

# **EFL Learners' Stance towards Technology-Enhanced Personalized Language Learning (TEPLL) for Developing Productive Skills: A Self-Determination Theory Perspective**

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## **Abstract**

This study was intended to explore the Iranian EFL learners' stance towards Technology-Enhanced Personalized Language Learning (TEPLL) and how it influences language development. Specifically, this study investigated the relationships among learners' stances towards TEPLL, relating to effectiveness, integration into daily life, autonomy, engagement, and satisfaction, with L2 speaking and writing motivation. It also examined how learners' stances to the instruction of TEPLL were related to their progress in developing productive skills both in speaking and writing. In addition, instructional facets promoting and inhibiting learners' progress were highlighted. With 120 EFL Iranian learners from five language institutes in Isfahan, Iran, the present project assigned participants to experimental and control groups with 60 persons each, according to the proficiency levels: pre-intermediate, intermediate, and advanced. Data were collected via a Learning Experience Questionnaire and semi-structured interviews. The experimental group received instruction in TEPLL through Speechling for speaking practice and through Moodle for writing practice. The results generally indicated a positive stance towards TEPLL; the learners reported high scores regarding perceived effectiveness, ease of integration, autonomy, engagement, and satisfaction. They also demonstrated more motivation concerning the development of L2 speaking and writing. On the other hand, it established the challenges of technical problems, inadequate content, and poor preparation. Interviews with students showed that TEPLL is an excellent tool for practicing speaking and pronunciation but also brought to the surface the demand for better audio-visual quality, more content volume, and individual support. The findings suggest that while potentially very effective in bettering the language learning of Iranian EFL learners, TEPLL has to be administered with caution, and its administration kept under constant review to reduce the potential challenges.

**Keywords:** Self-determination Theory (SDT), Stance, Technology-Enhanced Personalized Language Learning (TEPLL)

## Introduction

Information and Communication Technologies are powerful tools that can be used to enhance teaching and learning in an EFL context (Mishra & Koehler, 2006). The incorporation of technology is more than just equipping a classroom with computers; innovative approaches have to be employed to engage students for better learning outcomes (Morgan, 2008). Research has brought to light the potential of ICTs to bolster student engagement, motivation, and learning (Mayora, 2006, as cited in Ilter, 2009; O'Dwyer et al., 2005). Ilter (2009) places technology among the factors that has the potential to bring out students' positive stance positively in the teaching-learning process.”

The impact of the rapid changes in technology has induced a change in educational practice, with an increasing focus on personalized learning (PL) and technology-enhanced learning (Stickler & Shi, 2019). This shift has caused researchers to set about exploring the influence of technology on language learning in more ecological and nuanced ways (Stickler & Shi, 2019). However, the successful inclusion of technology calls for careful consideration of the requirements and approvals of both teachers and students (UNESCO, 1998; Khan et al., 2016).

While technology provides enormous opportunities to bolster EFL instruction, its effective incorporation is based on an understanding of students' stances toward technology-enhanced learning (Pelgrum, 2001). Research has accentuated the significance of students' stance for technology adoption and its effectiveness (Pelgrum, 2001). Their views are affected by variables interacting with each other, such as motivation to use, instructional techniques, computer competence, and culturally motivated stance of ICT (Liton, 2015).

Traditional EFL education in Iran seems to be performed with a lot of teacher-centeredness, where the parents normally rely on the classroom for their children's language acquisition (Farmawati, 2016). Teachers are expected to be the main source of information and pass on their language skills in a compressed time-space of about five hours weekly, which, in essence, extends to three sessions (Farmawati, 2016). It is this teacher-centric approach that more often than not is regarded as the guarantee for quality learning, where the educators might be taken as experts in all aspects of the learning process, from knowledge acquisition to student motivation (Bärenfänger, 2005).

An educational paradigm shift towards TEPLL in Iran challenges traditionally bound teaching methods and calls for an understanding of how such changes meet learners' psychological needs, as represented by Self-Determination Theory (SDT). STD developed by Deci and Ryan (2000), stipulates that human motivation is driven by three innate psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2000).

Autonomy is the desire to self-regulate one's experiences and actions. It is further supported by the possibility of self-paced and PL pathways within PLL, wherein learners are able to self-select content and pace in accord with their interests and proficiency levels—the most important factors in building intrinsic motivation (Reeve, 2002). Hence, in the Iranian context, traditionally teacher-centered education and a balance between cultural sensitivity and the promotion of self-direction need to be managed with care in shifting to autonomous learning.

Competence means one is effective in relating to the immediate social environment and capable of exercising or expressing one's capacities. Adaptive technology makes it possible for PLL to offer immediate feedback and tailored challenges that make learners feel competent by making progress (Niemi & Ryan, 2009). The mixed reactions from Jalili's (2023) study on flipped learning in Iran point to a gap where some learners reported they did not buy into flipped

learning due to a lack of familiarity with self-study methods and insufficient support structures to build up competence in a new learning environment.

Relatedness represents the need “to feel connected, to be a member of a group, to care for and be cared for by others.” In PLL, developing relatedness can be accomplished through collaborative tools and platforms that encourage interaction among learners themselves and between them and instructors. This could be especially true in cultures like those throughout much of Asia, where learning is traditionally seen as a group rather than an individual enterprise (Hofstede, 2001).

In this respect, research into the cultural context of PLL implementation is mainlined in Iran. Valuable insights from other contexts notwithstanding, the Iranian societal context represents distinct challenges and opportunities. Having acknowledged the student as the cornerstone of any school-going system, research at the localized level becomes imperative to understand the exact challenges and needs (Forschungsgemeinschaft, 2000).

