trang, 2015). Tuy (1999) and Hiep (1999) stressed that with the examination-driven instruction, teacher-centered language teaching methods in Vietnam produce students who may achieve the highest grades in tests and examinations, but fail to communicate effectively in real-life situations. This is also a common case of most schools with large classes worldwide (Locastro, 2001; Phan, 2004; Trang, 2015).

For academic listening, students have to listen and comprehend spoken texts in academic settings, for instance, in lectures, tutorials, small group discussions, and seminars (Flowerdew, 2004; Goh, 2018; Lynch, 2010). Research shows that academic listening causes learners several problems that require strategies to cope with. Most research

focused on strategies that can effectively help solve listening issues while the use of technology and the construction of digital or online models are still lacking in literature (Trang, 2020).

2.2. A Need for a Rhizomatic Online PLE Model to Help Improve University Students' Academic Listening Performance

According to Lian (2014) the term *rhizomatic* or *rhizomic* has its root in botany and was proposed by postmodern thinkers like Deleuze and Guattari (1987). Lian considers it as “a metaphor used to represent a dynamic, open-ended, self-regulating personal learning network constructed by the learners themselves to meet their perceived needs”. Students navigate “nodes of knowledge representations” and “construct personal knowledge” rather than sticking on to some curriculum redesigned by school or government (Pineda, 2013). There is need to establish a link between PLEs and the theory of Constructivism. The theory of Constructivism recommends learners to construct knowledge by themselves, especially in this digital age. For instance, Constructivism attempts to explain how adult learners learn by constructing knowledge for themselves. Constructivism is viewed as a synthesis of multiple theories diffused into one form; it gives a combination effect of using a person's cognitive abilities and insight to understand their environment. According to the Constructivist approach, constructing meaning is an inevitable process that happens in human beings' lives all the time. The meaning is then frequently de-constructed when human beings confront any situation. Lian (2003) believes that “knowledge-building is totally personal and depends on a collision between people (as meaning-makers), the world around them, and the necessity/obligation to develop internalized meanings as a result of those collisions” (p. 4).

PLERN proves to be a dynamic online learning model to help students improve their listening comprehension skills at tertiary level –a model that helps students explore and construct their own knowledge. This model is in line with the Constructivist theory, under which learners of PLERN model can actively construct their knowledge based on their previous experience. This makes them very active in interacting with the environment in order to make sense of the world. Also, under the Constructivist theory, the role of teachers in the PLERN model is to guide students' learning. Teachers viewed in the PLERN model as facilitators who provide students with their help and expertise, provoking students to be “autonomous thinkers, to develop integrated understandings of the concepts, and to pose and seek to answer –important questions” (Brooks & Brooks, 1993). With such goals, it is clearly wrong for teachers to assert their authority and humiliating tactics with students who make mistakes to teachers' questions. As long as teachers know learners can build knowledge by “comparing, contrasting, and contesting” with the difficulties they face, teachers become like supporters and/or advisors to students who are curious in constructing their own knowledge (Lian, 2003; Lian, 2011; Lian, 2014). Because the teachers' role is shifted to students, under the Constructivist theory, this PLERN model asks for the re-examination of a “standardized curriculum” as school curriculum may not meet all students' needs. Teachers then play a role of facilitators who suggest students with ideas, resources that students themselves construct or making meaning based on their own experiences or past history.

Influenced by the Constructivist theory, the PLERN model will provide students with a variety of examples and representations of content that students can use to construct meaning (Cassady, 1999; Eggen, 2001; Eggen & Kauchak, 2004; Lian, 2011; Lian, 2014). Examples and representations that the PLERN model provides help students connect to real-world tasks because the more closely connected to real-world content representations are, the more effective are these resources that the PLERN model provides.

2.3. Design of a Rhizomatic Listening Model

In order to assist students, solve problems that university students have, an online learning model called the PLERN model is designed. The PLERN model is based on Lian and Pineda (2014)'s ideas of a rhizomatic model in their paper *Rhizomatic learning: “As when and if” A Strategy for the ASEAN Community in the 21st Century* (see Figure 1).

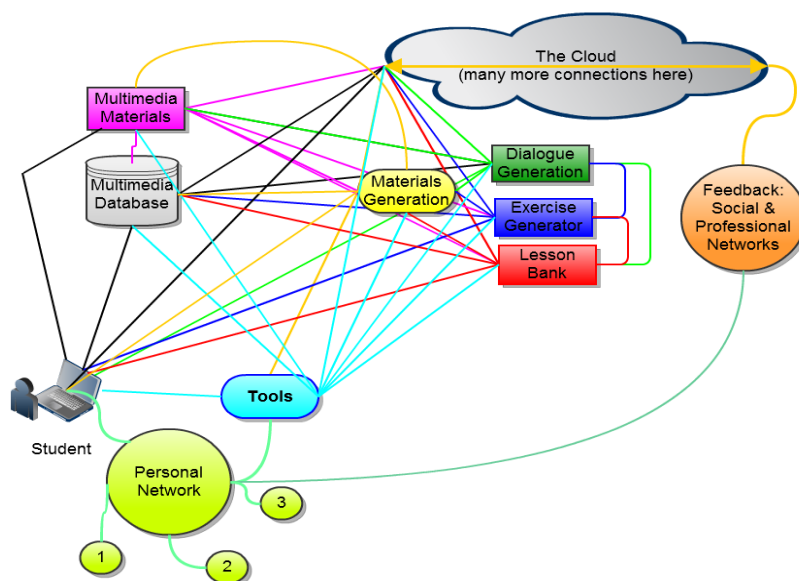


Figure-1. Fragment of a personal learning environment for foreign culture/language learning. The student (bottom left) is at the origin of the entire system.
Source: Lian and Pineda (2014).

