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Artificial intelligence and foreign language learning: The impact on motivation, anxiety and enjoyment within a positive psychology framework

Mehdi Mehranirad ✉* **0000-0001-6825-2042**
English Department, Faculty of Literature and Humanities, University of Neyshabur, Neyshabur, Iran
Email: mehrani@neyshabur.ac.ir

ABSTRACT
The present study is set out to investigate the impact of using an AI-powered platform on key affective factors such as – anxiety, enjoyment, and motivation – among Iranian EFL learners. Relying on the theoretical framework of positive psychology, the study explores how AI can mediate these variables to enhance speaking proficiency by fostering emotional resilience and learner engagement. A total of sixty-four participants, homogenized in proficiency via the Oxford Placement Test, were randomly assigned to experimental and control groups. Within an education semester spanning three months, the experimental group used an AI-speaking assistant for interactive activities, while the control group followed traditional instruction. Data were gathered using validated scales for foreign language anxiety, enjoyment, and motivation, administered before and after the intervention. Independent samples t-tests showed no significant pre-intervention differences between groups. However, post-intervention one-way ANCOVAs revealed significant differences: the experimental group experienced reduced anxiety, increased enjoyment, and heightened motivation. Paired-sample t-tests confirmed these positive changes in the experimental group, with the control group showing no substantial improvements. These findings point to the transformative potential of AI in language education, addressing emotional and motivational barriers. The study highlights the synergy between positive psychology and AI in creating engaging, supportive learning environments for EFL learners.

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✉* Dr. Mehdi Mehranirad is associate professor of applied linguistics at the University of Neyshabur. His research interests include research-practice nexus in language education, teacher education, and the influence of technology on language education.

1. Introduction

Positive psychology has significantly influenced educational discourse by shifting the focus from deficiencies and problems to the cultivation of strengths, positive emotions, and individual well-being (Seligman & Csikszentmihalyi, 2000). In the field of language education, this framework highlights the vital role of learners' affective and psychological states in shaping engagement and learning outcomes. While traditional approaches have often emphasized the cognitive and linguistic dimensions of language learning, positive psychology advocates for a more holistic perspective. This approach underscores the importance of enhancing joy, curiosity, and resilience, enabling language learners not only to attain linguistic competence but also to experience broader personal and social growth. This shift aligns with Vygotsky's sociocultural principles, which identify emotional interaction and support as fundamental components of cognitive development (Vygotsky, 1978). By integrating these principles, educators can create learning environments that are not only effective but also enriching and enjoyable.

Affective factors such as enjoyment in language learning, foreign language anxiety, and motivation play a central role in shaping learners' experiences and success. For instance, enjoyment fosters a positive emotional climate in the classroom, enhances intrinsic motivation, and contributes to greater academic achievement (Dewaele & MacIntyre, 2014). In contrast, anxiety can significantly undermine learners' self-confidence and performance, especially during speaking activities where fear of evaluation is particularly high (Horwitz et al., 1986). Moreover, motivation – whether integrative or instrumental – is a fundamental pillar of language learning that drives sustained learner efforts to achieve linguistic goals (Dörnyei & Ryan, 2015). Positive psychology integrates these affective dimensions and emphasizes their interaction in fostering a balanced and constructive learning experience. By mitigating anxiety, enhancing enjoyment, and strengthening motivation, educators can create optimal conditions for sustained engagement and learners' personal growth. This integrative approach highlights the necessity of addressing both affective and cognitive dimensions in language education to maximize learners' potential.

The integration of artificial intelligence (AI) in language education presents a unique opportunity to align instructional practices with the principles of positive psychology. AI tools such as personalized learning platforms, gamified applications, and adaptive feedback systems offer innovative solutions to meet learners' individual needs and support their emotional well-being (Lin & Chen, 2024). For example, AI-based chatbots and virtual tutors create low-stress environments for practice, reducing anxiety by eliminating fear of negative judgment (Xiao et al., 2024). Gamified learning applications

maintain learners' intrinsic motivation by incorporating challenges and rewards into goal-oriented tasks. From a research perspective, AI facilitates the analysis of large datasets and offers insights into the interaction between affective factors such as anxiety, motivation, and enjoyment. This technological integration not only enhances language outcomes but also aligns with the broader goals of positive psychology in promoting well-being and personal growth.