Motivated by Kia Heirati and Ahmadi Alashti’s (2015) assertion that stances adopted by students when being met with a new teaching practice can either positively or negatively affect learning outcomes, this study became an intent to explore how learners’ stances of TEPLL differ with regard to effectiveness, integration into daily life, autonomy, engagement, and satisfaction and how they relate to their motivation in L2 speaking and writing. Moreover, this study examined how the stance of Iranian EFL learners toward the TEPLL instruction influences developing their productive skills and variables in this instruction that learners recognize as promoting or impeding this development. It is important to know the stances of the students regarding the development of a planned learning program at the higher education level in Iran.

### **Literature Review**

Technology and education have gone hand in hand for several decades, but language learning in the classroom is always evolving over time. Even then, the history of Technology-Enhanced Language Learning can be traced back to its early days of its invention and subsequent development in the 19th century, especially the language labs utilizing phonograph machines for the purposes of listening and speaking practice (Richards & Rodgers, 2014). It was not until the middle of the 20th century, though, that major breakthroughs in audiovisual technology finally created real possibilities for more interactive language learning experiences to happen, with the advent of tape recorders and video players (Warschauer, 1996). These very early innovations began laying the ground for the transformative impact of computers on language learning. The emergence of TELL came only with the second half of the 20th century and the emergence of computers. In the 1960s and 1970s, CALL programs began to proliferate; giving learners badly needed chances for self-paced instruction and practice (Levy, 1997). Initially, applications of CALL seemed to be quite focused; they usually aimed at drill-and-practice exercises and vocabulary learning underpinned by the behaviorist views of language acquisition (Chapelle, 2001). This focus on structured exercises and controlled learning environments would later evolve to embrace more communicative and learner-centered approaches.

The introduction of the Internet in 1990s, which did really revitalize TELL with respect to global connectivity and huge resource access. The language learner received from the World Wide Web authentic materials, communities, and communication tools that helped support real communication and cultural exchange (Warschauer & Meskill, 2013). The development of multimedia and interactive multimedia language learning software also provided more immersion possibilities for TELL learners to engage with authentic language input in several

modalities (Blake, 2013). This move toward authentic language use and immersive experience set the scene for the next major step in the evolution of TELL: mobile-assisted language learning.

At the beginning of the 21st century, the high diffusion rate of mobile devices deepened and enlarged the coverage of TELL. A subcategory, MALL, has evolved from TELL, relying on the pervasiveness of smartphones and tablets in taking anywhere, anytime language learning to the next level (Kukulska-Hulme & Shield, 2008). The learners' on-the-move access to resources in the target language was enabled through mobile applications, podcasts, and social media, offering possibilities for informal learning (Stockwell, 2010). Due to the fact that it is continuously evolving, influenced by the development of technology and pedagogical approaches, TELL paid more attention to personalization and the meeting of personal needs in learning.

In contrast to cohort-based learning, recent innovations in curriculum design and pedagogies bring out the value and efficiency of individual-based learning. One of the categories of precision education is PL. Both of them facilitate timely identification of at-risk students and the provision of support in a timely fashion. They also use individual attributes in selecting the solution for meeting the needs of individual learners (Lu et al., 2018; Yang, 2019).

Precision education is the broad application of individualized learning strategies; more specifically, one utilizing learning analytics and adaptive learning software has been applied to a variety of courses and educational settings with good results claimed. ELaC was introduced by Chrysafiadi and Virvou (2013), and It provided PL resources, considering the background, aptitudes, and rate of learning of every student. In that way, by offering individual content and pace of learning, ELaC fostered learning and raised the efficiency of adaptability in the educational process. PLL plays a very vital role in the teaching of correct language. It heralds a new way of dealing with individual differences by triggering particular interventions designed to target and respond to each person's specific language learning problems (Lian & Sangarun, 2017).

According to Lian and Sangarun (2017), personalization is the step in establishing what the needs of learners are and finding the personalized solution that will answer those needs. Therefore, precision education is "the ultimate goal," while personalization is "a subset of it" (p. 6). In other words, PLL is an important means of language teaching with precision. According to the US Department of Education (2017), PLL is instruction that best accommodates the interest and needs of each language learner through adjustments in pace, approaches, objectives, materials, and activities in the lesson.

Substantial advances in adaptive learning technologies and analytical gains can help the concretization of truly personalized teaching and learning. PLL is the leading focus in the educational technology industry, and merging with it comes a new challenge for applications of AI and machine learning because an ever-increasing need characterizes individualizing the learning processes of the learners who face exponential linguistic and cultural demands in a democratizing and globalizing world (Ortikov & Ugli, 2024).

The affordability of PLLs has been pointed out. Wu et al. (2014) proposed an RFID-based ubiquitous personalized English reading system. Through location analysis, the system recommended English articles with realistic settings to learners. The technology identified precisely the student's location and provided English articles related to the situation for the learner to read and assimilate. The English content was easier to understand since it considered the local context in which situational and individual learning is facilitated. Fang et al. (2018) contributed a content-based method of suggesting individualized grammar questions with a parse-key tree that can recognize the grammatical structure together with the usage of grammar

questions. Considering the conceptual and textual content of grammar questions, recommended approach was successful in suggesting grammar questions. Noteworthy, the efficiency of technological tools and TELL goes beyond mere advancements in technology; it also greatly depends on the understanding of learners' underlying motivations. Such an understanding will lead to the design and implementation of successful PLL programs. SDT offers a firm theoretical foothold for investigating the role of motivation in language learning. First proposed by Ryan and Deci back in 2000, over the past two decades, SDT has developed into one of the foremost theories of motivation pertaining to educational settings. Based on SDT, basic psychological needs like autonomy, competence, and relatedness are essential for human well-being and growth in social contexts (Ryan & Deci, 2000, 2017).