Technology has offered great opportunities to computer-assisted and web-based learning. Previously, it was difficult to think language teaching could go beyond the boundaries of the classroom, but it is applicable now thanks to PLEs (Attwell, 2007). By building integrated PLEs which support self-determined and self-directed learning modes, students can study anywhere they like. PLEs operate as open access libraries without walls (Attwell, 2007; Brophy, Fisher, & Clairke, 1999). Students, especially language students can personally select resources that they prefer to use. Students can also engage in personalized collaborations with other students. Thus PLEs can be viewed as complex systems helping students organize their learning freely and thus take ownership of it (Tochon, Karaman, and Ökten (2014). The PLERN model supports students' autonomous learning by systems or networks that gather numerous web-based and instructional materials and resources that are free, online, and available to students anywhere and anytime they want to refer to.

3. RESEARCH DESIGN

The PLERN model employs a quasi-experimental research design because it will be impractical to randomly assign the participants into the experimental and control groups. As the study mainly aims to obtain the students' perceptions of the effectiveness of an online PLE in terms of listening skills improvement, the questionnaire, semi-structured interviews, students' reflective logs, and pretest and posttest are used as the main research instruments of the study.

3.1. Research Settings

The PLERN model can be applied in any educational setting where students are able to learn listening to the English language, attend practice listening lessons, engage in private tutoring, and carry on individual listening practices beyond classrooms or even at a higher level. Students can use this PLERN model to further strengthen their (academic) listening comprehension skills. With computers or smartphones, learners of the PLERN model can perform their self-directed study anywhere and anytime they like, not just be limited to the classrooms (Picciano, 2017).

3.2. Participants

Potential participants of this model should be selected as a purposeful sample. According to [Lederman and Abell \(2014\)](#) and [Tian \(2012\)](#) participants from two intact groups are viewed as typical samples for researchers to investigate problems they face with academic listening at tertiary level. The rationale behind their sampling is that these students finish their high school study in Asian environments where listening skills are nearly neglected for the sake of acquiring reading and grammar comprehension for examination purposes only ([Flower & Miller, 2005](#); [Tien, 2010](#); [Vân, 2007](#)).

3.3. Instruments

To collect the data for the research study recommended by this model, researchers can use four research instruments: (1) a questionnaire on the students' problems to academic listening and their perception of the PLERN, (2) Pretest and Posttest, (3) a semi-structured interview on students' perceptions of the PLERN model, and (4) students' reflective logs.

3.3.1. Questionnaire

The questionnaire should be translated in the mother language in order to avoid students' misunderstanding or confusion of the ideas or information on the questionnaire. The questionnaire is designed in open-ended questions and five-rating Likert scale questions with values labeled from 1 to 5, namely "strongly agree", "agree", "uncertain", "disagree", and "strongly disagree" ([Peterson, 2000](#)). The questionnaire should be examined by five experienced teachers, and will be tried out with students to gain feedback for the modified questionnaire. The pilot of the questionnaire helps the questionnaire gain its validity and the questionnaire assists the researcher understand the research participants' perceptions on the effectiveness and applicability of the PLERN model. The Cronbach's alpha (α) of the questionnaire is set to ≥ 0.70 ([Taber, 2018](#); [van Griethuijsen, van Eijck, & Haste, 2015](#)) to test the designed questionnaire reliability. So, if the reliability coefficient value of the study questionnaire calculated is over 0.70, the questionnaire is accepted.

3.3.2. Semi-Structured Interview

In-depth semi-structured interview can be used to help researchers gain deeper and richer information of the research participants' perceptions of the model that cannot be obtained from a well-designed structured questionnaire ([Nunan, 2006](#); [Seliger & Shohamy, 2001](#); [Wilkinson & Birmingham, 2003](#)). The semi-structured interview is conducted as a follow-up activity with focus groups after the questionnaire has been delivered and examined. Focus-group also provide research participants an opportunity to interact with each other, and from their interactions, a collection of extensive data is collected ([Krueger, 1994](#)). Interviews can be recorded or notes taken for future reference and they will be implemented in quiet, relaxing places recommended by [Dencomsbe \(2003\)](#) so that students can feel comfortable to express their opinions freely. The interview can be piloted with 10 students to obtain its internal consistency reliability.

3.3.3. Pre-Test and Post-Test

Two retired TOEFL or IELTS academic listening tests can be employed for the pre-test and post-test. A pre-test will be given to students before the experimental study starts, and a post-test will be conducted when the experimental period is over. The two listening tests aim to evaluate students' English academic listening comprehension abilities before and after the experimental period.

3.3.4. Students' Reflective Logs

Finally, a student's reflective log is also used to elicit the students' reflections, thoughts and feelings, and to discover other factors that affect the students' listening performance that the other three research instruments cannot obtain, especially issues related to metacognitive strategies that the students apply in solving listening problems. Goh and Taib (2006) believe that listening reflective logs provide "insights into the ways in which listeners deal with strategy training or their perceptions of a new experience, such as the usefulness of a new advance organizer, a new strategy or a new approach to listening" (p. 3). Conrad and Donaldson (2006) further elaborate: "Reflective feedback allows instructors to evaluate the effectiveness of the students' experiences in the course." (p. 73).