To fully harness this synergy, interdisciplinary efforts are required to explore how AI can support learners' emotional needs while simultaneously enhancing their linguistic competence. The design of AI-based programs should emphasize emotional resilience, self-efficacy, and joy in learning to bridge the gap between technological innovations and human-centered pedagogical principles. This intersection between AI and positive psychology offers a pivotal opportunity to transform language education and pave the way for both linguistic competence and holistic development in learning environments.

2. Literature Review

The Role of Emotions in Language Learning: A Shift Toward Positive Psychology

For decades, theories of foreign language learning have predominantly emphasized cognitive processes, often overlooking the emotional dimensions of the learning experience. Cognitive frameworks have focused on working memory, problem-solving, and information processing, sidelining the affective factors that significantly impact learner engagement and outcomes (Dörnyei, 2005). However, the emergence of positive psychology has shifted this paradigm, placing affective variables such as enjoyment, anxiety, and motivation at the forefront of language education research. Studies have shown that positive emotions reduce stress, expand learners' cognitive resources, and enhance intrinsic motivation – creating optimal psychological conditions for language learning (MacIntyre et al., 2003). This shift underscores the interplay between emotional and cognitive processes, paving the way for a more comprehensive understanding of second language acquisition.

Positive psychology's focus on well-being and human strengths provides a transformative framework for enhancing engagement and resilience in language learning. Rather than concentrating on deficits, this approach proposes strategies for cultivating positive emotions and leveraging learners' strengths (Mercer & Dörnyei, 2020). For example, fostering a growth mindset, celebrating small achievements, and creating supportive classroom environments help learners feel valued and motivated (Oxford, 2015). Interventions such as mindfulness practices also reduce stress and improve learners' emotional well-being, thereby creating favorable conditions for effective language learning. This strengths-based shift aligns with broader educational goals that aim to

foster both academic success and personal development.

Foreign Language Anxiety

Foreign language anxiety is a well-documented barrier to learner success, particularly in speaking tasks where fear of negative evaluation and feelings of linguistic inadequacy peak (Horwitz et al., 1986). Krashen's (1982) Affective Filter Hypothesis explains how high anxiety creates an "emotional filter" that obstructs language acquisition by interfering with essential cognitive processes. This interference is especially detrimental to speaking, as anxiety disrupts vocabulary retrieval, syntactic organization, and speech fluency, resulting in hesitation and reduced communicative effectiveness.

Empirical research consistently demonstrates the negative impact of anxiety on learners' speaking performance. For example, studies have shown that higher levels of anxiety are associated with decreased fluency, increased errors, and avoidance behaviors (MacIntyre & Gardner, 1994; Liu & Jackson, 2008). Additionally, research indicates that learners who experience physical symptoms of anxiety – such as sweating or rapid heartbeat – during language tasks face greater difficulties expressing their thoughts in a second language (Young, 1991). However, contextual factors such as supportive classroom environments and positive teacher-student relationships can mitigate these effects and foster psychological safety (Dewaele et al., 2018). These findings highlight the importance of addressing language learning anxiety in pedagogical practices to enhance learners' speaking performance and overall communicative competence.

Enjoyment in Language Learning

Enjoyment in language learning is a central concept in positive psychology that emphasizes the role of positive emotions in facilitating the learning process. According to Fredrickson's (2001) broaden-and-build theory, enjoyment is an emotion that broadens learners' cognitive and behavioral repertoires, fostering creativity, risk-taking, and openness. In speaking tasks, enjoyment reduces learners' fear of making mistakes and encourages greater participation in authentic communication. Empirical studies confirm that learners who experience high levels of enjoyment demonstrate greater fluency, richer vocabulary, and more syntactic complexity in their speech (Boudreau et al., 2018).