These three basic needs are not just subjective values; their deprivation and satisfaction have meaningful functional effects and consequences for learners' motivation and engagement (Ryan & Deci, 2017). As one of the most important theories of motivation, SDT is largely applicable in a practical sense, in the analysis of the quality of educational contexts and their relation to academic performance, since motivation is a requirement for attaining academic achievement. SDT differentiates motivation into autonomous and controlled types, hence giving insights into how best teachers can effectively foster learner motivation (Noels et al., 2019). Autonomous motivation by itself, characterized by self-determination and interest, results in deeper and more meaningful learning compared with that emerging from controlled motivation, which is often driven by external pressure and often leads to unfavorable outcomes like dropouts and interest in learning (Ryan & Deci, 2017).

SDT application has been instrumental in understanding the different factors that govern motivation and stance in foreign language learning. This is because the theory underlines the learners' stance towards autonomy, competence, and relatedness as the major determining factors of intrinsic motivation and positive learning experiences. It thus laid a solid theoretical basis for the current study into these variables under investigation: effectiveness, integration into daily life, autonomy, engagement, and satisfaction, all of which are very intricately linked to self-determination (Hajmohammadi & Aghayani, 2022).

Recent research has examined the effectiveness of TELL, and personalized language learning (PLL) and its impact on learners' stances, motivation, and proficiency. An example is a study aimed at comparing the stances that Iranian English teachers and learners had towards using the internet for language learning conducted by Heirati and Alashti (2015). Their study indicated that the level of the learners' positive stance towards using the internet for learning languages was high and that there was no significant difference regarding both genders. Webb and Doman (2019) examined the self-reported stances of tertiary-level learners in the use of technology for language learning in the differentiated flipped classroom. Their sample was taken from the USA, Macau, and Colombia. Their study showed that the use of the flipped classroom model added a positive contribution to student stances toward technology for language learning, especially in the USA, where there were statistically significant differences in all self-reported stances across time.

A study by Al-Badi et al. (2022) investigated the stances of learners and instructors on artificial intelligence (AI) in the setting of PL at higher education institutions in Oman. The results showed that learners and instructors bought into the use of AI use in PL. Leshchenko et al. (2023) discovered that students approved of TEPLL, demonstrating their aptitude for individualized learning and stance.

These studies insinuate that technology-enhanced language learning is something already accepted, positively attitudinally charged, and therefore further beneficial to learners and instructors. Future research will bring to light the subtle nuances that exist in this stance, based on the use of specific technologies, pedagogical approaches, and cultural contexts.

Finally, PLL in Iranian context has been under-researched. This therefore creates the need to further research Iranian EFL learners' experiences and views about PLL. On the other hand, a huge body of research supports the effectiveness of PLL in increasing language learning with respect to motivation and proficiency. Specifically, the approach of the study was planned to contribute to this growing body of knowledge by investigating Iranian EFL learners' stance on TEPLL and its impact on productive skills through an SDT perspective. In so doing, the following research questions were drawn up to act as the roadmap in this study:

***RQ1.** To what extent do Iranian EFL learners' stance towards Technology-Enhanced Personalized Language Learning (TEPLL) differ in terms of effectiveness, integration into daily life, autonomy, engagement, and satisfaction?*

***RQ2.** How does this stance relate to their motivation in L2 speaking and writing?*

***RQ3.** How do Iranian EFL learners' stance towards TEPLL instruction influence their development of productive skills (speaking and writing)?*

***RQ4.** Which specific aspects of instruction do they identify as facilitating or hindering this development?*

## **Method**

### **Participants of the Study**

The present study had 170 Iranian EFL learners who participated at five language institutes in Isfahan, Iran. These students were spread over three proficiency levels: pre-intermediate, intermediate, and advanced. From the larger population, 120 learners were selected via a placement test, and then the sample size was composed of two groups: an experimental and a control group of 60 each.

This study made use of convenience sampling in order to ensure the recruitment procedure was workable and feasible. Samples used for this research were Iranian EFL learners whose first language was Persian too, which also made a homogenous linguistic context for carrying out the research. At each level, there were 20 individuals whereby each level comprised of adolescents and adults in equal proportions. It was done to ensure participation across the ages of 11–35, thus providing a very wide range of different learner experiences and different stages of life. Besides, the classes had mixed genders of learners.

Such a sampling strategy helped to include at each level the heterogeneity of Iranian EFL learners, thus increasing the external validity of the results. Besides, convenience sampling provided convenience in the process of recruitment and thus a more practical and efficient way to collect data from a high sample size.

### **Instruments**

#### ***Learning Experience Questionnaire (LEQ)***

The 24-item LEQ, adapted from Adhami and Taghizadeh (2022), was used to answer the first research question. It aimed to elicit information about the participants' stance toward different factors that influence their stance in the learning experience. The scale has six categories, each of four items, designed to enable a deep understanding of the participants' experiences in learning a language.