3.4. Data Collection Procedures

The researcher should first get access to all the four research instruments recommended in this study to collect data. As a first step, the questionnaire is delivered to research subjects one week after the experimental study ends. Students are allowed to fill in the questionnaire in class or at home at their convenience. Secondly, 60 students in two classes are purposively selected for the semi-structured interviews based on their answers to the questionnaire. Interviews should be tape-recorded for later data transcription and data analysis. Interviews must be conducted in friendly environments to make the interviewees feel at ease and express as much information as possible. Thirdly, two retired TOEFL or IELTS tests should be given to research subjects. The pre-test will be conducted at the mid-term of the course and the post-test is given at the end of the course to evaluate the effects of the PLERN model on the experimental group. Finally, students' reflective diaries or reflective logs should be collected by the end of the course. Students are required to note down what they actually experience while performing their activities (e.g. types of activity performance, sequence of activities, tools or resources to carry out activities, their perception of activities).

3.5. Data Analysis

Both qualitative and quantitative data analyses are conducted in the present study. The data obtained from the questionnaire, semi-structured interviews, pretest and posttest, and students' reflective logs are used for data analysis. Below is a summary of the four research instruments and data analysis techniques used in this study.

Table-1. Summary of the research instruments and data analysis.

Research Questions	Instruments	Data Analysis Methods
1. What is the effect of the PLERN model on academic listening skills of the target students?	-Questionnaire (Open-ended & five-point rating scale questions)	- Descriptive Statistics (mean & standard derivation of difficulties) - T-test/ ANCOVA
2. How do the students perceive the value of the PLERN model in improving their academic listening skills?	-Questionnaire -Interview -Reflective logs	-Content analysis

3.6. Validity and Reliability of Research Instruments

Validity and reliability are the factors that contribute to the success of this research project. Validity of this research can be guaranteed to bring out the accuracy of the findings and reliability of the research and ensure the researcher to carry out this approach consistently (Gibbs, 2007; Yin, 2003). In order to gain validity and reliability for this study, the follow procedures are carried out to as illustrated in Table 4:

Table-2. Summary of the instruments and methods of data analysis.

Instrument	Validity and Reliability
Questionnaire	For content validity and internal reliability: -Be tried out with 05 experienced teachers in designing questionnaires. -To be tried out with 10 students. - Cronbach's alpha (α) ≥ 0.7 is accepted.
- Interview	- Multiple investigators: having more than one researcher to code and recode data, then compare findings. - Thick, rich description of the study.
- Pre-test and Post-test	T-test: <ul style="list-style-type: none"> • A paired-samples T-test in SPSS is used to compare the participants' mean scores on the pre-test and post-test. • An independent-samples T-test is applied to test significant differences between the average score of two classes' pre-test.
-Students' reflective logs	- Content analysis

4. THE PLERN MODEL

4.1 Theoretical and Intellectual Framework for the Construction of the PLERN Model

The PLERN model suggested in this paper is based on the five principles proposed by Lian and Pineda (2014):

- The first principle is that students are viewed as “very different human learners” and different individuals. Students may not like to work with things that teachers subjectively provide or suggest. Students may view the world differently due to their “operational history” (Lian & Pineda, 2014; Lian, 2014).
- The second principle is about “all we do is based on acts of meaning-making” and our making sense of the world seems from our “subjective view”. Our “meaning-making” does not reflect “true representation of reality”, but we all still need this principle to enable us to act.
- The third principle is “the meanings that we create and live by are internal, individual and unknowable by others”.
- The fourth principle is that as we cannot have direct ways of sharing or communicating our thoughts, we use semiotic or symbolic systems in order to communicate. We have our meanings “constructed by using our internal logical and representational systems”. That means with this principle, teachers and educators should bear in mind learners themselves see the world very differently from teachers' and educators' views.
- The last principle is about logical and representational systems constructed through our interactions with our environment by our attempts to understand “reality,” or people's actions or ideas in multiple ways. These attempts depend on our “operational histories” which enable us to make sense of the world. As these “operational histories” are individually different (Lian, 2003) they potentially make us understand the same phenomenon differently. It means teachers' input (information, knowledge, ideas, all presented as texts) introduced to students in the same group can be interpreted differently by students.

These five principles can be used as guidelines for the construction of an online learning model to assist students overcome their difficulties in academic listening tasks and to improve their listening performance.

The intellectual framework that helps build this PLERN model has its origins in the works of Petar Guberina (Guberina, 1976; Renard, 1978) “a Croatian psycholinguistic and a scholar working in a postmodern perspective before the advent of postmodern theory. Guberina had been working on problems of perception with the hearing-impaired as well as individuals with normal hearing” (cited in Lian (1991)). His work in the area is based on what he called the “verbo-tonal theory of perception”. However, his theory often tends to be overlooked or misunderstood. Guberina (1976) idea about deafness is different from other people's idea. He thought physical deficit of hearing may be caused by ways the deaf organize their world differently from normally-hearing people. Being viewed as a

starting point, Guberina's work has been subsequently strengthened, simplified and re-framed through application of thinking of Bourdieu (1991); Bourdieu (1995); Derrida (1982); Lian and Lian (1997); Lian (2003) and Lian (2003). The PLERN model will apply this intellectual framework when viewing language learners' difficulty in comprehending spoken languages by providing students with opportunities to let them create their own ways of understanding the auditory signals of academic listening texts.

