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To cite this article: Ziqi Chen, Wei Wei & Di Zou (02 Jun 2025): Generative AI technology and language learning: global language learners' responses to ChatGPT videos in social media, Interactive Learning Environments, DOI: [10.1080/10494820.2025.2511248](https://doi.org/10.1080/10494820.2025.2511248)

To link to this article: <https://doi.org/10.1080/10494820.2025.2511248>



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Published online: 02 Jun 2025.



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Generative AI technology and language learning: global language learners' responses to ChatGPT videos in social media

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ABSTRACT

Generative AI technology has great potential for language learning and teaching. Since the launch of ChatGPT at the end of 2022, its digital affordance on language learners remains to be determined. This sequential mixed-method study aimed to detect the emotions in language users' self-reflection of their learning experiences with ChatGPT. This study analysed commentary data ($n = 1088$) from 19 most widely discussed YouTube videos on using ChatGPT for language learning between January 2023 and April 2023. A coding system was developed based on the visualisation tool *WordCloud* and human analysis results to identify the patterns in these comments. The key findings of this study highlight five crucial digital affordances of ChatGPT that enhance language learning: (1) opportunities to practice language, (2) individualised feedback, (3) engagement and interaction, (4) authentic input of language use, and (5) real-time assistance on linguistic knowledge. Surprisingly, with the assistance of the sentiment analysis tool and hierarchical linear regression, results identified two significant predictors of less positive emotions in language learning experience with ChatGPT: (1) Opportunities to practice language and (2) Individualised feedback. The implications of digital affordances in ChatGPT assisted language learning are discussed.

ARTICLE HISTORY

Received 19 January 2024
Accepted 19 May 2025

KEYWORDS

ChatGPT; language learning;
social media; sentiment
analysis; generative AI

Introduction

Compared with other previous chatbots, Generative Artificial Intelligence (GenAI) chatbots like ChatGPT exhibit distinct capabilities in comprehending and responding to natural language in the following four aspects. First, GenAI chatbots undergo extensive training on substantial text data (Gill & Kaur, 2023), enabling them to grasp and maintain context throughout a conversation (Ray, 2023). This proficiency empowers them to produce coherent and contextually relevant responses based on input. Secondly, GenAI chatbots are specifically trained to engage in conversational interactions. Through GenAI-based prompt learning, they can generate responses conversationally (Gill & Kaur, 2023). Thirdly, GenAI chatbots like ChatGPT employ a reinforcement learning strategy gleaned from human feedback (Ray, 2023), enhancing the quality of responses and aligning with ethical considerations. Lastly, GenAI chatbots exhibit the capability to facilitate effective communication and collaboration across language barriers (Gill & Kaur, 2023). Bearing in mind these

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technical advancements, this study aimed to investigate the learning outcomes and digital affordances of ChatGPT in language learning from a learner's perspective.

Literature review

AI-assisted language learning

While GenAI chatbots can enhance language learning, the relationship between their use and learners' experiences is not straightforward. Positively, these chatbots can reduce anxiety and boost confidence by providing a low-pressure environment for practising language skills, fostering excitement and engagement (Xiao et al., 2024; Yuan & Liu, 2025). They can offer personalised learning experiences with adaptive feedback, gamified elements, and interactive features (Liu, 2024). However, many challenges still exist. Some GenAI chatbots may lack emotional intelligence and empathy, failing to recognise and respond to language learners' emotional states, which can lead to frustration and a lack of support during difficult moments, especially for less proficient students (Xiao et al., 2024). Technical issues, like inaccurate responses, might increase anxiety and disengagement, undermining motivation. Some students also reported anxiety due to technical difficulties or misunderstood feedback, linked to technology complexity and unfamiliarity (Xin & Derakhshan, 2025).

That is, AI-assisted language learning through chatbots has the potential to positively impact learners' emotions by creating an engaging, supportive, and personalised environment. Previous chatbots have a wide range of digital affordances and thus significantly impact language learning. These digital affordances can be classified into two types: interactive and informative activities with chatbots. Interactive activities emphasise the chatbot's involvement in providing opportunities for language practice and offering the provision of personalised and differentiated instruction through two-way communications (Kohnke, 2022). Furthermore, research by Kohnke (2022) demonstrated that the chatbot can adapt to individual learners' varied learning needs by analysing learners' inputs. This allows for tailored instructions that meet diverse learners' linguistic needs and learning styles.

Informative activities highlight the chatbot's role in providing language assessment (Chien et al., 2022; Haristiani et al., 2022; Hsu et al., 2023) and delivering feedback immediately afterwards (Chen et al., 2020). For instance, one study by Chien et al. (2022) found that chatbots can create a competitive learning environment through language-focused quizzes and conventional exercises over four weeks, helping learners improve their language skills and lower their learning anxiety (Hsu et al., 2023). Moreover, one research by Chen et al. (2020) emphasised the usefulness of chatbots in providing real-time information, which can cater to the self-paced learning needs of students.