The first category assesses the stance of the participants on the effectiveness and utility of TEPLL with regard to enhancing their productive language skills. The second category deals with the extent to which participants include the approach of TEPLL in everyday activities and routines. The third category relates to participants' sense of independence or control over the process of learning languages with the help of the TEPLL method. The fourth category evaluates the interest, involvement, and motivation of participants while learning with the help of the approach of TEPLL. The fifth category delves into participants' overall satisfaction with the language learning experience and outcomes they have experienced with the use of the TEPLL. Finally, the sixth category examines the motivation and drive that participants express for engaging in learning activities of L2 with the help of the TEPLL approach.

The research tool translated into Persian was pilot-tested before its application. That is, experts' views were obtained as a step in the validation process in order to disambiguate items' wordings. Moreover, after administering the validated scales to a sample of 20 participants with similar characteristics but enrolled in another English language institute, the reliability coefficient was computed and found to be .79, indicating acceptable reliability.

### ***Semi-Structured Interview***

Semi-structured interviews were conducted to answer the second research question. Fifteen students were chosen from the experimental groups for the interviews: five students from each proficiency level. The interview questions were developed by the researcher based on the review of related literature and aimed to investigate Iranian EFL learners' stances toward technology-based PLL. Validity and reliability of the interview questions were garnered through making three experts in applied linguistics and educational sciences ask assess the instrument after drafting the questions and let five EFL teachers rate the wording and the content of the questions. The same experts and EFL teachers rated the wording and content of the interview questions. Comments coming from the experts and teachers necessitated revisions of interview questions. Some questions were rephrased based on made suggestions. The interview list included 10 main questions, with other sub-questions added as a supplement to delve more deeply into the sentiments and experiences of the subjects during the interviews.

### **Data Collection Procedure**

Prior to conducting the main study, interpreters filled pretest questionnaires to determine the validity and reliability of the instruments used. A sample of 20 interpreters from a number of English learning institutes was used to fill the instruments since Isaac and Michael suggest that a sample size of between 10 and 30 is usually reliable.

The OQPT was administered to a pool of 170 Iranian EFL students as a pre-requirement in the process of selecting a homogenous group of participants based on language proficiency. From this population, 120 students whose scores ranged from 50 to 60 were selected and randomly assigned to the experimental group ( $n = 60$ ) and to the control group ( $n = 60$ ). The experimental group was further divided with respect to age, gender, and L2 proficiency. Pretests for speaking and writing abilities were conducted before the treatment that included weekly instruction for four weeks.

The TEPLL approach was used for the experimental group using Speechling to provide out-of-class speaking practice. The following procedures were implemented:

1. An orientation to the use of Speechling and its features for the participants.
2. Based on the proficiency levels and learning goals, individualized lesson plans were made with an addition of other resources such as YouTube and Instagram videos.

3. Speaking exercises were set using Speechling based on lesson plans, which matched series of the American English File.
4. Recorded speaking exercises were consistently played back, and individual pronunciation, vocabulary, and fluency feedback was provided.
5. Further support was offered to address the queries of the learners as well as to enhance the learners' experience.
6. The progress of learners was kept monitored continuously for making changes in the lessons if needed.

For out-of-class individual writing instruction, Moodle was utilised which involved the following steps:

1. A course page assigned to L2 writing activities was created.
2. Learners created their profiles mentioning their proficiency and writing goals.
3. Assignments were designed based on specific needs and target current writing skills.
4. Given the learners felt difficulty, relevant writing prompts were provided to assist learners.
5. Writing Tools: The tools in Moodle were made to use in collaborative writing activities.
6. The peer review activities engaged learners and built up the range of writing skills.
7. Personalized feedback on different writing submissions was provided.
8. Progress of learners is tracked and use it to adjust instructional strategies as needed.
9. Learners maintained journals or portfolios to keep a record of their development.
10. Resources were provided to learners so that they could help themselves write.

In the case of the control group, the topics were also pre-selected but were handed down to the learners without the individualized setting. The teaching too, adopted a conventional method. The teacher, again, chose the topics, addressed on them in class at her convenience and recorded receiving feedback on speaking as well as writing tasks by the learners. This occurred in two sessions a week. One week after the treatment, 60 students of the experimental group were administered the LEQ, and after that, 15 individuals among them were interviewed in person for 20 minutes each.

### **Data Analysis Procedure**

In this study, the data analysis is approached using a dual method composed of the quantitative and qualitative techniques. Data, quantitatively, were analyzed by the help of the inferential and descriptive statistics. Descriptive statistics were computed by their means, standard deviations, and reliability measures; standard error of the mean for testing the normality of the distribution. Skewness ratio was carried out before making any inference in statistics, in order to test for normality. Inferential statistical tests were then performed on the results obtained from the questionnaires.

On the qualitative side, data generated from the interviews were thematically analyzed using grounded theory with the support of software called NVIVO. First, the transcribed data had to be coded and categorized. After this, axial coding had to be done to identify and sort out emerging themes and subthemes. Finally, selective coding helped in grouping identified categories into larger themes. This multi-step process helped to go through the qualitative data thoroughly and systematically.



## Results

The treatment phases began after the homogeneity was ensured and then the participants were provided with the LEQ in order to complete them. Further investigation of the normality of these distributions was done by using Kolmogorov-Smirnov test. The results are presented in Table 1.

**Table 1**  
*Tests of Normality*

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
LEQ	0.083	59	0.53	0.97	59	0.051

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Table 1 shows that the statistical tests for normality (p-values) for LEQ is greater than 0.05. This suggests the data follows a normal distribution, which is an assumption for some statistical methods.

### Results for the Research Question One

First research question explored the differences between Iranian EFL learners' stance toward TEPLL about its effectiveness, applicability in their life, being self-directed, engaging, and satisfying. The responses indicate that most participants expressed a positive stance toward the critical dimensions of their experience in the TEPLL course. Using the Persian version of the research tool, translated for the pilot study, reliability came to 0.70. The results of the LEQ analysis are illustrated as follows.