Instructional methods in the classroom play a crucial role in fostering the enjoyment of language learning. Supportive teacher-student relationships, engaging content, and dynamic communicative tasks enhance learners' enjoyment and willingness to communicate (Dewaele & MacIntyre, 2014). In contrast, monotonous or overly rigid pedagogical approaches tend to decrease learners' motivation to participate. Enjoyment in language learning not only improves immediate speaking performance but also promotes long-term language development by reinforcing positive associations with the learning experience. These findings

underscore the importance of prioritizing enjoyment as an instructional strategy to create supportive and engaging learning environments.

Motivation in Language Learning

Motivation is a fundamental construct in second language (L2) acquisition that influences learners' effort, persistence, and success in attaining language proficiency (Dörnyei, 2005). Gardner's (1985) socio-educational model highlights two main motivational orientations: integrative motivation, which drives learners to connect with the target language culture, and instrumental motivation, which emphasizes practical benefits such as career advancement. Both orientations significantly impact learners' willingness to engage in speaking tasks; integrative motivation enhances communicative risk-taking, while instrumental motivation fosters goal-oriented perseverance.

The L2 Motivational Self System, introduced by Dörnyei (2005), builds upon previous theoretical models by introducing the concept of the "ideal L2 self." This framework emphasizes visualization and encourages learners to align their current efforts with their desired future selves as competent language users. Empirical studies have shown that learners who strongly identify with their ideal L2 selves demonstrate greater willingness to communicate and higher speaking proficiency (MacIntyre et al., 2003). Additionally, contextual factors such as teacher support and meaningful communicative tasks influence motivational outcomes, highlighting the dynamic interaction between individual and environmental factors (Ushioda, 2011).

The Potential of AI in Language Learning

AI offers promising solutions for addressing affective variables in language learning, such as anxiety, motivation, and enjoyment. AI-driven tools, including virtual tutors and speech recognition systems, create low-anxiety environments that allow learners to practice speaking without the fear of negative evaluation (Ji et al., 2023). These tools support personalized and self-paced learning, reducing the emotional and cognitive pressures associated with traditional classroom instruction and enhancing learners' sense of control (Noushi & Ghasemi, 2021). Game-based learning applications further increase motivation by incorporating rewards and challenges into goal-oriented, engaging tasks. AI also promotes enjoyment through interactive and immersive learning experiences (Dashtestani & Hojatpanah, 2021; Mehranirad, 2025). For example, AI-powered chatbots simulate real-world scenarios, making language learning more relevant and appealing (Tai & Chen, 2023). These applications align with Fredrickson's (2001) broaden-and-build theory, which emphasizes the role of positive emotions in expanding cognitive and behavioral capacities. By addressing learners' emotional needs, AI helps foster resilience, creativity, and willingness to take communicative risks.

Emerging evidence suggests that AI-based interventions have a significant impact on foreign language learning, and the use of such technologies is rapidly expanding. Multiple studies have shown that these technologies affect not only linguistic outcomes but also the affective dimensions of learning. For instance, Wei examined the effects of AI-based language instruction on L2 proficiency, language learning motivation, and self-regulated learning among English learners. Findings revealed that the experimental group receiving AI-enhanced instruction outperformed the control group in all language skills and demonstrated higher motivation and greater use of self-regulatory strategies. Qualitative analysis also showed that the AI platform fostered interaction, personalized learning, and ultimately enhanced learner autonomy.