Learning gains with interactive learning activities of chatbots

Concerning the cognitive gains after interacting with chatbots, the learning outcomes include (1) valuable opportunities to practice and enhance their interactive skills, including speaking and listening (Yang et al., 2022) and (2) a more tailored and targeted instruction to enhance learners' learning framework, contributing to their overall linguistic proficiency (Liu et al., 2023). In addition, behavioural gains can be observed as greater use of learning strategies in partnership with Chatbots. Previous studies have highlighted several behavioural benefits associated with interactive learning activities with chatbots, such as (1) chatbots provide valuable diagnostic information on students' learning progress, enabling them to identify areas of improvement and tailor their learning framework accordingly (Liu et al., 2023) and (2) chatbot enable to inspire students' idea and suggest interesting approaches (Guo et al., 2023). Chatbot-assisted dynamic assessment in L2 learning could provide valuable diagnostic information to individual learners.

Learning gains within informative learning activities of chatbot

Engaging with chatbot assisted informative learning activities results in different learning gains. Cognitive effectiveness refers to enhancing language learning and knowledge acquisition. These cognitive gains encompass the following areas such as (1) wider access and, therefore, a higher chance to engage with L2 authentic learning materials (Kohnke, 2022) and (2) cultivated writing skills by providing guidance, feedback, and prompts to develop well-structured and convincing written responses (Guo et al., 2022). To be more specific, chatbots facilitate learners' access and engagement with diverse content and materials (Kohnke, 2022). Several behavioural benefits were revealed from research studies of formative learning activities with chatbots, including (1) chatbots enabling students to engage with language learning materials, fostering independent learning in out-of-class activities (Haristiani et al., 2022; Kohnke, 2022) and (2) chatbots enabling them to take ownership of their learning process, enhancing students' learning autonomy (Haristiani et al., 2022).

Research gaps

Since chatbots based on GenAI technologies have been recently adopted in language education, there needs to be more exploration in the existing literature on digital affordances and empirical studies concerning the application of ChatGPT. Most studies on integrating ChatGPT in language learning relate to AI-assisted writing (Salvagno et al., 2023), in which researchers expressed mixed and contradictory opinions. The advocates promote its powerful capabilities in offering outlines, drafting examples, assisting in building arguments and providing corrective feedback at the linguistic level (Salvagno et al., 2023), while the opponents express the issues of fabricated references, inaccurate examples, academic integrity and other ethical issues (Ray, 2023).

Although previous chatbot studies have identified several affordance categories, they are probably not equally crucial to L2 learners. In other words, their contributions to ChatGPT users' overall language learning experience remain unclear. Moreover, previous chatbot studies were typically conducted in an experimental environment, with participants studied in highly controlled conditions. A small sample size and a short intervention period may compromise the generalisability of research findings. So, this study fills these gaps by analysing global learners' experiences with ChatGPT on one of the largest social media platforms. By quantifying learners' emotional responses with a sentiment analysis tool, modelling the relationship between reported digital affordances and overall learning experiences with ChatGPT. In this study, we asked two research questions:

- (1) What are the digital affordances of ChatGPT in language learning?
- (2) What is the relationship between ChatGPT digital affordances and learners' preferences, as inferred through their sentiment?

Research design

Research context

This is a sequential mixed-methods study, which combines quantitative and qualitative data, offering comprehensive insights, validating findings, and enhancing research credibility (Creswell, 2014). To catch global language learners' initial learning experience with ChatGPT, the commentary data were extracted from videos on YouTube since it is one of the most popular video platforms in the world and has a tremendous number of videos. The crawling of YouTube video comments was conducted by following the process. Firstly, the study narrowed down the targeted videos by searching for "ChatGPT language learning" and "ChatGPT language teaching". Secondly, based on YouTube's algorithmic video push, the page was scrolled, and the basic information of the videos was crawled through the Python "requests_html" library (<https://requests.readthedocs.io/projects/>

requests.html/en/latest/). Finally, to regulate the accuracy of our search, the videos were purposefully selected based on the following criteria: (1) The title of the video must contain “ChatGPT” (including case and spaces) and “language”; (2) The video’s length must be over 2 min; (3) The video must be published between 15 December 2022, and 30 April 2023 (when this study was initiated); and (4) The content of the video must be relevant to language learning. Afterwards, we selected 19 representative videos (Figure 1).