**Table 2**  
*Learner Stance on Perceived Effectiveness of TEPLL*

Statement	SD	D	N	A	SA	SD.	M.
The technology-enhanced personalized language learning approach has enhanced my productive language skills.	6	14	10	16	14	0.41	3.30
I find the technology-enhanced personalized language learning approach useful for improving my language abilities.	2	16	8	24	10	0.42	3.40
I believe the technology-enhanced personalized language learning approach is effective in helping me learn languages.	10	12	6	20	12	0.40	3.20
The technology-enhanced personalized language learning approach has been beneficial for my language learning.	6	18	14	12	20	0.47	3.87
Total	24	60	38	72	56		

Table 2 shows the responses of the survey questioning participants about their opinions on whether a TEPLL approach is effective. It can be noted in the table below that the majority of

participants posted positive stances toward the TEPLL approach, with higher frequencies in the categories “Agree” and “Strongly Agree” across all statements. The ‘Statements’ mean scores ranged from 3:20 to 3:87 on the Likert scale, indicating that the general trend in stance was positive towards the TEPLL approach. SD values vary from 0:40 to 0:47, indicating a fair dispersion around the mean because of differences among individual responders.

**Table 3**

*Learner Stance on Integration of TEPLL into Daily Life*

Statement	SD	D	N	A	SA	SD.	M.
Integrating the technology-enhanced personalized language learning approach into my daily routine is easy.	8	8	8	20	16	0.43	3.47
I find it convenient to use the technology-enhanced personalized language learning approach in my daily activities.	4	14	12	18	12	0.42	3.33
Using the technology-enhanced personalized language learning approach fits well with my daily schedule.	6	14	10	12	18	0.42	3.37
I often use the technology-enhanced personalized language learning approach as part of my everyday routine.	2	12	10	20	16	0.42	3.60
Total	20	48	40	70	62		

Table 3 shows the stances of participants toward including the TEPLL approach in daily life. Again, in this case, most of the participants demonstrated positive stances toward integrating the TEPLL approach into their daily routines, since the “Agree” and “Strongly Agree” categories indicate higher frequencies for all the statements. Statements average between 3:33 and 3:60 on the Likert scale, indicating a generally positive overall ease of integration stance. The standard deviation numbers range from 0:42 to 0:43, showing a medium level of dispersion of the response answers for the various subjects.

**Table 4**

*Learner Stance on Autonomy and Self-Directed Learning in TEPLL*

Statement	SD	D	N	A	SA	SD.	M.
I feel in control of my language learning using the technology-enhanced personalized approach.	6	8	8	18	20	0.45	3.63
The technology-enhanced personalized approach allows me to learn languages independently.	6	10	10	6	28	0.45	3.67
I can pace my learning according to my preferences with the technology-enhanced personalized approach.	2	12	10	16	20	0.45	3.67

Using the technology-enhanced personalized approach has increased my independence in learning languages.	4	14	6	20	16	0.43	3.50
Total	18	44	34	60	84		

Table 4 presents respondents' stance toward autonomy and self-directed learning regarding the TEPLL approach. As indicated in the table by higher frequencies for every statement, majority of the respondents agreed to having positive stances on autonomy and self-directed learning in the TEPLL approach. Statements 1-7: the mean is between 3.50 and 3.67, on a Likert scale of 1 to 4, which makes for high-perceived autonomy and self-directed learning; and b. The values of SD range from 0.43 to 0.45, which are a bit high for the distribution of responses under study.

### Results for the Research Question Two

Second research question delved into the relationship between Iranian EFL learners' stance towards TEPLL and their motivation and engagement in L2 speaking and writing. The results obtained from the LEQ section relevant to this research question are analyzed and illustrated as follows.

**Table 5**  
*Learner Stance on Engagement and Motivation in TEPLL*

Statement	SD	D	N	A	SA	SD.	M.
I am interested in using the technology-enhanced personalized language learning approach.	4	12	10	18	16	0.43	3.50
I am actively involved when using the technology-enhanced personalized language learning approach.	2	16	6	20	16	0.44	3.53
The technology-enhanced personalized language learning approach motivates me to learn languages.	6	8	12	14	20	0.44	3.57
I look forward to using the technology-enhanced personalized language learning approach.	4	10	8	16	22	0.45	3.70
Total	16	46	36	68	74		

Table 5 shows the stance of participants regarding engagement and motivation in the TEPLL approach. Majorities of participating respondents represented positive stances towards engagement and motivation within the TEPLL approach, evidenced by high frequencies found in "Agree" and "Strongly Agree" categories for all statements. Mean scores for the statements all stay within the 3.50 to 3.70 range of the Likert scale, indicating that there is indeed a strong feeling of engagement and motivation perceived by the respondents. The SD values were all within the 0.43 to 0.45 range, reflecting some amount of variation in responses.

### Table 6

*Learner Satisfaction with Learning Experience and Outcomes in TEPLL*

Statement	SD	D	N	A	SA	SD.	M.
I am satisfied with my language learning experience using the technology-enhanced personalized approach.	2	12	10	18	18	0.45	3.63
The outcomes achieved through the technology-enhanced personalized approach meet my expectations.	6	14	6	20	14	0.42	3.37
I am happy with the results of using the technology-enhanced personalized approach.	4	8	12	16	20	0.45	3.67
I would recommend the technology-enhanced personalized approach to others based on my experience.	2	16	10	14	18	0.43	3.50
Total	14	50	38	68	70		

Table 6 shows the satisfaction of participants with learning experience and learning outcome within the TEPLL approach. From Table 6, it can be seen that a majority of participants are satisfied with the learning experience and learning outcome since the frequency for “Agree” and “Strongly Agree” is higher in all the statements. All statement mean scores were above 3.37 and below 3.67 on a Likert scale, showing very high satisfaction overall. These standard deviations range from 0.42 to 0.45, indicating that the dispersion of the answer choices selected by the respondents is only moderate.