The PLERN model will help create an online self-taught personal learning environment based on the notion of the rhizome which allows learners, on their own, to access multiple, non-hierarchical data representations and interpretations (i.e. resources of all kinds). The PLERN contains resources as doors, and from these doors more interest-based resources from the "Cloud" or from the Internet can be explored. When entering the PLERN, students seem to be connected with friends and people from social and learning communities/networks to find information, seek advice, and navigate resources for their activity performance which is based on their "perceived needs". The suggested PLERN model possesses a rhizomatic structure viewed as a self-regulating structure responsive to the learners' needs (Deleuze & Guattari, 1987; Lian, 2014).

4.2 Operational Space

Having discussed the principles, intellectual and theoretical framework of rhizomatic model, this section sketches out an online of PLE, which contains three layers: (1) Theoretical and intellectual framework, (2) Operational space, and (3) Support/Help System. This framework is based on Lian (2003):

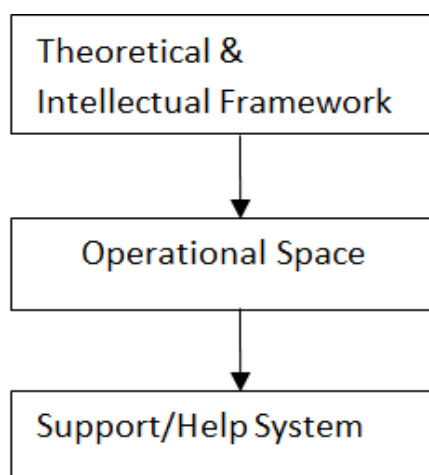


Figure-2. A conceptual PLERN approach.
Source: Lian (2003).

Figure 2 represents a conceptual framework in its simplest form for the PLERN approach. This framework rests on the belief that students perceive the world and make sense of the world very differently from others due to their different personal logical and representational systems, and their past history (Bourdieu, 1995). Hence, students should be treated differently and provided with more opportunities to construct their own knowledge and their own understanding.

In the PLERN model, the operational space is a place for identifying learners' needs. It is the space where students can explore materials, resources to develop skills, obtain goals on their own way and on their own pace. The operational space is a place where students can identify their learning needs when "confronting, contrasting and contesting their understandings with the reality" (Lian, 2003; Lian, 2014). In case of seeking help or encountering problems, students may need a third layer of Support/Help system.

4.3 Support/Help System

While navigating the PLERN, students encounter the problem of selecting unreliable resources: they might need people's ideas to help them solve their difficulties. They may also need assistance from a learning network, from a social community. The "Support" layer which is connected to social, learning communities provides students support they need. This layer also gives students a chance to socially, academically connect to the world outside of their classroom, collaborating with teachers, peers and experts who are willing to assist students when students have problems, or when they ask for help (Lian, 2014; Trang, 2018).

4.4. Objectives of the Model

This online PLERN model achieves the following research objectives: (1) to examine whether the PLERN helps students improve their academic listening skills; (2) to investigate the target students' perceptions using the the PLERN to achieve these purposes. To achieve these purposes, a mixed research design of quantitative and qualitative methods was employed as recommended by Johnson and Christensen (2012). Due to its application as an integrated online learning model for university students, the quantitative research method is ideally suitable. While to examine how university students perceive this online learning model, the qualitative research method is recommended.

4.5. Tools and Resources Used in the PLERN Model

In addition to students' needs analysis, literature review and principles and features of PLEs, the researchers also need a few resources to apply the PLERN model. The content of the PLERN resources is divided into two groups: (1) in-class resources and (2) out-of-class resources.

4.5.1. In-Class Resources

In-class resources are textbooks or any other sources which classroom teachers can recommend to students. These are obligatory textbooks and they are taught according to school syllabus. In-class resources are not within researchers' control, but classroom teachers must try to make optimum use of these school-assigned resources.

4.5.2. Out-of-Class Resources

A. Websites for General Listening Practice

1. www.ello.org

This website gives the PLERN learners opportunities to perform their listening drill and practice with video and audio lessons. Listening drills and practice activities designed by www.ello.org give the PLERN learners chances to practice listening to different accents spoken by native and non-native speakers of English. This website offers a variety of rich and authentic topics that may attract the PLERN learner's interest. Moreover, www.ello.org has listening resources that are classified to suit students at different listening levels ranging from beginning, intermediate to advanced levels. Video and audio lessons can be downloaded from this website. There are multimedia resources with study guide, optional captions, quizzes and vocabulary explanations. Interestingly, this website offers audio lessons designed interactively with flash games.

Feedback is given to the PLERN learners synchronously to reinforce correct responses, to correct or remedy incorrect responses through "check answers" or "show answers" buttons already designed by the website owner. These buttons function as a teacher providing students with feedback of the listening activity immediately.

2. www.englishteststore.net -A Self-Assessment Listening Website

Englishteststore.net is another website that the PLERN learners can make use for their self-paced learning. The website provides listening tests designed for language learners of different academic backgrounds.