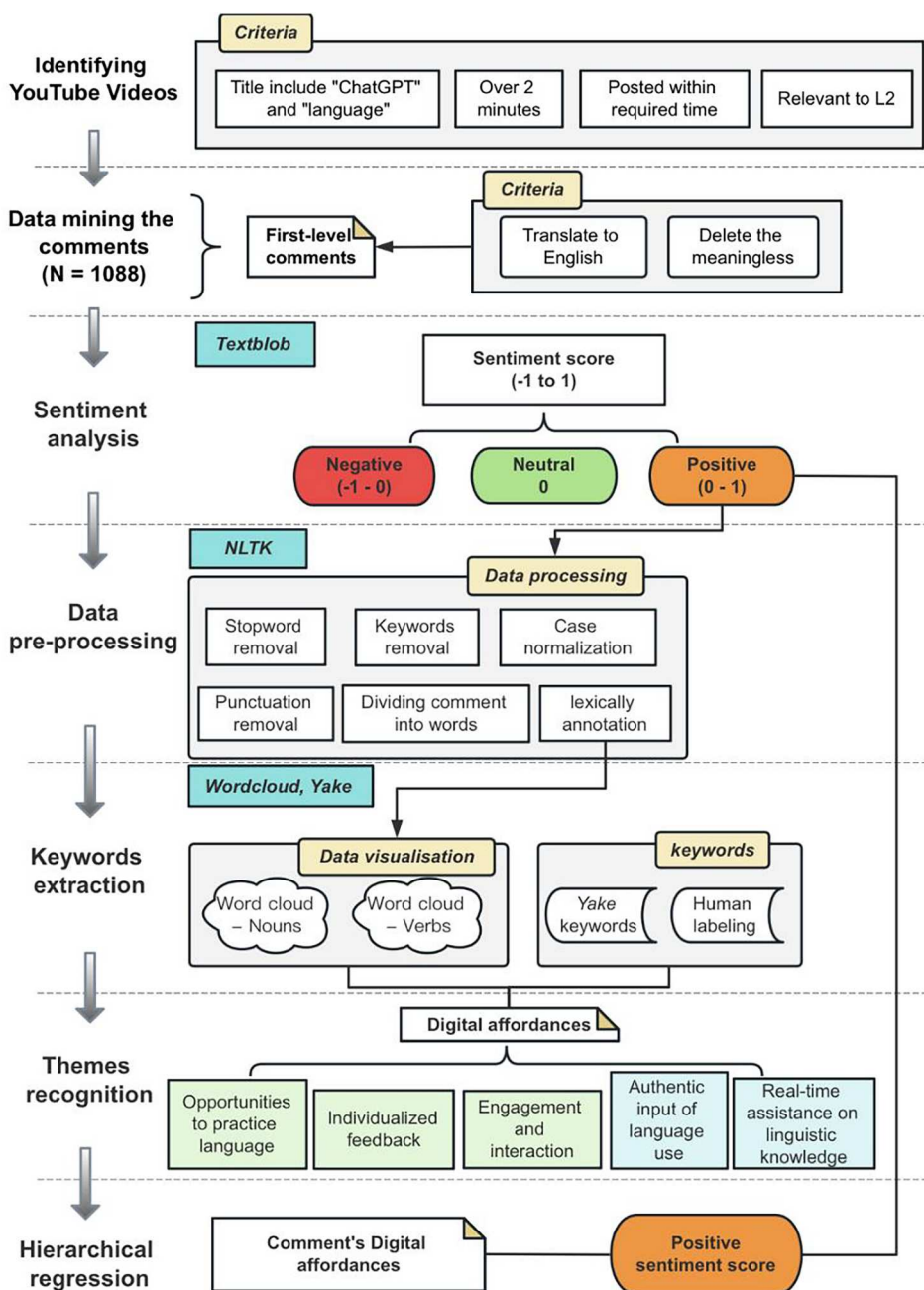


Figure 1. Structure and process of the methodology.

Subsequently, on 17 April 2023, the first-level comments of those 19 YouTube videos were extracted via Python. Comments at the second level are not given consideration. However, it should be noted that comments without any expressive meaning, such as monosyllabic letters, punctuation, and blank comments, were excluded from further analysis. In addition, due to the content of these videos related to language learning, some comments were not written in English. Therefore, those comments were translated into English via Google Translate. As a result, a total of 1088 comments were gathered.

Text data pre-processing (e.g. case conversion, dividing sentences into words, and stopwords and punctuation removal) is done with the Python natural language toolkit (NLTK) (<https://www.nltk.org/>). It is worth noting that for the validity of the word cloud visualisation, we have also disabled some keywords that are relevant to this study (e.g. “ChatGPT”, “language”, “learning”, “AI”), as they affect the subsequent manual annotation of the comments.

