

CHAPTER 2

LITERATURE REVIEW

In this chapter, an in-depth explanation of the theories utilized for the study will be presented. The theories related to AI in Language Learning, Character.AI, Technology Acceptance Model (TAM), and study of relevant research.

A. Theoretical Framework

In this section, the researcher focuses on the elaboration of the literature related to the topic. This includes a brief overview of AI in Language Learning, Character.AI, and the Technology Acceptance Model (TAM).

1. AI in Language Learning

Artificial Intelligence (AI) refers to the development of computer systems capable of performing tasks that typically require human intelligence. These systems are designed to emulate a range of human mental activities, including problem-solving, reasoning or even understanding language (Nilsson, 1998). Types of AI include machine learning, natural language processing, computer vision, neural networks, and expert systems. Machine learning, in particular, plays a vital role in AI by enabling systems to learn from data and improve their performance over time without being explicitly programmed. Artificial intelligence also allows people to converse with machines, computers or robots.

One emerging AI in language learning is the AI chatbot. An AI chatbot is a computer program that simulates human conversation through a text-based or voice-based dialogue system using natural language processing, machine learning, and deep learning (Zumstein & Hudertmark, 2017). These interactive systems are designed to converse with humans in a coherent and natural manner, and their advanced capabilities have generated significant interest for use in conversational contexts.

In the context of English as a Foreign Language (EFL), AI chatbots have emerged as valuable pedagogical tools. Research has highlighted several roles of AI chatbots:

1. Conversational Partner

AI chatbots provide a readily available platform for students to practice speaking and writing. The study by Cakmak (2022) provides empirical support for this, demonstrating that learners who engaged in consistent practice with a chatbot ultimately showed greater improvement in their speaking skills compared to face-to-face peer interactions.

2. Personalized Learning

AI chatbots can facilitate language learning by meeting individual learner needs. They can facilitate it by adapting content and feedback based on various learner-specific features such as for grammar, vocabulary, or even pronunciation. This is aligned with the research from El Mourabit et al. (2025) which states that AI chatbots in higher education support a wide range of educational tasks, from language learning in formal contexts to personalized guidance.

3. Promotes Autonomous Learning

Perhaps one of the most significant advantages of AI chatbots is their ability to foster learner autonomy. They are accessible 24/7, allowing students to take control of their learning process outside the classroom, set their own pace, and focus on their individual needs. This aligns with the findings of Huang et al. (2022), who noted that chatbots support self-directed learning by providing an on-demand practice platform that motivates students to engage in additional, voluntary language practice.

These studies show capabilities that make AI chatbots valuable tools for enhancing both formal and informal language learning. Given these benefits, AI chatbots can be effectively utilized as tools for English language learning. Therefore, in line with current phenomena observed in the present study, there is a clear need for a dedicated study to further investigate this area.

2. Character.AI

Among the diverse landscape of AI chatbots, Character.AI stands out as a unique and innovative platform. Co-founded by Noam Shazeer and Daniel De Freitas, both former AI researchers at Google, Character.AI was launched with the vision of enabling open-ended conversations and collaborations with a vast array of AI-powered characters (Shazeer & de Freitas, 2022). The platform's core functionality allows users to interact with thousands of AI "characters," who can be based on historical figures, fictional personas, or entirely original creations. Unlike generic chatbots like ChatGPT, which often functions as a direct assistant or information provider, Character.AI is designed to simulate the distinct personality and knowledge base of its specific characters. This fundamental difference transforms the interaction from a simple question-and-answer session into a dynamic, immersive, and contextual role-playing experience.