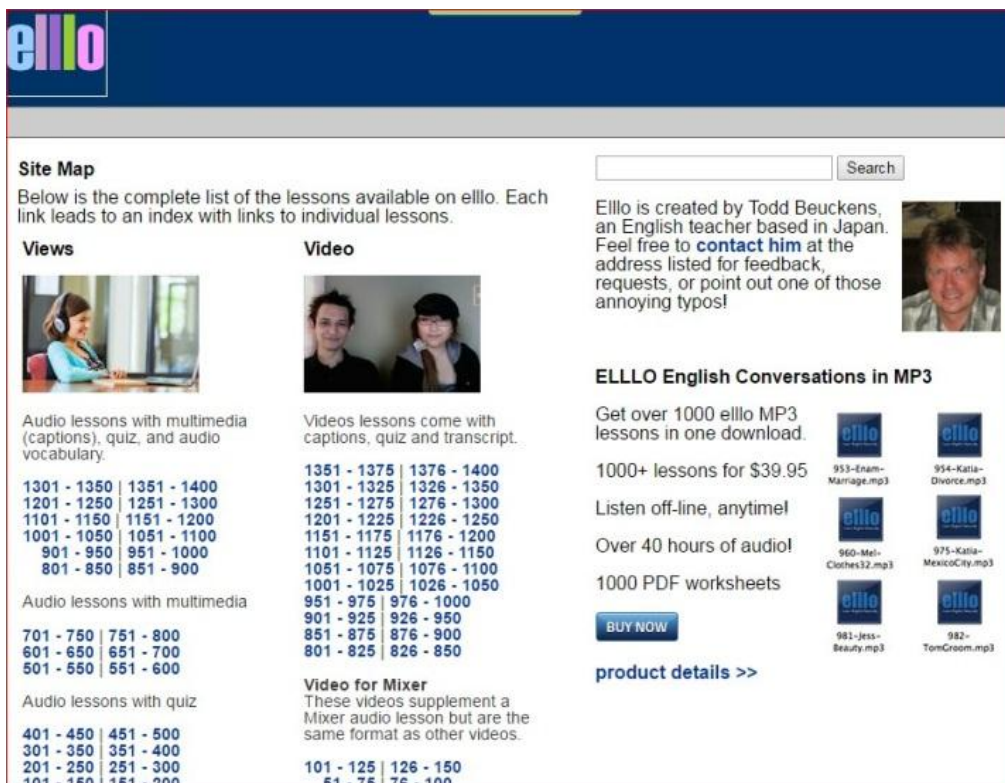


Figure-3. Start page of www.ello.org provides resources with audio and video lessons
Source: <https://ello.org>.

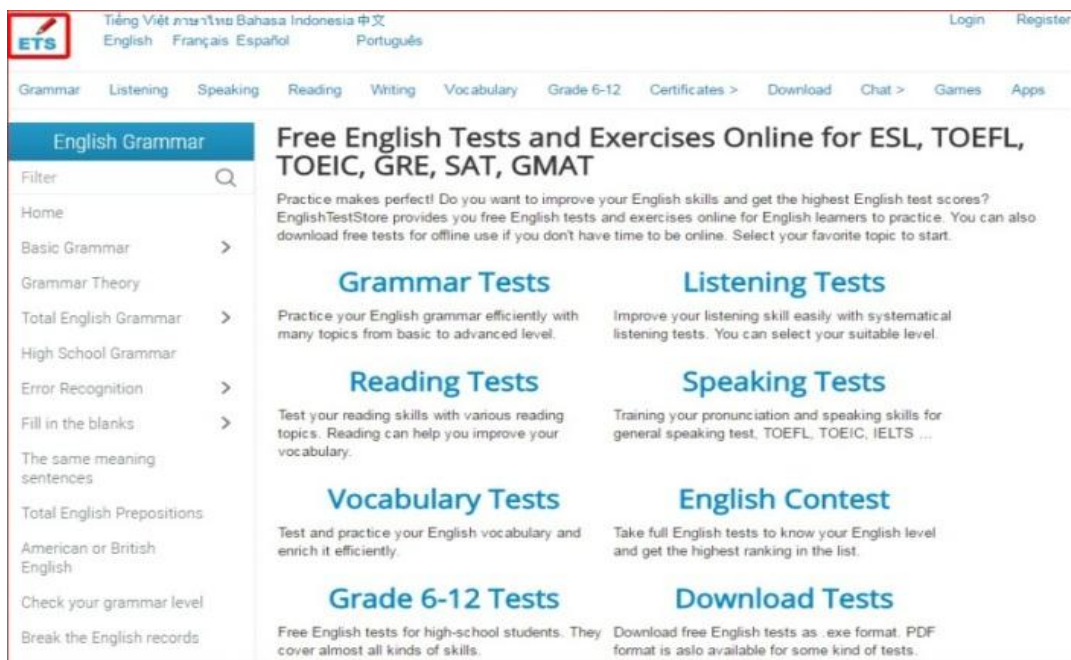


Figure-4. Start page of www.englishteststore.net provides listening self-check tests and other related academic resources
Source: <https://englishteststore.net>.

Englishteststore.net is a website designed for international users. The website has different languages such as Vietnamese, English, French and Spanish. With different languages, students can have a language choice when using this website. This website is also useful for the students not only in their short-term try out, but also useful for their long-term practice. This is an integrated website from which language students can review their four skills. For listening, the PLERN students can choose different types of listening tests which include internationally-recognized listening tests like TOEFL, TOEIC or listening tests based on the CEFR framework.