Sentiment analysis and data visualisation

Sentence analysis and data visualisation were conducted to identify the digital affordance and challenges of using ChatGPT for self-learning. Typically, sentiment analysis refers to applying natural language processing, text mining, and other methods to identify the emotional tone of a message. All the comments were collected in this study using the “*textblob*” library in Python (<https://textblob.readthedocs.io/en/dev/>) to analyse the sentiment of the text. The “*textblob*” library is a lexicon-based approach that works by (1) breaking sentences into bags of words, (2) comparing these words to those in a sentiment polarity lexicon along with their associated semantic relations, and (3) computing a polarity score for the entire text. This approach can effectively classify the sentiment of a text as positive, negative or neutral. Due to its wide range of text-processing capabilities, such as phrase extraction, spelling correction, and sentiment analysis (Sarkar, 2019), it is commonly used by researchers to analyse the emotion in text data expressed by people on social media platforms, such as X, and others (Qi & Shabrina, 2023; Zahoor & Rohilla, 2020). However, it may struggle with sarcasm, negation, and multilingual nuances, and produce biased or inaccurate results due to ambiguous sentiment or contextual errors (Wankhade et al., 2022). Once the comment database is used for sentiment analysis, we obtain a database of YouTube comments expressing negative, positive, and neutral emotions.

Wordcloud is a tool for visualising word frequencies intuitively and aesthetically pleasingly. The “wordcloud” library in Python (https://amueller.github.io/word_cloud/index.html) was utilised to visualise the most frequent terms used in the dataset. While wordclouds are useful for visualising word frequency, they fail to capture the context in which words are used and tend to overemphasise frequency, ignoring the relative importance or relevance of words (Skeppstedt et al., 2024). In our study, to explore the languages most learned by language learners globally in the ChatGPT, Figure 2 demonstrates the results – English, Spanish, and Japanese are the primary languages learned.

Keywords collection

To explore the digital affordances of ChatGPT, the researchers adopted three strategies that collectively supported the development of the keyword coding system. First, based on initial digital affordances identified in the existing literature and word clouds of verbs and nouns in positive sentiment comments, the researchers identified the digital affordances for each of the 200 comments. Second, the comments were categorised by their digital affordances and compiled into a corpus for the YAKE keyword extraction tool, which was used to extract relevant keywords for each affordance. The YAKE library (<https://liaad.github.io/yake/>), an unsupervised keyword extraction algorithm, analyses the textual content of the comments and identifies keywords based on statistical attributes (e.g. word frequency, position in the text, and word-to-word relationships). Finally, the first and second authors extracted keywords based on the results generated by the YAKE package, and the remaining

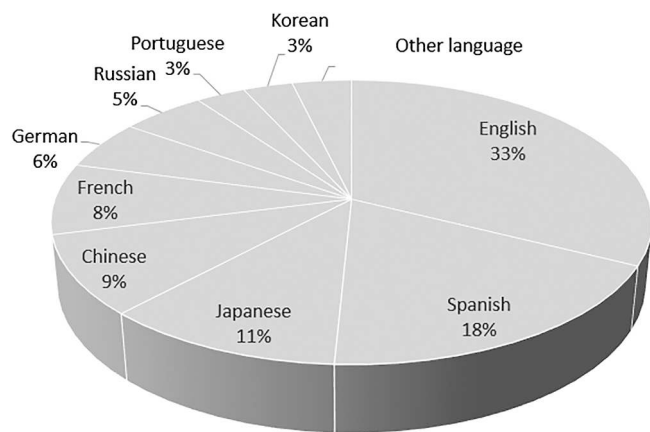


Figure 2. Percentage of languages.

888 comments were labelled with their corresponding digital affordances. The authors then jointly reviewed the keywords derived from these three strategies, and the final coding system is shown in Table 1.

Hierarchical regression

This study conducted sentiment analysis on all comments to obtain sentiment scores ranging from –1 to 1. The sentiment score for each comment is used to measure ChatGPT language learners’ preference level. The sentiment scores were classified as Negative (–1 to 0), Neutral (0), and Positive (0 to 1). Table 2 displays comments about different sentiment states.

Table 1. Digital affordances, definitions, code elaborations and examples.