In another study, Dizon (2017) investigated Amazon's AI assistant, Alexa, and found that while it struggled with understanding Japanese learners' commands, it performed better in interactive storytelling tasks. Indirect pronunciation feedback also improved the effectiveness of authentic communication, and a 10-week classroom implementation of Alexa enhanced learners' speaking skills. Similarly, Saifuddin and Yuliansyah (2023) studied the effects of AI-based language learning on students' motivation and anxiety in learning English. Their findings indicated a significant increase in motivation; however, anxiety levels also rose, particularly among students with limited familiarity with the technology. Moreover, Tai and Chen (2023) demonstrated that low-threat environments created by Google's smart assistant increased learners' enjoyment, reduced anxiety, and enhanced communicative confidence.

In a more recent study, Rahimi and Fathi (2024) found that interaction with English speakers via the *eTandem* platform was more effective in improving speaking skills and willingness to communicate than traditional classroom settings. Collectively, these studies highlight the potential of AI-based technologies to positively influence both linguistic and emotional aspects of foreign language learning. Yang (2024), through a review of prior research, concluded that AI tools positively affect English language learning motivation, self-regulated learning, and overall proficiency. Interview data and meta-analytic findings further suggest that learners generally hold favorable attitudes toward AI-enhanced learning environments and view AI as a beneficial component in the learning process.

Nonetheless, research exploring this potential through the lens of positive psychology remains limited, particularly within the context of Iran's educational system (Baleghizadeh & Saeedi, 2024). Iranian learners face unique challenges, including culturally ingrained negative attitudes toward language learning and limited access to advanced technologies. Therefore, the present study investigates the impact of an AI-based educational

platform on key affective variables in Iranian learners' language learning experiences. Specifically, the study addresses the following research questions:

1. How do AI-based educational platforms affect language learning anxiety among Iranian EFL learners?
2. How do AI-based educational platforms affect language learning motivation among Iranian EFL learners?
3. How do AI-based educational platforms affect enjoyment in language learning among Iranian EFL learners?

These questions are grounded in the theoretical framework of positive psychology, which emphasizes the interaction of affective and cognitive dimensions in optimizing learning outcomes. By examining how AI technology manages affective variables in a specific educational context, this study aims to contribute to the growing body of research on AI-enhanced language instruction and its alignment with the principles of positive psychology.

3. Methodology

Participants

The participants in this study consisted of 64 EFL learners selected from an initial pool of 80 students based on their performance on the Oxford Placement Test. This test was used to ensure homogeneity in language proficiency among the participants. To minimize selection bias and ensure comparability between groups, all learners were randomly assigned in equal numbers to either the experimental or control group. However, due to scheduling conflicts following the announcement of class times, three students requested to switch from the control group to the experimental group. As a result, the final sample included 35 learners in the experimental group and 29 in the control group.

The sample comprised 23 male and 41 female participants, with a relatively balanced gender distribution across the two groups: 19 women and 10 men in the control group, and 22 women and 13 men in the experimental group. Participants were aged between 17 and 25 and were enrolled in upper-intermediate English language courses at a language institute. These learners shared similar educational and cultural backgrounds, which provided a consistent basis for evaluating the effects of the intervention. Prior to the intervention, all participants completed pre-test questionnaires measuring their levels of language learning anxiety, enjoyment, and motivation. During the intervention, the experimental group used an AI-based educational platform called *Owlift*, while the control group received instruction through traditional teaching methods. Both groups followed the same curriculum over a 19-session academic term, with two sessions per week over approximately three months. This structured program ensured equal exposure to speaking and communicative activities for both groups.

Data Collection Instruments

To assess the core variables of this study – anxiety, enjoyment, and motivation – three validated instruments were employed

both at the beginning and end of the intervention.

Foreign Language Enjoyment Scale

The 21-item Foreign Language Enjoyment (FLE) Scale developed by Dewaele and MacIntyre (2014) was used to measure learners' enjoyment in the context of foreign language learning. This self-report instrument employs a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) to capture positive emotional experiences associated with language learning. The construct validity of this instrument was confirmed in a large-scale study involving 1,746 language learners (Dewaele & MacIntyre, 2014). Key dimensions of validity include enjoyment derived from teacher support, personal progress, and classroom atmosphere. These components were also validated in a subsequent study with Chinese learners (Zheng et al., 2024). Moreover, its concurrent validity was confirmed by its negative correlation with related constructs, such as foreign language anxiety (Dewaele & MacIntyre, 2014). The scale has shown high internal consistency, with Cronbach's alpha coefficients exceeding .80 in multiple studies, making it a reliable tool for assessing enjoyment in the present research.