Englishteststore.net users can test their listening levels before selecting the suitable listening tests they prefer. Listening tests include listening to lectures in English, listening to TOEFL tests online. On this website, the research participants can also attempt TOEFL listening tests anytime and anywhere. These tests are very similar to the two retired TOEFL listening tests that the research participants of the experimental group of this study should take.

The screenshot shows the Englishteststore.net interface. On the left is a vertical list of test categories: Short Conversation, Long Conversation, Question and Response - Easy to Medium, Question and Response - Hard, English Short Talk - Easy, English Short Talk - Medium, English Short Talk - Hard, Filling Gap - Easy, Lecture in English, Listen and Fill in the gap of a sentence - Easy, Listen and Fill in the gap of a sentence - Medium, Listen and Fill in the gap of a sentence - Hard, Listen and Rearrange - Easy Level, and Listen and Rearrange - Medium Level. The main content area features a photo of a person wearing headphones, followed by an 'Introduction' section explaining the importance of listening skills and the need for practice. Below this is a 'Requirements' section stating 'A headphone or speaker' and an 'Instructions' section stating 'Each test has its own instruction. You just follow the instruction of the test to answer questions.' At the bottom, there are two columns of blue links for various test types, including Picture Description, Listening Tests - True False, Listen and fill the blanks, Conversations - Easy to medium, Conversations - Hard, Short Conversation, Long Conversation, Question and Response - Easy to medium, Question and Response - Hard, Filling Gap - Easy, Listen and Rearrange - Easy Level, Listen and Rearrange - Medium Level, Listen and Rearrange - Hard Level, Reorder Conversation - Easy, English Pronunciation, English Stress, Same Meaning Sentences, and Check your listening level.

Figure-5. Englishteststore.net provides language learners with listening tests on various levels with self-check answers.
Source: Englishteststore.net.

In his study and based on conducting listening research for the past 30 years, Lynch (2010) opine that most listening research studies currently focus on lectures and techniques of note-taking to help students listen well in academic lectures. Lynch considers conversational English as a topic still lacking research studies. He argues that conversations in academic settings can contribute to academic listening success. Luckily, Englishteststores.net possesses such features for online PLE learners. The website offers audio and video dialogues or conversations that online PLE learners can use to listen to spoken English conversations.

3. www.FreeInterTV.com

Thirdly, the PLERN learners have the opportunity to experience the “real-world” environments where they have an opportunity to explore their listening abilities through the use of the FreeInterTV.com.

There are several reasons for selecting this website: First, there are several TV channels accessible through this website. It broadcasts most popular television channels such as BBC, ABC, Sky News, CNN and so on. These TV channels bring the real world to students. Second, this website allows viewers to collaborate with friends and find answers to challenges faced while listening to TV programs or in comprehending their content. Third, the website hosts activities that are viewed as “competitive simulations” and present students with “problems” and ask students to find “solutions” to problems. These challenges, if overcome, improve their listening skills and create individual or group competitive simulations. Lastly, TV channels on this website can instill PLERN learners’ high motivation. A study on students’ needs analysis shows that watching TV program is one of the five top activities that students like to do to better to improve their listening comprehension skills (Sottile & Brozik, 2004).



Figure-6. Start page of FreeInterTV.com offers free international TV channels for language learners to entertain and self-study. Source: <https://FreeInterTV.com>.

B. Websites for Authentic Academic Lectures

There are two websites recommended for the research participants to prepare their academic lectures: (1) the Academic Earth.org, and (2) the MIT Open Courseware website. These authentic websites can help strengthen the research participants' academic listening skills at tertiary level. They provide students with video or audio lectures; lectures with or without transcripts; and materials such as lecture notes, lecture outlines, further readings that the research participants can access and download freely.

1. www.AcademicEarth.org – it is a free online website for authentic academic lectures from top universities in the world. It was launched in 2009 and it currently contains 50 authentic or real-life academic lectures taken from top universities in the world. The website includes a collection of free online college courses in many academic subject areas such as psychology, biology, computer programming etc.

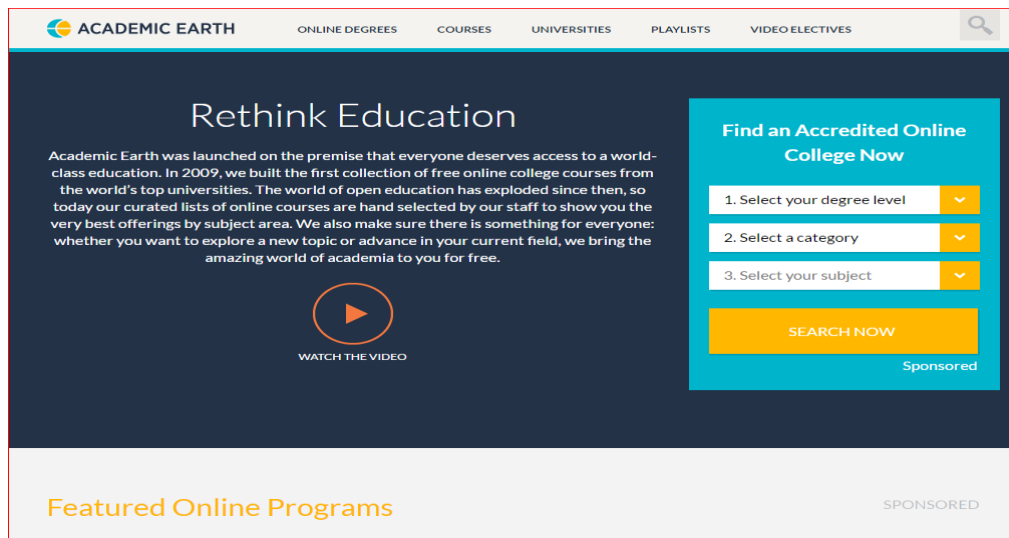


Figure-7. Main page of AcademicEarth provides learners with videos for their academic listening purposes. Source: <https://academicearth.org/electives/>.

