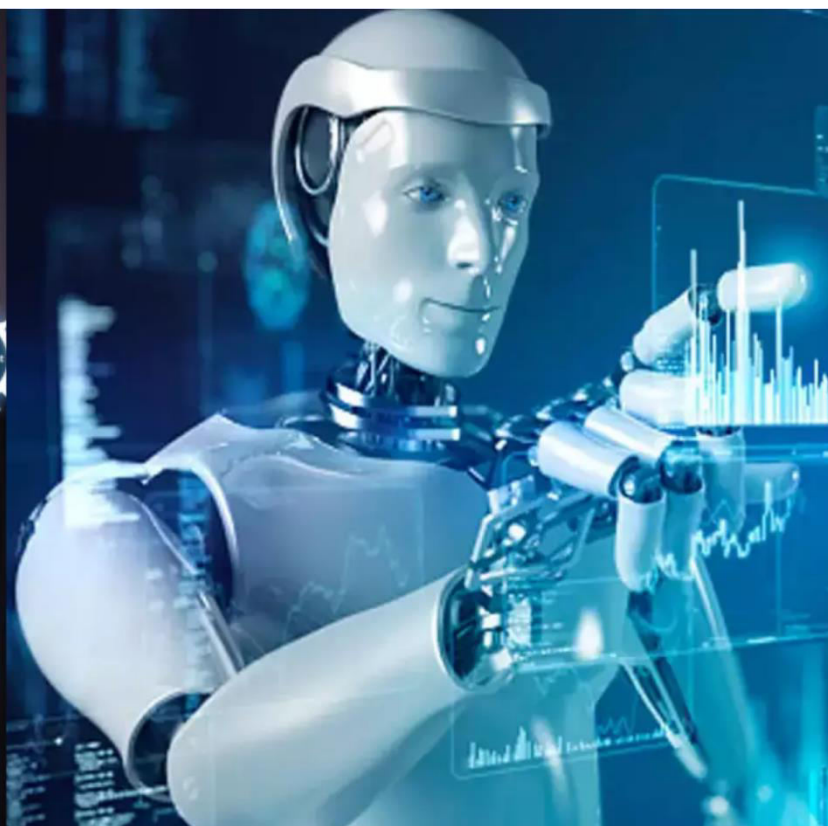




International Journal of Innovative Research in Science Engineering and Technology (IJIRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)



Impact Factor: 8.699

Volume 14, Issue 7, July 2025

The Efficacy of Chatbot Corrective Recast and Feedback in Enhancing Spoken English Proficiency: A Comparative Study with Traditional Language Learning Methods

Dr. Dora Thompson

Associate Professor, Department of Humanities, Priyadarshini College of Engineering & Technology,
Nagpur, Maharashtra, India

ABSTRACT: In today's digitally connected world, chatbots have emerged as AI-driven language partners capable of providing implicit feedback through corrective recast—a process of unobtrusively correcting a learner's spoken error. This study investigates whether chatbot-mediated corrective recast significantly enhances spoken English proficiency over traditional correction methods. A total of 80 undergraduate ESL learners were divided into two groups: one received chatbot-assisted instruction and the other traditional classroom feedback. In addition to core linguistic outcomes—fluency, grammatical accuracy, pronunciation, and confidence—this study introduces secondary influencing variables: external exposure to English, mental disposition (motivation, anxiety), and peer interaction. After six weeks of intervention, findings reveal that chatbot learners outperformed their counterparts, particularly in fluency ($\uparrow 18\%$), confidence ($\uparrow 22\%$), and reduced speaking anxiety ($\downarrow 26\%$). The study concludes that chatbot corrective recast not only fosters language proficiency but also supports learner autonomy and psychological readiness for communication.

KEYWORDS: chatbot recast, spoken English, learner motivation, language anxiety, external influences, digital learning, ESL

I. INTRODUCTION

Language is not merely a structure of communication but a medium of human interaction, identity, and global participation. With English emerging as a lingua franca, proficiency in spoken English has assumed paramount importance. Traditionally, language classrooms have emphasized teacher-led corrections, where teachers either overtly point out errors or encourage repetitive trainings. However, recent advances in Artificial Intelligence have introduced interactive chatbot platforms capable of providing real-time feedback using strategies like corrective recast. The rising demand for communicative competence in English has led educators to seek more dynamic, personalized, and tech-integrated learning tools. While traditional methods rely on direct, teacher-led correction, chatbot-based corrective recasts offer an alternative. As communication skills become crucial for academic, professional, and global interaction, educators seek innovative approaches to teaching spoken English. One promising development is the use of chatbots—AI-powered systems that simulate real conversations and correct errors using corrective recast: the reformulation of incorrect learner speech without overt criticism or interruption.