Foreign Language Classroom Anxiety Scale (FLCAS)

Anxiety levels were measured using the FLCAS developed by Horwitz et al. (1986), which includes 24 items rated on a 5-point Likert scale. The construct validity of this scale has been extensively supported through both exploratory and confirmatory factor analyses. Despite being developed nearly four decades ago, it remains a widely used standard instrument in psycholinguistic research. The main factors identified in the scale pertain to communication apprehension, test anxiety, and fear of negative evaluation from peers. The scale has demonstrated robust psychometric properties, with reliability estimates (Cronbach's alpha) typically exceeding .85, establishing its utility for assessing language classroom anxiety.

Motivated Strategies for Learning Questionnaire (MSLQ)

Learners' motivation was measured using the MSLQ developed by Pintrich et al. (1991), which evaluates motivational beliefs and self-regulated learning strategies. This study employed the subscales for intrinsic motivation, task value, and self-efficacy, with reported reliability coefficients above .75. Each item was rated on a 7-point Likert scale (1 = not at all true of me to 7 = very true of me). The scale's validity has been widely confirmed in educational research, and the official user manual with scoring instructions was published by Pintrich and colleagues in 1991. Additionally, Anaïs et al. (2012) validated the concurrent validity of cognitive and motivational belief components of the scale.

Procedure

The intervention was conducted over 19 sessions during an academic semester. Both experimental and control group participants engaged in speaking and communicative

activities; however, instructional approaches differed across the groups. The experimental group used *Owlift*, an AI-based educational platform designed to enhance language learning, particularly speaking skills, through interactive, learner-centered activities. *Owlift* provided features such as one-on-one conversations, authentic communicative scenarios, and collaborative project suggestions on diverse topics. Key characteristics of the platform included adaptive difficulty levels based on learner performance and dynamic suggestions to encourage classroom participation. These features allowed learners to practice speaking in a supportive, low-stress environment, increasing their confidence and engagement. In this group, the teacher acted as a facilitator, managing discussions initiated by *Owlift* and offering occasional guidance to complement the platform's suggestions. This approach aimed to maximize the platform's potential while retaining the human element of instruction.

In both experimental and control classrooms, all four language skills were taught. However, there was a particular emphasis on interactive skills, especially speaking. Each 90-minute session included approximately 30 minutes focused on speaking development. In the experimental group, the teacher played a supervisory and guiding role, designing speaking prompts and analyzing learners' responses and feedback. In effect, the use of *Owlift* enabled learners to develop their speaking skills systematically within the platform's framework, with constant access to structured, topic-specific speaking tasks. Lessons were designed to foster classroom interaction, with the teacher using *Owlift* to design and implement speaking-focused activities. For instance, the teacher generated discussion prompts using the platform, and learners engaged in group discussions to respond to these questions. Learners also received speaking tasks as homework, recording and submitting their responses.

In the control group, participants completed similar speaking and communicative tasks without access to the *Owlift* platform. Instead, the teacher conducted sessions using traditional methods, such as structured pair dialogues, group discussions, and teacher-learner interactions. Instructional activities were designed to closely match the themes addressed in the experimental group. However, the absence of AI-based tools meant that learners in the control group relied solely on teacher facilitation and in-class peer interaction to develop their speaking skills. At the beginning and end of the semester, all participants completed pre- and post-intervention questionnaires to assess their levels of anxiety, enjoyment, and motivation in language learning. These assessments enabled comparative analysis of *Owlift*'s impact on affective and motivational variables.