. Using this website, research participants have a chance to freely select high-quality academic lectures that are of their interest and/or are appropriate to students' learning goals. Academic videos can also be uploaded via the "Video electives" section as one shown in Figure 7 and 8.



Figure-8. Playlists section from AcademicEarth.org provides learners with videos on different academic subjects.
Source: <https://academicearth.org/online-college-courses/>.

Each lecture uploaded in this website lasts from 30 to 50 minutes. For instance, the lecture below is from open education courses from Yale University, and it is donated to student for free use along with authentic academic lectures.

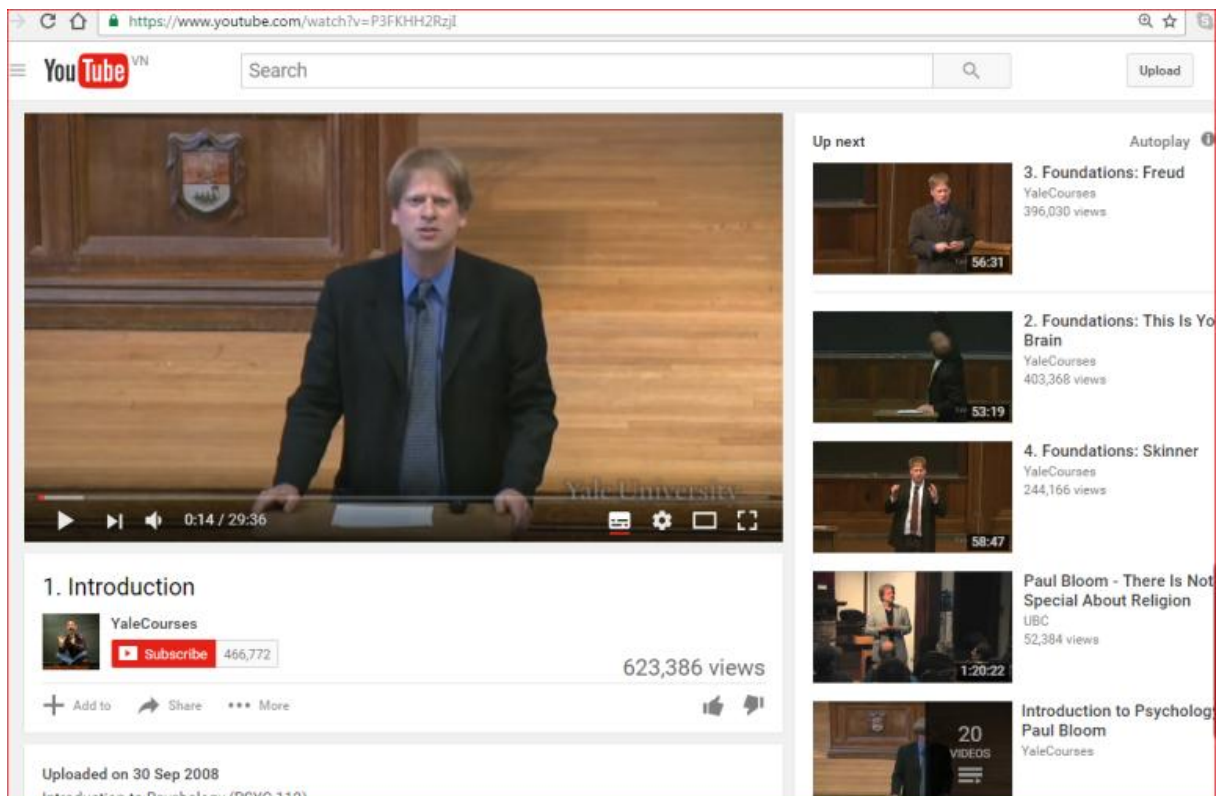


Figure-9. Lectures on Introduction to Psychology offered to students for academic online self-study mode.

Source: <http://academicearth.org/playlists>.

In this video, the instructor begins with his personal introduction, a brief description of the course, duration of the course, requirements of the course and course objectives. Course assignments and downloadable hand-outs and video files are accessible on this website. This website tries its best to offer university students “the world of open education”. Academic videos from this website are absolutely free and are available to be accessed anytime and anywhere.

2. MIT Open Courseware –A Free Online Resources with Audio-Video Academic Lectures

This MIT Open Courseware is a website of Massachusetts Institution of Technology. Though it was developed 15 years ago, it is frequently updated. Currently it consists of hundreds of audio-video lectures from different disciplines of MIT. An advantage of this website is that students can find several audio-video lectures of their interest. All lectures are filmed in real classrooms and they are quite up-to-date [Figure 10](#).



Figure-10. Main page of MIT Open Courseware offers free lecture notes and videos from MIT.
Source: <https://ocw.mit.edu/index.htm>.