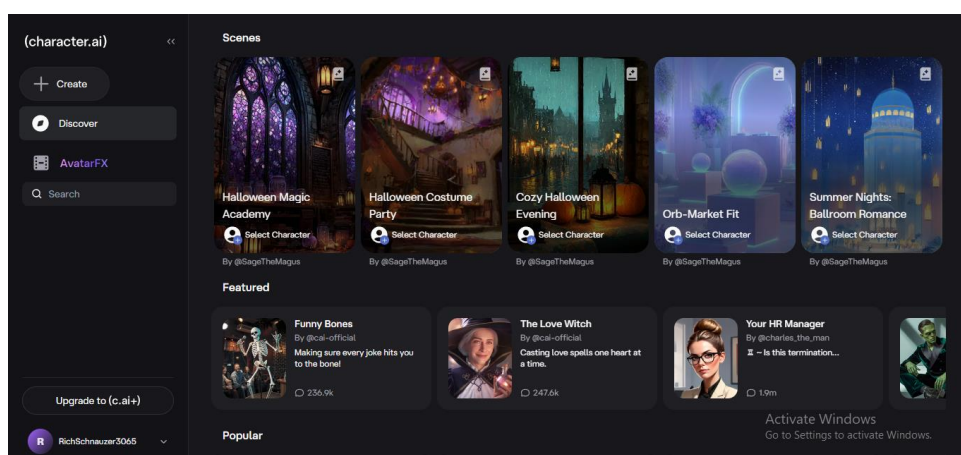


Figure 1. Character.AI Homepage

Character.AI represents a powerful tool in English language learning. Character.AI offers a range of features designed to create engaging, interactive, and educational experiences. Beyond its general chatbot capability, several specific features make the platform particularly relevant for supporting English language learning.

a) Authentic Communication

The AI technology used by Character.AI can maintain context over multiple turns in a conversation, allowing for coherent and relevant dialogues that closely simulate natural human interaction. This sustained context supports learners in engaging in extended, meaningful exchanges rather than short, disconnected exchanges, thereby providing richer opportunities for language practice.

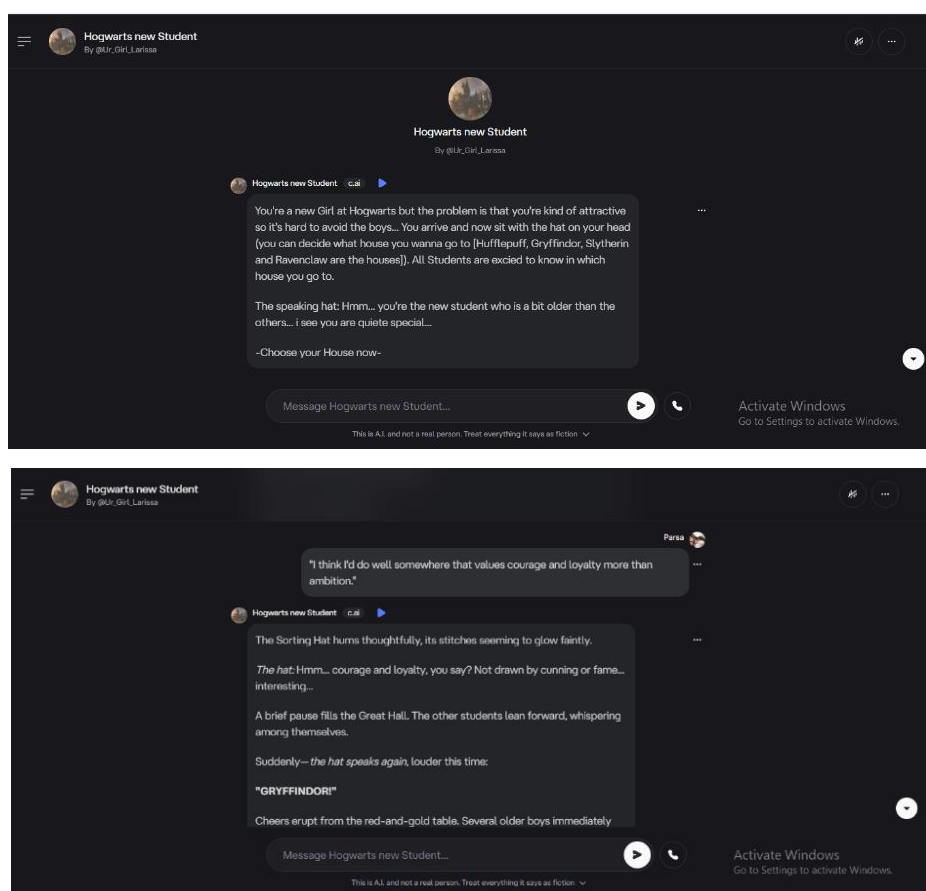


Figure 2. Character.AI Chat Interface

b) Voice Call Feature

Character.AI provides a voice call feature that enables real-time, two-way spoken interaction between the user and an AI character. Unlike text-based chat, this feature allows learners to practice spontaneous spoken English, including listening comprehension, pronunciation, and conversational fluency. Each character is assigned a

distinct voice, and users can select from various accents, allowing exposure to diverse pronunciation patterns that resemble interaction with native or near-native speakers.