Digital affordances	Definitions	Code elaborations (examples)	Comment examples
<i>Interactive activities with AI</i>			
Opportunities to practice language	Repeatedly use and apply the target language in simulated, conversational contexts.	use the language, practice, and language partners(chatbot)	"I'm really thrilled about this. Especially in countries where you cannot find any people to converse with you in the language you are learning."
Individualised feedback	Feedback tailored to the specific needs, addressing mistakes and guiding improvement.	corrections, mistakes, grammar rules, customisation, and specificity	"It corrects and explains mistakes I may have made in my comment ..."
Engagement and interaction	Activities that encourage learner engagement through immersive experiences and enhance the motivation of the learning process.	immersion, inspiration, interactivity, enjoy, and interest	"I immediately thought of the immersive experience ... I cannot wait to see this tech used in video games and other interactive frameworks."
<i>Informative activities with AI</i>			
Authentic input of language use	Content that reflects contextually appropriate examples of language usage.	stories, vocabulary, different levels of language standard and examples	"I tell it to type a story about a subject I want. For example, I told ChatGPT to write a story in Russian at an A1 level about a boy and his bike."
Real-time assistance on linguistic knowledge	Support for language-related queries, including translations and explanations, to help learners solve problems quickly.	always being available, translations and explanations	"It is helping me a lot with English expressions and translations."

Hierarchical regression is used to explore how different factors contribute to explaining changes in an outcome. The formula for hierarchical regression is as follows:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \acute{o}$$

where Y (sentiment score of each comment) is the dependent variable, X_1, X_2, X_3, X_4, X_5 are the predictor variables (opportunities to practice language, individualised feedback, engagement and interaction, authentic input of language use, and real-time assistance on linguistic), $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the coefficients, and ϵ represents the error term. In hierarchical regression, the model is built step-by-step by adding predictors, the sentiment score and digital affordances contained in each comment will be utilised as the dependent and independent variables, respectively. To differentiate the presence or absence of a comment's digital affordance, a binary code (0 for absence and 1 for presence) was employed, which means that one comment consists of five independent variables. Table 3 illustrates one example.

Recognising digital affordances' interactive and informative nature, we classified two corresponding models within the hierarchical framework. Model 1 incorporates interactive activities with ChatGPT, including opportunities for language practice, individualised feedback and engagement and interaction. In contrast, Model 2 includes informative activities such as authentic language input and real-time assistance with linguistic knowledge. Additionally, the residuals and fitted values of the hierarchical model were then utilised to create a scatter plot, exemplified in Figure 3, which demonstrates the desirable pattern of residuals randomly distributed around the horizontal zero line. This observation confirms the suitability of the model.

Findings

This study analysed all comments to obtain sentiment scores ranging from -1 to 1. The sentiment scores were classified as Negative (-1 to 0), Neutral (0), and Positive (0 to 1). The basic information for each video is shown in Table 4 below. The sentiment analysis of 1088 comments crawled from YouTube videos indicates that global language learners reported significantly more positive emotions (65.6%) than negative emotions (12.1%). This result can be interpreted as language learners' acknowledgement of the beneficial aspects of GenAI.

The digital affordances of generative AI

Following the data visualisation through word cloud analysis and thematic analysis, the qualitative data from this study has identified five principal digital affordances that potentially support language learners in their language learning endeavours when utilising GenAI (refer to Table 5). These affordances include (1) Opportunities to practice language, (2) Individualised feedback, (3) Engagement and interaction, (4) Authentic input of language use, and (5) Real-time assistance on linguistic knowledge.

Table 2. Comments with different sentiment scores.

Emotion level	Sentiment score	Comments examples
Positive	1	Great video! ChatGPT is mind blowing! It will revolutionise education.
	0.5	Seems like a great tool, but at the end of the day, I'm learning because I want to be able to speak with the Taiwanese people in my life, not an AI. So, I'll take a real person if I have the choice.
Natural	0	Will it also write language exams for us?
	0	Never underestimate the learner and individuality.
Negative	-1	ChatGPT is terrible for Cantonese.
	-0.35	It's not a good thing to do.

Table 3. Example of comments in a hierarchical regression model.

Example comment (sentiment score: 0.389)	Digital affordances	Code
ChatGPT is the end of language learning. The extra potential advance in AI will make us all polyglots even before 2030. Everyone will be able to communicate and practice language easily in 0time translation ...	Opportunities to practice language	1
	Individualised feedback	0
	Engagement and interaction	0
	Authentic input of language use	0
	Real-time assistance on linguistic knowledge	1

First, the “Opportunities to practice language” can be characterised by four sub-categories: (1) Opportunity as language partner, (2) Opportunity as tasks, activities, and exercises, (3) Practice English with Low cost and (4) Practice English at any time. Most global language learners reported that ChatGPT could serve as a partner for them to exercise their language, providing language learners with the opportunity to converse in the target language and customised oral activities, as one user reported:

I think that the main benefit of using ChatGPT for language learning is that you can have a conversation with it. You can simply talk to it in your target language, or you can even talk to it in your native language and tell it to respond in your target language, and it will.