All videos last about 30-50 minutes and introduce research participants, course objectives, course readings and requirements, and assignments. Interestingly, contrary to AcademicEarth.org website, this website allows participants to download transcripts and other handouts and/or materials.

3. Facebook for Teacher-Student Communication

Facebook text messages and voice/ video chats are often used by online PLE learners in a context where traditional learning is seen replaced by cooperation, interactivity, mutual benefit and social engagement. PLE learners connected on Facebook go beyond their “friendly ways” and resort to “interest-based interactions” ([Hadley, 2017](#); [Richardson, 2005](#)). Facebook provides opportunity to research participants to connect to peers and adults outside of their physical spaces, connecting with people sharing common passions. In this context, online PLE students can make use of Facebook and learn things that teachers do not teach. Online PLE students on Facebook can engage themselves in self-directed and peer-based learning. They can use Facebook to connect with other learning and social communities and seek advice on solving problems. Facebook is a place where teachers and students can exchange ideas, give feedback, and explore the potential of the learning networked communities. It is a place where idea sharing and learning collaboration takes place ([Cole, 2005](#); [Rice, 2006](#)).

A general picture of a student who uses the PLERN approach can be seen as shown in [Figure 11](#):

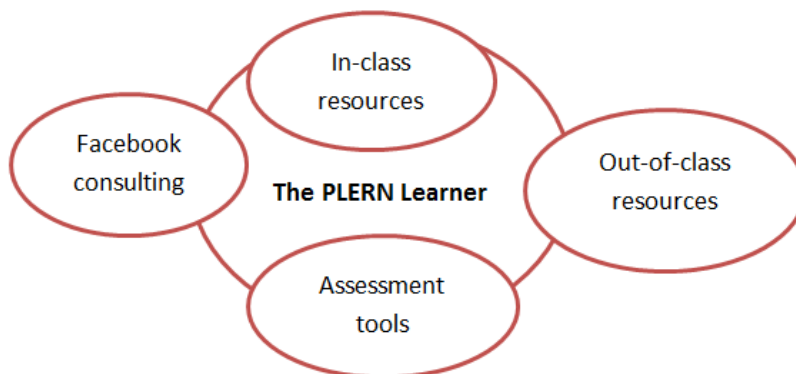


Figure-11. The learner-centered PLERN model.

5. ASSESMENT TOOLS

Table 3 summarizes assessment tools that are recommended to keep track of what and how the research participants use the internal and external resources of the PLERN.

Table-3. Summary of resources used in the PLERN and assessment methods.

In-Class Resources	Textbooks	Assessment by
Out-of-Class Resources	-Textbooks recommended by school	-Term examinations
	-www.ello.org -Self-directed listening websites for self-directed listening practices -Self-check answers	- Interviews - Reflective logs
	-www.englishteststore.net Self-assessment TOEFL /IELTS listening tests	- Self-check answers - Interviews - Reflective logs
	Authentic lecture websites: 1. AcademicEarth.org 2. MIT Open Courseware	1. Reflective logs 2. Content analysis
Support Unit	-Facebook (text, voice or video consulting)	- Content analysis

5.1. Strengths of the PLERN Model

- Learners can determine their own learning environments to implement their autonomous apprenticeship (Syed Khuzzan, Goulding, & Underwood, 2008).
- The PLERN stimulates autonomous apprenticeship for learners (Godwin-Jones, 2011).
- Learners can use authentic resources, build collaborative links over which they can control and create environments of meaningful L2 use. They will have more opportunities and more power to make their own learning decisions and give teachers and learning communities their voice (Godwin-Jones, 2011).
- Personalization, selection of tools or resources, or technologies will help students reach their learning goals when constructing PLEs (Ullrich, Shen, & Gillet, 2010).
- Personalization and the use of appropriate technologies are the key factors when introducing learners to PLEs because if students do not find tools or resources provided by their schools useful, students will find their preferred tools or build their own PLEs for their self-regulating learning modes (Conole, De Laat, Dillon, & Darby, 2008).

5.2. Challenges of This Online Learning Model

- Need a stable learning platform to construct this online learning model.
- Carefully selecting suitable resources for targeted students and recommended resources should be available online anytime for ready use.
- Social and community learning network should include active and helpful members who are there ready to

give help/support to students encountering difficulties in their study as well as providing appropriate resources for students' self-paced study mode.

- If students are uncertain of how to select and use appropriate relevant technologies to achieve their learning goals, an effective PLE would not occur. Clearly, a PLE is more than just technology. Teachers or educators then should help students see the values of a PLE. A PLE helps connect people, tools, and resources. A PLE helps students learn competent self-regulatory skills to effectively use the resources provided and to navigate other resources outside the PLE model to satisfy their own learning needs (Tu, Sujo-Montes, Yen, Chan, & Blocher, 2012).

6. CONCLUSION

This paper has described principles, theoretical and intellectual framework for a suggested online PLE model. It presents a research methodology that best suits the PLERN model. Participants, research instruments, data collection and data analysis have also been discussed. Online PLE resources have been described in depth. Accuracy of data interpretation in both qualitative and quantitative data for practical research has also been emphasized. The design of this model can assist researchers and educators with ideas for planning similar research projects. This PLERN model is a contribution to questions raised by Picciano (2017) and several other scholars and educators who felt the need to construct an online PLE model for students as an integrated and “subset of learning” (Picciano, 2017). It is hoped that online learning courses and programs will be constructed based on the basic concepts of this concrete, integrated online learning model.

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