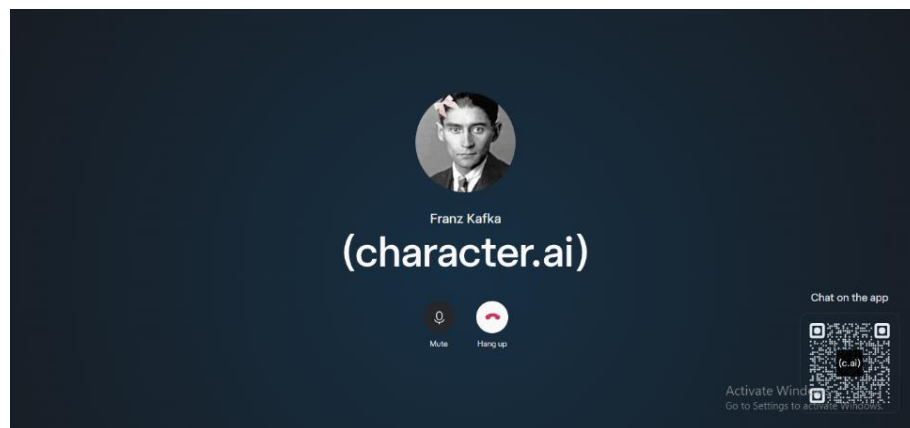


Figure 3. Character.AI Voice Call Interface

c) Character Voice (Text-to-Speech)

In addition to the voice call feature, each character's text-based responses are accompanied by an audio playback option (text-to-speech), allowing learners to simultaneously read and listen to the AI's responses. This dual-mode exposure supports learners in connecting written form with correct pronunciation, particularly for vocabulary or expressions they encounter for the first time.

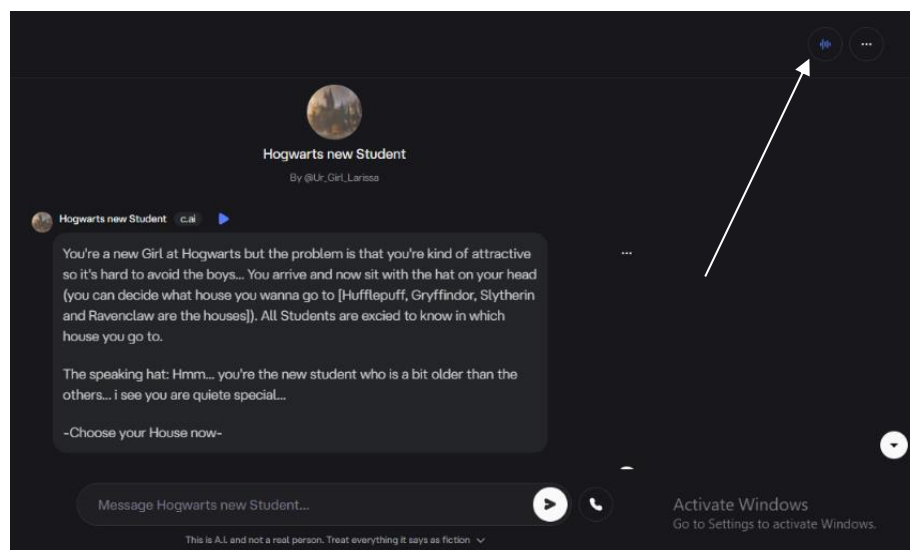


Figure 4. Character Voice/Text-to-Speech icon

d) Character and Persona Creation

Users can create their own AI characters by defining personality traits, background descriptions, greetings, and example dialogues. This feature encourages learners to actively construct language input, including vocabulary, sentence structure, and tone, rather than only consuming pre-written content, thereby promoting productive language use.

Figure 5. Character Creation Page

e) Role-Play and Interactive Storytelling

Character.AI enables users to engage in role-play scenarios and interactive stories that simulate real-life situations. These scenarios provide a contextualized space for learners to practice written and spoken English within a narrative structure, encouraging the application of vocabulary and expressions in a meaningful context.

f) Scenes

In addition to open-ended role-play, Character.AI provides Scenes, pre-written storylines created by other users that already establish a specific plot, setting, and narrative direction. Rather than starting from a blank conversation, learners browse and select an existing Scene, then choose one of their own characters to take on the user-facing role within that storyline. As the conversation unfolds, the AI carries the story forward according to the scene's pre-set premise,

giving learners a structured context in which to practice written and spoken English without needing to construct the scenario themselves.