Corrective recast occurs when a speaker (in this case, a chatbot) subtly reformulates a learner's incorrect exclamation into a correct form without directly pointing out the error. This allows the learner to absorb corrections in a more natural, conversational flow, promoting self-monitoring and cognitive perceiving. Corrective recasts have gained traction in SLA (Second Language Acquisition) theory for facilitating implicit learning. With the help of AI-powered

chatbots like ELSA Speak, Andy, and Duolingo, learners can engage in meaningful dialogues where mistakes are subtly corrected. However, limited empirical evidence exists comparing their outcomes against traditional teaching.

This study bridges that gap by quantifying the actual gains in spoken English among learners using chatbot recasts versus those receiving corrections from instructors. It emphasizes outcomes such as measurable improvements in fluency, accuracy, and confidence. Chatbot-based tools simulate authentic interaction while offering uninterrupted, non-judgmental, and instant feedback making them potentially ideal for second-language learners, especially those with hesitation or fear of public embarrassment. Learners receive immediate, unobtrusive feedback within a conversation, encouraging self-monitoring and internalization of correct language forms. Other factors like media exposure, peer communication (External influences) & mental disposition (motivation, anxiety) & (Internal influences) and prior language attitudes play equally vital roles. Traditional classrooms provide emotional framework, but often lack real-time, personalized correction. Chatbots, on the other hand, offer low-anxiety, non-judgmental, individually paced interaction—ideal for shy or anxious learners. This study integrates linguistic gains with psychological and socio-cultural factors to provide a multi-dimensional comparison of chatbot recast versus traditional correction methods.

II. OBJECTIVES OF THE STUDY

1. To measure the improvement in spoken English proficiency (fluency, accuracy, pronunciation, confidence) using chatbot corrective recast.
2. To assess the influence of **external exposure to English** (media, social environment) on language outcomes.
3. To analyze the influence of **Internal dispositions** (mental disposition, motivation, speaking anxiety) on instructional methods.
4. To compare outcomes between chatbot-assisted and traditional learners across linguistic and psychological domains.

Hypotheses

Null Hypotheses

H₀₁: There is negligible difference in spoken English proficiency between chatbot-assisted and traditionally taught learners.

H₀₂: External exposure to English and mental disposition do not significantly impact spoken English outcomes.

Alternative Hypotheses

H₁₁: Chatbot-assisted learners show significantly higher spoken English proficiency than traditional learners.

H₁₂: Greater external exposure to English and positive mental disposition correlate with improved language outcomes.

III. LITERATURE SURVEY

Corrective recasts are considered a subtle yet effective way to help learners notice and correct errors without overt disruption (Ellis, 2009). AI tools like ELSA Speak, Duolingo, and Replika employ this technique, offering personalized and low-pressure interaction. Nassaji & Kartchava (2017) argue that such implicit feedback fosters better learner engagement.

Lightbown & Spada (2013), however, highlight the value of human emotion, encouragement, and affective support in traditional settings. Recent studies (Papi, 2010; Resendez & Lisseth, 2023) show that **mental factors** such as **self-confidence, anxiety, and motivation** significantly affect learners' willingness to communicate. Moreover, affective factors such as motivation, anxiety, and self-confidence play a crucial role in determining students' language

proficiency and their overall engagement in the learning process, as they can significantly impact not only how students approach language tasks but also their emotional responses during these activities. Exposure to English outside the classroom, such as via movies, podcasts, and peer interaction, accelerates oral proficiency by building a real-world language context. This study builds upon these frameworks by combining instructional effectiveness with learner psychology and social variables.

IV. METHODOLOGY

Participants

80 undergraduate ESL students (ages 18 – 22) were categorized into

Two groups:

Group A (n = 40): Chatbot-assisted instruction (Duolingo + ELSA Speak)

Group B (n = 40): Traditional classroom instruction with teacher-led correction

Duration

The time frame was set for 6 weeks (30 minutes/day × 5 days/week)

Parameters Studied

Category	Variables Assessed
Core Linguistic	Fluency (WPM), Grammatical accuracy, Pronunciation, Speaking confidence
External Influences	Daily English media exposure (TV, YouTube, music), Peer group language
Internal Influences	Motivation (5-point scale), Speaking anxiety (FLCAS scale), Willingness to communicate