Meanwhile, some commentators have argued that since language practice requires the appropriate environment and the correct instruction, they appreciate the use of GenAI to facilitate their language learning process, which helps them save time and money. For example, one user commented:

I’m really thrilled about this. Especially in countries where you cannot find any people to converse with you in the language you are learning.

The digital affordance of GenAI is characterised by its capacity to offer “individualised feedback” to language learners, including (1) Corrective feedback on the micro-level (e.g. grammar and vocabulary) and macro-level (e.g. outlines, structure, evidence), (2) Generate similar exercises, (3) Personalised dialogue/conversation in a friendly and less threatening way. The AI system’s ability to provide precise and tailored correction and feedback to support language learners in their language learning

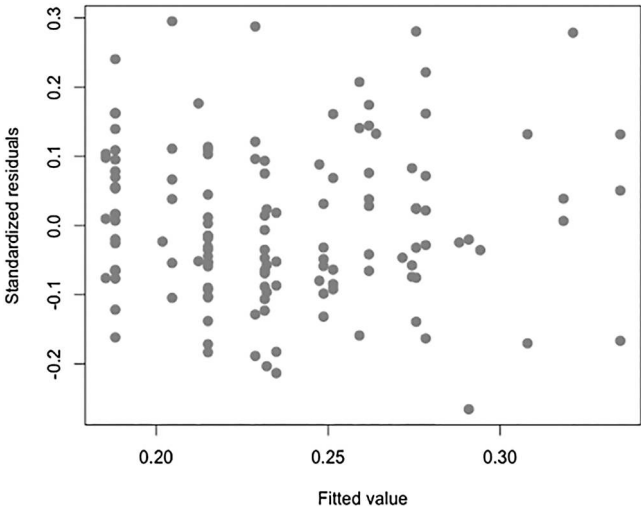


Figure 3. Scatter plot of fitted values and residuals.

Table 4. Descriptive statistics of comments and emotions by YouTube videos.

Video number	Number of viewers	Number of first-level comment	Positive emotions (%)	Neutral emotions (%)	Negative emotions (%)
1	16millions+	309	76.7	11.3	12.0
2	6.1millions+	109	61.5	24.7	13.8
3	5.9millions+	223	58.7	34.6	6.7
4	5.7millions+	116	61.2	28.5	10.3
5	1.6millions+	16	75.0	12.5	12.5
6	1.6millions+	36	66.7	5.5	27.8
7	1.5millions+	79	59.5	29.1	11.4
8	1.3millions+	62	64.5	21	14.5
9	1.1millions+	60	61.7	21.6	16.7
10	9000+	4	75.0	25	0.0
11	6000+	17	58.8	11.8	29.4
12	2000+	6	66.7	33.3	0.0
13	2000+	16	56.3	24.9	18.8
14	1000+	5	80.0	20	0.0
15	1000+	4	50.0	25	25.0
16	1000+	4	75.0	25	0.0
17	1000+	9	44.4	33.4	22.2
18	700+	11	54.5	36.4	9.1
19	400+	2	100.0	0	0.0
SUM	43.6millions+	1088	65.6%	22.3%	12.1%

Table 5. The identified digital affordances.

Digital affordances	Sub-categories	
Interactive activities with AI	Opportunities to practice language (114)	Opportunity as language partner (55)
		Opportunity as tasks, activities, and exercises (29)
	Individualised feedback (108)	Practice English with Low cost (16)
		Practice English at any time (14)
		Corrective feedback on the micro- (25) and macro level (29)
Informative activities with AI	Engagement and interaction (57)	Generate similar exercises: MCQ, Quiz, etc (39)
		Personalised conversation in a friendly way (15)
	Authentic input of language use (65)	Provide instruction, develop learning plans, and recommend learning strategies (7)
		Stimulating the user's creativity and broadening the learner's perception of learning: memorisation of vocabulary, critical thinking, etc (21)
		Motivate learning by affecting how learners feel: anxiety, happy, satisfied, confident, worry, etc (23)
		Provide interactive tools to facilitate classroom and group learning (5)
		Authentic topic/content (19)
		as linguistic assistance: vocabulary, sentences, phrases, etc (42)
		Input as native speakers (4)
		Real-time assistance in the Daily life – translation service during travelling (31)
	Real-time assistance on linguistic knowledge (77)	Translation and interpretation for academic research paper/ conference paper, academic debates. (27)
		Translation and interpretation of career-related emails, reports, and presentations (19)

endeavours. Furthermore, the AI function can provide personalised responses that cater to the individual needs of learners. One comment stated:

I often ask ChatGPT to create exercises for me on a given topic (QCM, perforated text, etc.). He sometimes explains the corrections he makes, which is very convenient.