**Table 7**

*Learner Motivation for L2 Speaking and Writing in TEPLL*

Statement	SD	D	N	A	SA	SD.	M.
The technology-enhanced personalized approach motivates me to practice speaking in English.	6	10	8	18	18	0.44	3.53
I feel encouraged to write in English because of the technology-enhanced personalized approach.	4	12	6	20	18	0.44	3.60
Using the technology-enhanced personalized approach has increased my desire to improve my speaking skills in English.	2	14	8	18	18	0.44	3.60
I am motivated to engage in writing tasks in English due to the technology-enhanced personalized approach.	6	8	10	16	20	0.44	3.60
Total	18	44	32	72	74		

Table 7 shows the stance of the participants towards motivation in L2 speaking and writing through the technology-enhanced personalized PLL approach. More participants showed positive stances towards speaking and writing motivation within the TEPLL approach, depicted by greater frequencies within the “Agree” and “Strongly Agree” classes for all statements. All mean scores for all statements lie between 3.50 and 3.60, indicating a high level of stance of motivation. SD values of around 0.43 and 0.44 indicate a reasonable amount of variation from one response to another among the participants.

The mean score of 3.53, when collating the 24 items, conveys a general positive stance by the respondents. Because of the dynamism in the Likert scale used, from 1-5, scores above 3 were positive, hence obviously reflecting a high degree of endorsement of TEPLL by the participants. Suggest that the approach has had some positive influence over their experiences in language learning. One more one-sample t-test was conducted to further assert the significance of these positive stances. Presented hence is another test with the intention of providing further evidence of these respondents’ positive stances toward TEPLL, therefore asserting its potential to be a contributing factor in the effective variable on the language learning process.

**Table 8**

*Descriptive Statistics for Learning Experience Questionnaire*

	<i>N</i>	Mean	<i>SD</i>	<i>SD Error Mean</i>
LEQ	60	3.53	0.42	0.07

Table 8 shows the descriptive statistics for LEQ the number of samples in the analysis was 60 subjects. The average score of 3.53 would probably indicate a somewhat positive disposition to the learning experience, whereas a standard deviation of 0.42 means that at least some dispersion in the responses among individuals exists. With a standard error of the mean equal to 0.07, there is some plausible reason to believe this sample mean is a reasonable estimate of the true mean.

**Table 9**

*One-sample t-test Results for the Learning Experience Questionnaire*

Test Value = 3

95% Confidence Interval of the Difference

	<i>t</i>	<i>df</i>	<i>Sig.</i> (2- tailed)	Mean Difference	Lower	Upper
Questionnaire	11.43	59	.00	0.80	0.70	1.03

Table 9 presents the results of a one-sample t-test that was conducted to compare the average stance score of learners,  $M = 3.53$  regarding TEPLL with a constant value = 3.00. The p-value reported was less than the specified significance level  $.000 < .05$ , thus the difference between the mean score and the constant value is statistically significant. This means that the higher mean

score, which reflects the positive stances expressed by the learners, is statistically significant and not attributed to chance. Therefore, it can be deduced that the learners' approval of using TEPLL for the purpose of English instruction, as reflected in their stance, was statistically significant and substantial.

### **Results for the Research Question Three**

The third research question aimed to explore how Iranian EFL learners' attitudes toward TEPLL instruction influenced their development of productive skills, specifically speaking and writing. An analysis of the students' interviews revealed that most participants held a positive view of using TEPLL in EFL contexts. They noted that it was particularly effective for practicing and enhancing their language abilities, with an emphasis on writing and speaking.

(1)

*Since I don't have other English speakers to practice with, TEPLL helps me improve my speaking and pronunciation skills. That said, I still struggle to actually engage in conversation with it."*

(2)

*"The texts used in TEPLL are helpful and engaging. Sometimes the vocabulary is a challenge, with words that fall in or out of my range, and occasionally I don't grasp the context well enough to join in later discussions."*

This suggests a positive impact on learners' motivation and engagement with the language, potentially influencing their development of productive skills. However, there are also challenges:

(3)

*"TEPLL helps improve overall language proficiency, but it doesn't offer much support for writing or grammar because there isn't enough feedback on my errors. I often get confused about which part of a sentence is wrong."*

This extract points to a perceived gap in support for developing writing skills specifically, highlighting the potential need for improved feedback mechanisms within the TEPLL framework.