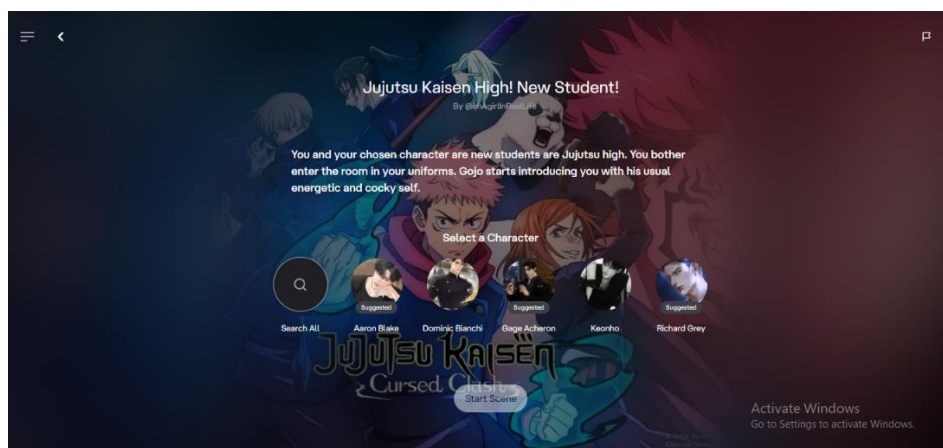


Figure 6. Character.AI Scenes Page

g) Chat Memories

Character.AI allows users to manually pin important messages within a conversation so that a character can recall them later. For learners, this feature supports continuity across extended or repeated interactions, allowing them to mark key vocabulary, expressions, or information they want the character to remember and build on in future exchanges, rather than restarting each conversation from a blank context.

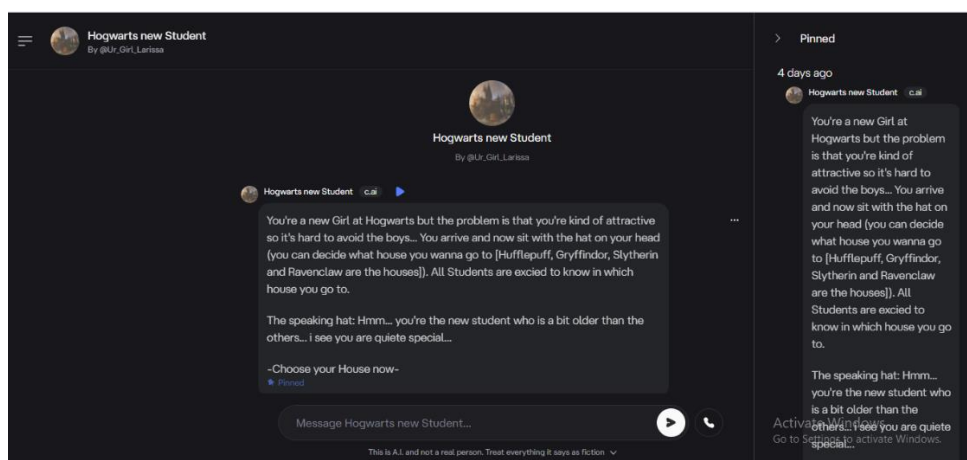


Figure 7. Pinned Message in Character.AI Chat

These features collectively support language learning by providing learners with an on-demand, interactive practice environment that promotes self-directed learning (Huang et al., 2022). Additionally, consistent engagement with AI-driven conversation has been shown to improve communicative skills in a supportive and accessible setting (Grab, 2025). Therefore, Character.AI's features are designed to make language learning more engaging, effective, and accessible, providing a valuable tool for learners of all ages and proficiency levels.

3. Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is a widely used framework for understanding how users come to accept and use technology. It is specifically designed to predict and explain user behavior regarding technology adoption and utilization. Initially introduced by Davis (1989), TAM assumes that Perceived Ease-of-Use (PEOU) and Perceived Usefulness (PU) are the primary factors influencing an individual's decision to use a technology. PU refers to the extent to which a person believes that using a particular system will improve their performance, while PEOU refers to the extent to which a person believes that using the system will be free from effort. Over the years, researchers have extended and modified TAM to better capture the complexities of technology adoption.

Over time, the model has undergone several extensions. Venkatesh & Davis (2000) refined the original Technology Acceptance Model (TAM) by introducing TAM2, which incorporated additional factors influencing Perceived Usefulness (PU) and Perceived Ease-of-Use (PEOU). TAM2 added two main categories of determinants for the Perceived Usefulness part which are social influence processes and cognitive instrumental processes. Social influence processes include subjective norm, voluntariness, and image. Cognitive instrumental processes include job relevance, output quality and result demonstrability.