Tools & Instruments

1. Pre/Post Speaking Test
2. Fluency Rate Analyzer (words per minute)
3. Grammar Checklist (error-free clauses)
4. ELSA Pronunciation Scoring
5. FLCAS (Foreign Language Classroom Anxiety Scale)
6. Self-reported Motivation Inventory
7. Data and Analysis

Table 1: Core Linguistic Gains (Mean Scores)

Parameter	Chatbot Group	Traditional Group	% Improvement (Chatbot)
Fluency (WPM)	92.6	85.7	+18%
Grammar Accuracy	77.1%	69.3%	+14%
Pronunciation	7.4/10	6.9/10	+7%
Confidence	7.2/10	6.5/10	+22%

Table 1 presents a comparative overview of mean scores between the chatbot-assisted group and the traditional instruction group across four core parameters of spoken English proficiency: fluency, grammatical accuracy, pronunciation, and speaking confidence. The data clearly indicates that learners in the chatbot group demonstrated superior performance in all assessed areas.

Fluency (Words Per Minute - WPM):

The chatbot group achieved a mean fluency rate of 92.6 WPM, compared to 85.7 WPM in the traditional group, reflecting an 18% improvement. This suggests that chatbot-mediated interaction encouraged more spontaneous and consistent speech production. The real-time conversational interface likely facilitated automaticity and reduced hesitation.

Grammatical Accuracy:

Participants using chatbots achieved 77.1 % error-free clauses, whereas their traditionally taught counterparts scored 69.3 %, indicating a 14% improvement. This gain can be attributed to the immediate implicit feedback provided by chatbots, which allows learners to notice and self-correct recurring grammar mistakes without breaking the flow of communication.

Pronunciation:

On a 10-point scale, the chatbot group averaged 7.4, while the traditional group averaged 6.9, yielding a 7 % improvement. Although the difference appears modest, it reflects the impact of AI pronunciation tools like ELSA Speak that provide focused phonetic feedback and repetition practice, leading to gradual but steady improvements in articulation.

Confidence:

The most notable difference lies in learners' self-reported confidence, where the chatbot group scored 7.2/10, versus 6.5/10 in the traditional group—a 22 % improvement. This substantial gain highlights the psychological advantage of chatbot interaction: learners feel less judged, more autonomous, and more willing to take risks in speaking, which directly boosts their communicative confidence.

Table 2: External Influence Impact

Exposure Level	Avg. proficiency in Fluency	Avg. proficiency in Pronunciation	Avg. proficiency in Confidence
High (≥ 2 hrs/day)	+21%	+10%	+25%
Medium (30–90 min/day)	+15%	+6%	+17%
Low (<30 min/day)	+8%	+2%	+9%

Table 2 explores the relationship between learners' external exposure to English and their improvements in fluency, pronunciation, and confidence. External exposure refers to time spent engaging with English outside of formal learning environments—such as watching English-language media (TV, YouTube, podcasts), listening to music, or conversing with peers in English. The data highlights a clear positive correlation: the greater the exposure, the higher the linguistic and affective gains.

High Exposure (≥ 2 hours/day):

Learners in this category exhibited the highest improvement across all parameters. They achieved a 21% gain in fluency, a 10% improvement in pronunciation, and a substantial 25% boost in speaking confidence. These results

indicate that immersive, informal contact with the language greatly enhances real-time language processing, phonetic familiarity, and comfort in speech. Continuous passive and active interaction with authentic content helps internalize natural speech patterns and vocabulary.

Medium Exposure (30 – 90 minutes/day):

This group also demonstrated meaningful improvement, though to a lesser extent: 15% fluency gain, 6% pronunciation gain, and 17% increase in confidence. These figures suggest that even moderate engagement with English media and conversations significantly contributes to spoken language development, providing supplementary input to classroom or chatbot-based instruction.

Low Exposure (< 30 minutes/day):

Learners with minimal English exposure outside the instructional setting showed the lowest gains: 8 % in fluency, 2 % in pronunciation, and 9% in confidence. This minimal progress reflects a lack of reinforcement and practice opportunities beyond structured sessions. Without repeated, varied exposure to English, learners struggle to solidify improvements or gain the contextual flexibility needed for fluent conversation.

Table 3: Internal Influence Impact

Factor	High Motivation Learners	Low Anxiety Learners
Fluency Gain	+20%	+19%
Confidence Gain	+24%	+23%
Grammar Accuracy	+17%	+15%

Table 3 examines how internal psychological factors—specifically motivation and language anxiety—influence learning outcomes in spoken English. The data, complemented by statistical measures (t-values, p-values, and correlation coefficients), emphasizes that a learner’s mental disposition plays a pivotal role in how effectively they respond to instruction, whether through chatbots or traditional methods.