4. Research Findings

Data were analyzed using SPSS version 22. Descriptive statistics were first calculated to assess levels of anxiety,

enjoyment, and motivation in both the experimental and control groups. Independent-samples t-tests were conducted to identify any significant differences in pre-intervention scores between groups. To address the research questions, one-way ANCOVAs were conducted with pre-intervention scores as covariates to examine post-intervention differences between groups. Finally, paired-samples t-tests were used to assess within-group changes during the intervention period. Table 1 presents the descriptive statistics for anxiety, enjoyment, and motivation in both groups before and after the intervention. As shown, mean scores for the experimental and control groups were relatively comparable prior to the intervention.

Table1: Descriptive Statistics for Anxiety, Enjoyment, and Motivation

Variable	Group	N	Mean	SD
Anxiety (Pre)	Experimental	35	3.73	0.69
	Control	29	3.58	0.65
Enjoyment (Pre)	Experimental	35	2.96	0.72
	Control	29	3.19	0.68
Motivation (Pre)	Experimental	35	3.43	0.35
	Control	29	3.39	0.60
Anxiety (Post)	Experimental	35	3.18	0.52
	Control	29	3.89	0.80
Enjoyment (Post)	Experimental	35	4.41	0.61
	Control	29	3.17	0.75
Motivation (Post)	Experimental	35	3.79	0.58
	Control	29	3.31	0.55

To ensure equivalence between groups prior to the intervention, independent-samples t-tests were conducted on the pre-intervention scores. Results indicated no statistically significant differences between the groups in terms of anxiety, enjoyment, or motivation.

Table2: Independent-Samples t-Tests (Pre-Intervention)

Variable	t	df	*p*
Anxiety	0.90	62	.37
Enjoyment	-1.34	62	.18
Motivation	0.34	62	.74

A series of one-way ANCOVAs were conducted to evaluate the effect of the intervention on post-intervention scores while controlling for pre-intervention scores. The results indicated statistically significant differences between groups for

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all three variables: Anxiety: $F(1, 61) = 13.19$, $p < .001$, partial $\eta^2 = .239$, Enjoyment: $F(1, 61) = 53.80$, $p < .001$, partial $\eta^2 = .469$, Motivation: $F(1, 61) = 10.74$, $p = .002$, partial $\eta^2 = .150$. These results suggest that the intervention significantly reduced anxiety and increased enjoyment and motivation in the experimental group compared to the control group.

Table3: One-Way ANCOVA Results (Post-Intervention)

Variable	F	df1	df2	*p*	partial η^2
Anxiety	13.19	1	61	< .001	.239
Enjoyment	53.80	1	61	< .001	.469
Motivation	10.74	1	61	.002	.150

Finally, paired-samples t-tests were conducted to assess within-group changes from pre- to post-intervention. In the experimental group, statistically significant improvements were observed: Anxiety: $t(34) = 4.11$, $p < .001$, Enjoyment: $t(34) = -9.72$, $p < .001$, Motivation: $t(34) = -3.00$, $p = .005$. In contrast, the control group did not exhibit significant changes for any variable: Anxiety: $t(28) = -1.70$, $p = .10$, Enjoyment: $t(28) = 0.14$, $p = .89$, Motivation: $t(28) = -0.67$, $p = .51$.

Table 4: Paired-Samples t-Tests (Pre–Post Changes)

Group	Variable	t	df	p
Experimental	Anxiety	4.11	34	< .001
	Enjoyment	-9.72	34	< .001
	Motivation	-3.00	34	.005
Control	Anxiety	-1.70	28	.10
	Enjoyment	0.14	28	.89
	Motivation	-0.67	28	.51

5. Discussion and Conclusion

The findings of this study revealed that prior to the intervention, there were no significant differences between the experimental and control groups regarding levels of anxiety, enjoyment, and motivation. However, one-way ANCOVA indicated significant post-intervention differences between the groups on these affective variables, with the experimental group outperforming the control group. Furthermore, paired sample t-tests showed statistically significant positive changes in the experimental group during the intervention period, whereas no substantial changes were observed in the control group. These findings suggest that the intervention effectively enhanced anxiety reduction, increased enjoyment, and boosted motivation among the participants in the experimental group.