In a recent development, Venkatesh and Bala (2008) added new

determinants to PEOU and have a new name that is TAM3. TAM3 has added several additional determinants that influence Perceived Ease-of-Use of the users. The determinants are divided into 2 categories, anchor factors (Computer self-efficacy, Perceived of External Control, Computer anxiety, and Computer playfulness) and adjustment factors (Perceived enjoyment, Objective usability). TAM3 thus provides a more comprehensive view of the determinants shaping users' perceptions toward new technology.

This study will utilize the 11 determinants outlined in TAM3 to reveal EFL students' Perceived Usefulness (PU) and Perceived Ease-of-Use (PEOU) regarding the roles of Character.AI in their language learning. The following is an explanation of these 11 determinants:

Table 1. TAM3

Indicators	Determinants	Descriptions
Perceived Usefulness (PU)	Subjective Norms	The individual perceives that people believe they should use the system.
	Image	The degree to which use of the system is perceived to improve a person's status and make them look better in their social group.
	Job Relevance	The degree to which individual perception of information or technology's importance in helping or relevant for their work.
	Output Quality	The degree to which individual believes the system performs tasks well and

Perceived Ease-of-Use (PEOU)	produces good results.	
	Result	The degree to which the results
	Demonstrability	are measurable.
	Computer Self-Efficacy	The individual's belief to perform certain tasks using computers,
	Perceptions of External Control	The degree to which an individual believes that organizational and technical resources exist to support the system's use.
	Computer Anxiety	Related to the feeling of fear, stress, or uneasiness when using a system.
	Computer Playfulness	Related to human's natural tendency to be curious and spontaneous when interacting with computers.
	Perceived Enjoyment	An individual perceives that using the system is enjoyable and fun in its own right, regardless of its results.
Objective Usability		The efforts required to complete a particular task.

TAM3 integrates the determinants of PU and PEOU into a complete framework. Research has consistently shown that the constructs of PU and PEOU, as elaborated in TAM3, significantly predict user acceptance across a wide range of technologies, including software applications, AI, and e-learning platforms (Al-gahtani, 2016; Kleine et al., 2025). Therefore, this study employs TAM3 as the primary theoretical foundation because the

model provides a more detailed guideline than the old TAM for understanding technology acceptance from the EFL students' perception. Specifically, TAM3 offers a structured framework to investigate how EFL students perceive Character.AI as useful (Perceived Usefulness) and easy to use (Perceived Ease of Use) with several additional determinants in their language learning process.

B. Study of the Relevant Research

Several previous studies have explored the use of AI in language learning, which provides empirical evidence relevant to this research.

First, a study conducted by Kim and Sim (2024) investigated the impact of integrating an AI-powered tool, Plang, on English language learning and the autonomous learning of Korean EFL learners. This study aimed to examine the overall experiences of using the AI app in language learning and its impact on learner autonomy. The two-month research employed a qualitative approach derived from a mixed-method study, incorporating pre- and post-surveys, reflective journals, and in-depth individual interviews. The findings showed that the integration of the AI-powered tool helped learners: (i) to enhance language skills, particularly speaking proficiency; (ii) to foster learner autonomy through a personalized feedback system; and (iii) to establish new goals that facilitate active learner engagement.

Second, a study by Laili et al. (2025) explored students' perceptions on the use of Artificial Intelligence (AI) ChatGPT in English Language Learning, focusing on the benefits and challenges in higher education. This study aimed to examine students' attitudes toward using ChatGPT as a learning aid and its potential advantages and weaknesses. The research employed a descriptive qualitative approach. It used a questionnaire administered to 45 health science students who used ChatGPT for English learning, with 10 purposively sampled students participating in semi-structured interviews. The findings revealed that the AI tool is valued for its ability to explain complex topics, expand vocabulary, and assist with writing.

Third, a study conducted by Fadhila & Br. Kembaren (2025) investigated EFL students' perceptions of Character.AI as a tool to improve their writing skills. This study aimed to understand how Character.AI assists students in developing their writing abilities and boosting their confidence. The research employed a qualitative case study methodology, using questionnaires and interviews with 10 university students. The findings indicated that Character.AI helped students learn new sentences, improve grammar, and understand contextual vocabulary.

Furthermore, these studies highlight the growing relevance of AI in language learning. Yet, despite these findings, research focusing on the roles of Character.AI in EFL students' language learning remains scarce. This gap reinforces the necessity of the present study, which aims to explore the roles of Character.AI in EFL students' language learning using the TAM3 framework.