### **Results for the Research Question Four**

The fourth research question sought to identify which aspects of TEPLL instruction Iranian EFL learners found helpful or problematic in developing their productive skills. Most learners found TEPLL instructions relatively easy to follow, largely due to their familiarity with technology and online learning. The following extracts exemplify this stance:

(4)

*"I like that I can jump between activities and don't have to follow a set order. If I find something too boring, hard, or easy, I can just move on to something I prefer."*

(5)

*“I appreciate being able to pause and rewind videos. Unlike a live class, I don’t miss anything, and I can review as many times as I need, which makes learning more effective.”*

However, the research also identified potential drawbacks:

(6)

*“I don’t want to waste time on a single question, so if I find one difficult, I move on. I even use the answer key sometimes, though I prefer to figure things out by finding the answer elsewhere.”*

(7)

*“TEPLL is too difficult and time-consuming. I tend to use the keys for answers because I need to complete tasks before the time runs out. I leave once I finish, but since attendance is mandatory, I just wait for the hour to pass to get my grade.”*

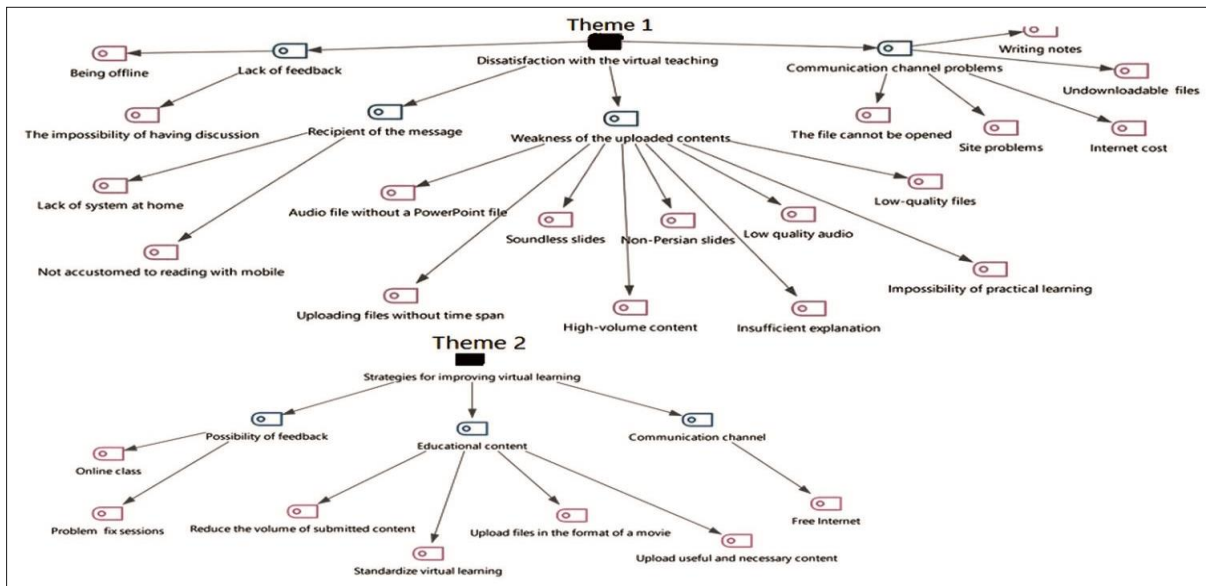
These reflections point to potential drawbacks in task design and the overuse of answer keys, suggesting a need for TEPLL activities to be more appropriately challenging while promoting meaningful learning experiences.

The findings can be categorized into two main themes. The first theme refers to the satisfaction with TEPLL instruction. In this category, the following codes were included: uploading a TEPLL instruction with a PowerPoint file, sound slides, high quality of the sound, Persian slides, attention regarding the quality of the file, high volume of the content, uploading the files without time span, and sufficient descriptions by the instructor. In addition, one of the obtained categories was the feedback over the presented in the course due to the TEPLL instruction, and possibility of discussion with the instructors. As experienced by one of the interviewees, “TEPLL instruction was so good for new and beginner students. Some of us are aware in some of the subjects by utilizing technology applications”. Moreover, some communication problems were also found.

The second category was related to benefiting more from TEPLL instruction. This category comprised the codes relating to the site issues, Internet costs, and download possibility. Additionally, there is a lack of preparedness of the receiver of the message. This category was consisted of the codes relevant to the lack of an in-house computer system and being not accustomed to the study by a cell phone. In the end, the participants proposed some solutions, including providing more online feedback during the course, consolidating internet infrastructure in educational centers, customizing the internet facilities to the teachers as well as the learners, providing the appropriate communication channels, etc. Based on the results of the Nvivo software, Figure 1 illustrates the themes, categories, and codes.

### **Figure 1**

*Themes, Categories, and Codes of the Interviews*



Taken together, the outcome of the interviews put together revealed that the students felt that TEPLL had assisted them in the development of speaking and pronunciation aspects; they liked the ease of materials and interactive engaging elements in the lesson modules. Students were challenged by technical problems, less challenging content, lack of preparation, and all this hindered the process of their learning. Students recommended improvements in audio-visual quality, volume of content, and personalized support.

### Discussion

This study focused on learners' stance toward TEPLL in terms of effectiveness, integration into daily life, autonomy, engagement, and satisfaction. The current researchers also intended to explore the association between students' stance towards the TEPLL and L2 speaking and writing motivation. In addition, the present paper aimed at measuring how Iranian EFL learners' stance to the TEPLL instruction would affect the development of their productive skills, and what specific aspects of the TEPLL instruction they mentioned as facilitative or hindering in that development. The more general findings were that EFL learners of both types had a positive overall stance toward the TEPLL instruction in general.

The learners saw the TEPLL approach as highly effective and very economical in terms of benefits derived. The learners also saw the TEPLL approach as very easily integrated into a daily routine, again confirming the user-friendliness of the technology itself, as well as corresponding to many different types of lifestyles. Conversely, the learners expressed a high level of perceived autonomy and control over what was being learned, meaning that the TEPLL learning environment was empowering; therefore, they owned the learning experience. This perceived autonomy manifested in the TEPLL environment to have led to a high level of engagement and interest in the learning process. Generally, they expressed a very high level of satisfaction regarding the process and outcomes of learning within the TEPLL model. In addition, they stated they were highly motivated to bolster their L2 speaking and writing skills. All these findings suggest that TEPLL was perceived as positive and effective, thus opening potential avenues for the improvement of language learning outcomes in Iranian EFL students.