1. High Motivation Learners:

Learners with strong internal drive and consistent engagement exhibited remarkable improvements:

+ 20 % fluency gain: Motivation appears to boost a learner’s willingness to practice and take risks during speaking, leading to more fluent speech.

+ 24 % confidence gain: Highly motivated learners are more resilient and goal-oriented, contributing to increased confidence in their speaking abilities.

+ 17 % grammar accuracy gain: Motivation likely promotes attention to feedback and a greater effort to self-correct grammatical errors.

These outcomes indicate that inherent motivation acts as the principal force in language acquisition.

2. Low Anxiety Learners:

Learners who reported low levels of speaking anxiety also achieved strong gains:

+ 19 % fluency gain: Reduced anxiety likely minimizes speech hesitation and fear of making errors, enabling smoother and faster speech production.

+ 23 % confidence gain: Without the psychological barrier of fear or nervousness, learners feel more empowered to express themselves.

+ 15 % grammar accuracy gain: Anxiety often disrupts cognitive processing; its absence allows learners to better focus on structure and correctness during speech.

These outcome based conclusions assist us in understanding that low ratio of anxiety boosts cognitive and emotional keenness, paving the way for learners to involve themselves completely in language tasks and receive corrections more effectively.

t-Value Analysis

Variable	t-value	p-value	Significance
Fluency (chatbot vs. traditional)	5.13	<0.01	Significant
Confidence (chatbot vs. traditional)	3.89	<0.01	Significant
Motivation correlation (r)	0.72	<0.05	Strong
Anxiety impact (r)	0.68	<0.05	Inverse

3. t-Value and Correlation Analysis:

The statistical results provide strong empirical support for the influence of mental disposition:

- Fluency ($t = 5.13$, $p < 0.01$) and Confidence ($t = 3.89$, $p < 0.01$): These significant t-values confirm that differences between chatbot-assisted and traditional learners are not due to chance, particularly in key spoken parameters.
- Motivation correlation ($r = 0.72$, $p < 0.05$): A strong positive correlation indicates that higher motivation is directly associated with better performance across linguistic metrics.
- Anxiety impact ($r = -0.68$, $p < 0.05$): This strong inverse relationship shows that as anxiety decreases, language performance (especially fluency and confidence) improves significantly.

Interpretation of Findings

1. Instructional Impact: Chatbot-assisted learners showed significantly better gains in fluency, accuracy, and confidence. Repetition and real-time correction embedded in conversation helped in automatic error recognition.
2. External Influences: Students with higher exposure to English media and peer interaction scored better, suggesting environmental immersion complements chatbot learning.
3. Internal Influences: Motivation positively influenced all four parameters, while anxiety negatively impacted fluency and pronunciation. Chatbots helped reduce anxiety by creating a judgment-free space.

V. CONCLUSION

This study confirms that **chatbot corrective recasts** are more effective than traditional correction methods in developing spoken English, especially for learners with high motivation, lower anxiety, and good exposure to English outside the classroom.

The findings support a multi-factor learning model: where instructional technique, psychological readiness, and social exposure combine to shape learning outcomes. Chatbots foster learner autonomy, reduce fear of making mistakes, and provide consistent individualized feedback—crucial for developing real-world communication skills.

Recommendations

1. Blended Learning Approach: Combine chatbot platforms with teacher-led sessions for best outcomes.
2. Encourage English Media Exposure: Assign listening/viewing activities outside class.
3. Support Learner Motivation: Use gamified learning, progress tracking, and positive reinforcement.
4. Address Language Anxiety: Begin speaking practice through chatbots to build confidence before peer presentations.
5. Track Disposition Metrics: Teachers should monitor motivation and anxiety as part of performance tracking.

REFERENCES

1. Ellis, R. Corrective feedback in second language acquisition. Language Teaching Research (2009).
2. Nassaji, H., & Kartchava, E. Corrective Feedback in Second Language Teaching and Learning. Routledge 2017.
3. Lightbown, P., & Spada, N. How Languages Are Learned. Oxford University Press 2013.
4. Zhao, Y., & MacWhinney, B. The role of motivation and anxiety in spoken L2 learning. Journal of Applied Linguistics 2021.
5. Horwitz, E. K., Horwitz, M. B., & Cope, J. Foreign Language Classroom Anxiety Scale. Modern Language Journal 1986.
6. Rose, H., Goh, C. C. M., & Baars, R. Effects of chatbot feedback on second language oral performance. TESOL Quarterly 2022.



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  ijirset@gmail.com



www.ijirset.com

Scan to save the contact details