As previously discussed, anxiety is a pervasive challenge in language learning, particularly during speaking tasks, where

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learners often feel vulnerable due to fear of negative evaluation and limited language competence (Horwitz et al., 1986). The observed significant reduction in anxiety levels among the experimental group aligns with Krashen's (1982) affective filter hypothesis. By lowering anxiety, the intervention likely reduced the affective filter that otherwise hampers cognitive processes critical to language acquisition, such as lexical retrieval and speech fluency. These findings are consistent with earlier studies indicating that supportive classroom environments and positive teacher-student relationships can mitigate anxiety and foster psychological safety (Duale et al., 2018). Moreover, the results reinforce the importance of incorporating stress-reduction techniques such as mindfulness exercises and reflective journaling, which have been shown to improve learners' emotional states and create more conducive conditions for effective learning (Oxford, 2015). As mentioned earlier, although AI-assisted language learning can increase learner motivation, it may also heighten anxiety, particularly among those unfamiliar with the technology (Saifuddin & Yuliansyah, 2023).

In addition, the observed increase in language learning enjoyment among the experimental group underscores the role of positive emotions in facilitating language acquisition. According to Fredrickson's (2001) broaden-and-build theory, positive emotions expand learners' cognitive and behavioral repertoires, enabling fuller engagement in communicative tasks. In this study, participants in the experimental group reported greater enjoyment during speaking activities, which may have alleviated their fear of making mistakes and encouraged risk-taking in communication. These results align with findings by Dewaele and MacIntyre (2014), who emphasized that dynamic and engaging classroom practices enhance learner enjoyment and increase their willingness to communicate. Furthermore, the long-term benefits of fostering enjoyment – such as strengthening the positive association between emotional well-being and language learning – highlight the importance of prioritizing enjoyment in instructional design not only as a short-term outcome but also as a strategic approach to sustaining motivation and supporting learner progress. Additionally, these results resonate with recent findings on the positive impact of AI on the learning process. For instance, Tai and Chen (2023) found that low-stress AI-based learning environments created through Google AI increased learners' enjoyment, reduced anxiety, and boosted learners' confidence in oral communication.

Motivation, another fundamental factor in second language acquisition, was also positively affected by the intervention. The findings indicate a significant increase in motivation within the experimental group, which corresponds with Dörnyei's (2005) L2 Motivational Self System. This framework emphasizes the role of the ideal L2 self in guiding learners' efforts toward language mastery. The intervention likely

helped participants align their current language learning efforts with their envisioned future selves as proficient English users, thereby enhancing their willingness to engage in speaking activities. These findings are consistent with previous research that links a strong ideal L2 self to increased communication risk-taking and greater fluency (MacIntyre et al., 2003). Furthermore, the study highlights the significance of contextual factors such as meaningful communicative tasks and teacher support in fostering motivation (Ushioda, 2011). The integration of these elements in the intervention may have contributed to the observed motivational gains and underscored the dynamic interplay between individual aspirations and environmental influences in shaping language learning outcomes. In this regard, a recent study with Iranian learners found that using the *eTandem* platform significantly increased learners' motivation, improved speaking skills, and enhanced their willingness to engage in oral communication (Rahimi & Fathi, 2024).