Furthermore, from the interview responses, it was discovered that the students found TEPLL useful for speaking and pronunciation practice. They also liked the ease of accessibility of the materials and the interactive contents, which was engaging. However, their learning was disrupted by technical problems, a lack of content material, and inadequate preparation. Students suggested improvement in audio-visual quality, volume of content, and support in terms of one-on-one tutoring.

The findings of this study, hence, further adding to the basic tenets of SDT; therefore provide a powerful picture of how TEPLL could work to enhance intrinsic motivation and language learning outcomes for Iranian EFL learners.

These positive stances towards the TEPLL in the areas of perceived effectiveness, integrability, autonomy, engagement, and satisfaction support the deeper theory of SDT. According to Deci and Ryan (1995), when people feel a sense of autonomy, competence, and relatedness, they are by nature motivated to learn and develop. These findings have a direct relationship with the high levels of perceived autonomy reported by the learners in the current study, whereby they expressed having feelings of being empowered to take ownership of their learning journey. Since this sense of autonomy corresponds to the SDT principle of autonomy, which was directly elucidated by Deci and Ryan back in 2000, it fostered high levels of engagement and motivation; learners showed interest in participating in the process of learning, hence the link between autonomy and intrinsic motivation.

In terms of competence, a stance of the effectiveness of TEPLL and its reported ease of integration into daily routines correspond to this principle of SDT. One can see that learners were confident about the possibility of using the technology and applying it to their learning goals, which contributes to a sense of mastery and accomplishment described by Deci and Ryan in 2000. This sense of competence further contributed to fueling the completeness of their motivation to develop their L2 speaking and writing skills.

Interview data explain aspects of the TEPLL that either support or hinder learning, all in general illustration that learners felt good about the ease of access to materials and a number of supportive, engaging, interactive features that did support learning well but did note a number of challenges: technical problems, lack of content, and lack of lack of preparation. The need for a supportive and well-structured TEPLL environment, catering to individual needs and providing adequate amounts of guidance and support, can be clearly derived from these challenges.

Such findings add to the current growing body of research into the effectiveness of TEPLL in enhancing language learning outcomes. All of the studies, without any exception, have demonstrated the effectiveness of PLL and TEPLL from speaking to writing and motivation.

Previous research highlighted the strengths of TELL and PLL. Heirati and Alashti (2015) found that Iranian English teachers and learners had positive stances toward using the internet for language teaching, which did not reveal significant differences between genders. Webb and Doman 2019 demonstrated that a flipped classroom model enhanced the stance of students towards technology in learning language in three countries, significantly in the US. Al-Badi et al. (2022) found that students and instructors in Oman were satisfied with AI for PL, irrespective of gender or Internet speed. Leshchenko et al. (2023) observed that the TEPLL strategies improved skills and views of students. Generally, this current research really reflects this trend for language learning that is accelerating towards the most apparent use of PL, whereby individual approaches are showcased to the learner's processes within which new emerging technologies will enhance learning practices.

## Conclusion

The current study examined Iranian EFL learners' stance and approaches toward TEPLL and how it influenced their level of motivation to develop productive language skills. In particular, it aimed at answering how much and in what ways the learners' stances differed regarding different key areas: perceived effectiveness, ease of integration into daily life, autonomy, engagement, and satisfaction. Moreover, it aimed to test how learners' stances toward TEPLL relate to motivation in L2 speaking and writing. It also sought to determine specific aspects of the TEPLL instruction that learners felt either helped or hindered productive skills development.

The findings, based on SDT, indicate that TEPLL can form an effective way of improving language learning outcomes among Iranian EFL learners. It offers conditions for autonomy, competence, and engagement and hence gives students a likelihood of efficiently developing intrinsic motivation towards language learning, self-directing their process. However, several concerns arose that need to be considered in order to optimize this learning experience.

This present research highly corroborated the need for designing TEPLL programs with respect to Iranian EFL learners' needs and preferences at different proficiency levels. In other words, this includes relevant content, activities, and mechanisms of support for each level. Further, this research put much emphasis on the role of autonomy and engagement in leading to intrinsic motivation. Therefore, future TEPLL programs should engage with aspects of learner autonomy: options, flexibility, and control over the process of learning. Activities engaging interactive elements and personal feedback would further increase interest and motivation.

Technical difficulties and inadequate content are the two major challenges to implementing TEPLL effectively, as the study has detailed. Hence, in the future, there needs to be an emphasis on making sure that there is adequate technical infrastructure, high-quality audio-visual material, and relevant content for various purposes. As well, teachers form an essential part of supporting the implementation of TEPLL. Training programs should seek to equip teachers with the relevant competencies and knowledge about the integration of TEPLL into their teaching practice and facilitation and provision of guidance and support to the learner.

Longitudinal study permit a longer trace of how TEPLL affects learners' motivation, the language proficiency level, and the overall outcome of learning. Focus groups would add more thoroughness to the qualitative aspect of research about learners' experiences regarding TEPLL and allow the emergence of richer data pertaining to stances, motivations, and challenges. It would also be helpful for future research to examine how TEPLL affects other language skills, such as listening and reading. This would determine the strong and weak points of TEPLL in the development of various kinds of competencies.

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## **Biodata**