According to some users, during their interactions with ChatGPT, they felt socially unburdened, and the chatbots appeared to be relatively patient and understanding:

It's something that's always willing to talk, doesn't judge your mistakes, and is eager to help you improve.

The “engagement and interaction” feature refers to (1) providing instruction for learning, developing learning plans, and recommending learning strategies, (2) stimulating the user’s creativity and broadening the learner’s perception of learning, (3) motivating learning by affecting how learners feel, and (4) providing interactive tools to facilitate classroom and group learning. Within these categories, most users responded to their comfort level of using ChatGPT, with many users expressing feelings of enjoyment, surprise, and anticipation when utilising GenAI for language learning. Thus, motivating them to engage in the language-learning process. For example, one user stated:

We don’t need to throw away our existing language learning methods, but with ChatGPT, we will have more choices, and learning languages will have more fun and imagination.

Furthermore, the sub-category “Authentic input of language use” refers to four types of actions: (1) Input as authentic topic/content, (2) Input as linguistic assistance, and (3) Input as native speakers. Firstly, language learners use AI to simulate conversations in scenarios such as hotel check-in when travelling, school, or job application interviews. For example, one user commented on his experience with ChatGPT:

It is cool chatting with ChatGPT in different languages too, and telling it to be a person in a particular scenario so that you can practice having conversations such as checking into a hotel, applying for a job, etc.

In the present study, participants expressed that Real-time assistance on linguistic knowledge primarily revolved around translation, expression, and query in different situations, such as daily life, academic work and professional life. Emphasising that accurate, timely and comprehensive response from the GenAI were important in users reporting positive emotions.

Relationship between digital affordances and learners’ preferences

Table 6 shows the averages and standard deviations of the five digital affordances regarding Authentic input of language use, Opportunities to practice language and Real-time assistance on linguistic knowledge (averaging between 0.224 and 0.228), appear to be more popularly operationalised than the other two categories: Engagement and interaction (average of 0.219) and Individualised feedback (average of 0.216). It shows that global language learners respond positively to real-life scenarios of language applications of GenAI. Furthermore, the least popular feedback categories of GenAI appear to be related to encouraging users to take a more active role in language learning, including customised use and facilitating conversations about language learning participation.

Table 6. Results of hierarchical regression.

Variables	Mean	SD	Model 1				Model 2			
			<i>B</i>	Std. Error	<i>t</i>	<i>p</i>	<i>B</i>	Std. Error	<i>t</i>	<i>p</i>
Intercept			0.330***	0.03	11.28	.000	0.335***	0.03	10.75	.000
<i>Interactive activities</i>										
Opportunities to practice language	0.227	0.114	−0.059*	0.03	−2.07	.040	−0.059*	0.03	−2.04	.043
Individualised feedback	0.216	0.104	−0.050*	0.02	−2.42	.017	−0.047*	0.02	−2.10	.038
Engagement and interaction	0.219	0.106	−0.028	0.02	−1.40	.161	−0.027	0.02	−1.32	.189
<i>Informative activities</i>										
Authentic input of language use	0.228	0.114					0.003	0.02	0.12	.908
Real-time assistance on linguistic knowledge	0.224	0.113					−0.017	0.02	−0.78	.439
R ² Change			0.176**				0.008			
Total R ²			0.094				0.098			
Adjusted R ²			0.073				0.063			
F value			F (3,129) = 4.455**, <i>p</i> = .005				F (5,127) = 2.764*, <i>p</i> = .021			

* *p* < .05; ** *p* < .01; *** *p* < .001.

Hierarchical regression tests indicated that language learners' sentiment levels were associated with digital affordances, which Model 1 (learners' interactive activities with AI) significantly predicted 17% of their variance ($F(3, 129) = 4.455, p = .005$) and Model 2 (append learners' informative activities with AI) significantly predicted 1% of their variance ($F(5, 127) = 2.764, p = .021$). Referring to Table 6, the digital affordances of interactive activities with AI, such as the opportunities for language practice, exhibit a negative impact in both Model 1 ($B = -0.059, p = .040$) and Model 2 ($B = -0.059, p = .043$). Similarly, individualised feedback negatively impacts both Model 1 ($B = -0.050, p = .017$) and Model 2 ($B = -0.047, p = .038$). However, the affordances of engagement, interaction, and informative activities with AI, such as authentic language input and real-time assistance with linguistic knowledge, do not reach statistical significance in either model. Engaging in AI-powered language learning and receiving individualised feedback leads to less positive emotions among language learners.