Emerging technologies – particularly AI – offer unique opportunities for extending the principles of positive psychology in language learning. AI-based tools can create low-stress environments where learners can engage in speaking practice without the fear of negative evaluation (Tai & Chen, 2023), thereby reducing anxiety and enhancing the enjoyment of learning. Interactive features, such as simulated conversations with AI-driven chatbots, can mimic real-life scenarios, making learning more immersive and engaging (Noels et al., 2000). By addressing learners' emotional and motivational needs, AI-based interventions align with the broaden-and-build theory and empower learners to develop resilience, creativity, and confidence in their speaking tasks (Mehranirad, 2025). Studies by Wei (2023) and Yang (2024) have shown that AI-based language instruction positively influences linguistic development, enhances learning motivation, and strengthens self-regulated learning strategies. Moreover, the integration of AI in language education promotes learner autonomy by offering more interaction and personalized learning experiences.

Although existing research focuses on different skills, limiting direct comparison with other studies, the present findings underscore the significant potential of AI-based platforms – grounded in positive psychology principles – to impact motivational, emotional, and enjoyment-related aspects of language learning. From a motivational standpoint, AI can enhance learners' sense of competence and progress through immediate feedback and level-appropriate interactive activities. According to Self-Determination Theory, such experiences foster intrinsic motivation by promoting a sense of autonomy and control over the learning process (Ryan & Deci, 2000). Additionally, AI environments can engage learners more effectively by personalizing content and increasing the perceived value of learning tasks. Anxiety, a major obstacle in language learning, is

substantially mitigated in AI-mediated settings. Through realistic conversation simulations with chatbots and intelligent assistants, learners can practice in a judgment-free space, reducing social pressure and fear of evaluation, thereby boosting performance and self-confidence. AI environments, due to their flexibility and repeatability, also reduce stress associated with failure. Finally, enjoyment is enhanced through a variety of tasks, positive feedback, and simulated real-world scenarios. Engaging, non-threatening interactions elicit positive emotions, which – according to the broaden-and-build theory – contribute to the development of language skills. This unique combination of anxiety reduction, motivational enhancement, and increased enjoyment transforms language learning into a more effective and enjoyable experience.

The findings of this study highlight the transformative potential of positive psychology-based interventions in addressing the emotional and motivational challenges of language learning. By reducing anxiety, enhancing enjoyment, and increasing motivation, these approaches provide supportive conditions that promote learner success. From a pedagogical standpoint, the results indicate that incorporating strategies aimed at improving learners' emotional well-being can help create more supportive learning environments. For example, designing meaningful speaking tasks and reducing stress through mindfulness exercises or the use of emerging technologies can lead to better language learning outcomes.

This study emphasizes the powerful influence of positive psychology and strength-based instruction in lowering language learning anxiety, enhancing enjoyment, and fostering motivation in second language learning. These results align with the principles of positive psychology, which advocate for learning environments that promote human flourishing and well-being (Mercer & Dörnyei, 2020). By focusing on strengthening learners' emotional resilience and leveraging their personal strengths, interventions rooted in this framework can effectively address emotional and motivational barriers in language learning. Specifically, this study provides empirical evidence supporting the reduction of language anxiety, the enhancement of learning enjoyment, and the increase in motivation, contributing to both short- and long-term improvements in learners' speaking performance. From an applied perspective, integrating modern technologies such as AI can create low-stress, authentic learning environments that offer immediate feedback and foster meaningful engagement. Moreover, using AI in language education may support more sustained and effective learning by establishing emotionally supportive conditions.

Nevertheless, this study has certain limitations that should be acknowledged. Participants in the experimental and control groups were not perfectly balanced in

number, and the sample consisted of a relatively small group of Iranian language learners, which may limit the generalizability of the findings. Additionally, the study did not assess the long-term effects of the intervention or examine the role of cultural and individual factors in anxiety reduction and enjoyment enhancement. These limitations suggest that future research should involve more diverse populations, longer study durations, and more comprehensive evaluations of variables influencing language learning. It is therefore recommended that future studies use larger samples and investigate the long-term effects of similar interventions. Moreover, exploring the integration of advanced technologies such as AI with positive psychology-based methods could uncover new dimensions of language learning. Researchers may also examine the impact of these approaches on the development of specific language skills and learners' social interactions to better assess the efficacy and scalability of such approaches in language education.

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