It can be interpreted from at least three perspectives. First, ChatGPT language users reported less enthusiasm for the exercises, tasks, and opportunities to practice, revise and test their language level with GenAI tools. It suggests that their engagement level with ChatGPT in interactive language learning activities is limited. For example, GenAI is a learning tool for learning language knowledge rather than identifying learning outcomes with external requirements. Secondly, the individualised feedback offered to ChatGPT language users is also less popular. It can be seen as a sign of the poor quality of ChatGPT offered feedback or ChatGPT users' limited feedback literacy in using the feedback to improve their language proficiency further. It may be because of recipient's inability to use it efficaciously, thus emphasising the significance of feedback literacy and its role in enhancing language skills. Thirdly, those digital affordances concerning language input may require more AI literacy from the user than simple, timely linguistic assistance, such as translation service or quick access to reading materials, especially when ChatGPT requires a lower level of involvement from the learners, such as real-time assistance.

Discussions

In summary, this sequential mixed method study revealed five distinct digital affordances: Opportunities for language practice, Individualised feedback, Authentic input in language usage, Real-time assistance in linguistic knowledge, and Engagement and interaction. Regarding the correlation between these digital affordances and the learning experiences of YouTube viewers engaging with ChatGPT, hierarchical regression tests indicated that only two factors significantly predicted language learners' less positive learning experience: Opportunities for language practice and Individualised feedback.

First, compared with previous language learning Chatbots, although ChatGPT has similar digital affordance, such as creating opportunities and individualised feedback, it has been reported to have a much more comprehensive range of affordance due to its powerful capacity to generate and respond to prompts naturally, such as *authentic input of language use* and *real-time assistance on linguistic knowledge*. Contrastingly, previous chatbots failed to provide authentic material in a conversational way due to insufficient training datasets in the early stage of developing AI systems. ChatGPT addresses this issue, as it can learn from its interactions with learners and generate more accurate and contextually appropriate responses based on received feedback (Ray, 2023), ChatGPT's real-time linguistic assistance offers significant benefits, such as real-time conversational chatbot, translation and expression services, and multilingual environments (Gill & Kaur, 2023). This capability highlights that ChatGPT can understand and generate diverse responses in multiple languages, enabling users to communicate more effectively and promptly.

Secondly, surprisingly, offering *opportunities to practice language* is linked to less satisfying learning experiences. Studies with traditional AI tools normally concluded a positive attitude towards new learning opportunities (Xiao et al., 2024; Yuan & Liu, 2025). Possible interpretations are as follows: (1) ChatGPT has limited communicative competence, as it cannot provide audio responses,

consequently hindering its effectiveness as a language partner, which restricts users' curiosity and willingness for further communication (Chen et al., 2025), (2) the responsibility of assigning exercises and quiz, which used to be solely held by teachers, is now shared with AI and students during interactions with AI (Hsu et al., 2023). This shift in responsibility may potentially decrease students' overall satisfaction with utilise AI technologies (Hew et al., 2022), and (3), students' limited feedback literacy may reduce learner satisfaction, which negatively impacts students' intrinsic motivation and ability to continuously engage with AI, looking for self-assessment opportunities, seeking assistance and asking for feedback (Chiu et al., 2023).

Thirdly, *individualised feedback* is also linked to ChatGPT users' less satisfactory learning experience, which is consistent with previous research on automated writing feedback. Specifically, these studies have highlighted several issues related to (1) useless, repetitive and inconvenient feedback generated by AI, such as overcorrection, cognitive overload, and limited metalinguistic explanation (Chen et al., 2024) and (2) insufficient feedback literacy of learners may leads to a passive experience with AI (Jiang, 2024), and feedback literacy refers to active seeking feedback, managing emotional responses to the feedback received, and taking appropriate actions based on that feedback.

Conclusions and limitations

This study makes several important contributions to the field of language learning with AI tools. First, it presents a large-scale investigation of learners' responses to ChatGPT in language learning, drawing on data from a diverse global sample through social media platforms, which has been underexplored in previous research. Second, it provides a comprehensive overview of five digital affordances of ChatGPT: opportunities for language practice, individualised feedback, engagement and interaction, authentic input in language usage, and real-time linguistic assistance. Third, it introduces an innovative sequential mixed-method design. It reveals that while opportunities for language practice and individualised feedback are valuable, they may not always lead to positive emotional learning experiences.

The current study has at least two limitations. First, the dataset's scope is limited; the sample data were exclusively collected from YouTube. Future studies could expand the scope by incorporating data from a broader range of social media platforms to enhance the generalisability of the findings. Second, the data collected in this study is constrained by time, and the long-term effects remain unexplored. Future research could address this limitation by extending the data collection period to assess long-term trends and ensure greater reliability.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by Macao Polytechnic University Grants (Grant ID: RP/FCA-08/2023) and Guangdong Basic and Applied Basic Research Foundation (2025A1515011744).

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