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To Look from Another Window in Education: Artificial Intelligence Assisted Language Learning and Its Reflections on Academic Demotivation, Foreign Language Learning Anxiety and Autonomy

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Abstract

In the age of technology, old methods and approaches are no longer effective in teaching English to EFL learners. Nowadays, EFL learners benefit significantly from using artificial intelligence (AI) as a branch of technology in their English learning. Considering the effectiveness of AI, the current research intends to scrutinize its impacts on EFL learners' academic demotivation, foreign language learning anxiety (FLLA), and autonomy. To meet this objective, 83 students majoring in English from Prince Sattam Bin Abdulaziz University in Alkharj, Saudi Arabia, were selected and divided into two groups: the EG (41) and the CG (42). The groups were administered three scales as the pretests to measure their academic demotivation, FLLA, and autonomy before receiving the intervention. As the independent variable of this study is AI, the EG received the treatment using ChatGPT while the CG was trained in their course materials without integrating any AI-based learning instruments. At the termination of a 16-session treatment, the pretests were administered again as the post-tests to assess the effectiveness of the two instructions on the EG and CG participants' academic demotivation, FLLA, and autonomy. The results gained via ANCOVA and independent samples t-tests proved a meaningful difference among all three post-tests favoring the EG. Besides, the findings depicted that using ChatGPT as an AI-mediated learning tool reduced Saudi Arabian EFL learners' demotivation and FLLA while enhancing their autonomy. Based on the results, the researcher concluded that ChatGPT should support learning, not replace human interactions.

Keywords: Academic Demotivation, Autonomy, Artificial Intelligence, Foreign Language Learning Anxiety, Technology

Introduction

In education, AI is a hot topic in technology. AI is currently presented as a novel approach to teaching and learning in various settings. AI has encountered several challenges in education since educational institutions resist technological advancements. These days, it's inevitable that AI will start to be viewed as a tool for improving learning outcomes and customization. It is now thought that AI technologies are created to guarantee that everyone has access to the area of education since they give everyone, in general, a chance to educate themselves. In schools worldwide, embodied social robots

and AI software are utilized as peer learning experts, instructors' assistants, and teachers (Vasagar et al., 2017).

Furthermore, AI can both personalize and improve collaborative learning in a variety of ways. It is evident from how it improves the professional environment for teachers to work with a greater number of struggling students. A new curriculum for a framework based on digital and AI is now publicly available. It is strongly advised that new skills be acquired to generate digital capabilities in the setting of a society that has experienced AI in the future. Some of these talents include software-based hardware, information and data literacy, teamwork and communication, digital content production, security, problem-solving abilities, and career-related competencies (Audrin et al., 2024; Namaziandost & Rezai, 2024).

ChatGPT is a specific AI model. Because ChatGPT has been extensively trained on various textual sources, including books, articles, and websites, it possesses a comprehensive understanding of natural language. Consequently, it could offer responses that align with user cues and are contextually suitable (Radford et al., 2018). Large text and conversational data sets have been used to train ChatGPT, enabling it to recognize suitable replies and natural language patterns (Greyling, 2022). Known as "primary prompt engineering" (Greyling, 2022), this training procedure helps ChatGPT generate replies that adhere to natural language patterns. Combining supervised fine-tuning, reinforcement learning, and conversational prompt injection approaches helps ChatGPT perform better on specific tasks (Lee et al., 2018; Greyling, 2022). A natural language processing (NLP) approach called supervised fine-tuning explicitly trains an already-existing pre-trained model for a particular task or domain. For example, ChatGPT improves response generation for activities like answering inquiries and having seamless conversations (Lee et al., 2018). ChatGPT uses supervised fine-tuning and conversational prompt injection to continuously enhance the caliber of chatbot conversations. Conversational cues are included in the input data to control a machine-learning model's response (Salam, 2023). When signals from a particular debate are added to provide additional information, ChatGPT learns specifics and improves its ability to provide pertinent and interesting responses (Nguyen, 2023).

ChatGPT can reduce language learners' demotivation. Dörnyei (2001) used the term "demotivation" to describe this progressive lack of motivation. Scholars now concentrate on demotivation since studying it might lead to a better knowledge of overcoming it (Adara & Najmudin, 2020). Analyzing the origins of demotivation becomes vital before it significantly influences the learning process and outcomes, as EFL learners encounter various problems that might impact their learning process and outcomes (Jahedizadeh et al., 2016). These elements highlight some of the motivations behind the study of demotivation. It is crucial to look into demotivation for several reasons. Studies that look particularly at demotivation are rare (Lucas et al., 2016) and understudied (Chen, 2013), in contrast to studies that look into motivation. That does not imply, however, that demotivation is not studied as much as motivation. Many scholars

have examined demotivation. The idea that studying demotivation may aid teachers in overcoming demotivation among students from diverse educational environments and support learners in efficiently acquiring the target language may be the source of the demand for demotivation research (Kikuchi, 2011). Furthermore, understanding demotivation should help academics better grasp different motivation theories (Sakai & Kikuchi, 2009). The abovementioned ideas highlight how crucial it is to examine demotivation in all EFL teaching and learning environments.

Another factor that the use of ChatGPT can lower is anxiety. An additional psychological component influencing L2 learners' performance is anxiety. It is a psychological term typically understood as a sense of unease, a vague fear only tangentially related to things (Dong et al., 2022). It negatively impacts L2 learning, as L2 learners intuitively feel (Horwitz et al., 2017). Three types of anxiety are identified by Brown (2000): situation-specific anxiety, state anxiety, and trait anxiety. The term "trait anxiety" describes pupils' persistent emotions of anxiety in a variety of contexts as well as their generalized anxiety. State anxiety is a relatively fixed disposition that makes people perceive a variety of situational circumstances as inherently dangerous (Brown, 2000). State anxiety is the term used to describe the tension and panic that second language learners feel when faced with danger. It is a transient form of anxiousness brought on by a trigger. Students who experience anxiety in specific situations are said to have situation-specific anxiety (Dong et al., 2022).

The impact of ChatGPT on language learners' independent learning has become one of the hot spots of research. It is challenging to develop learner autonomy (LA) in language learning since it requires a change in the role of the teacher to that of the student. According to Holec (1981), LA is the capacity to direct one's education. Furthermore, the readiness to take control of one's learning to further one's goals and requirements is a defining characteristic of LA. Noting that this ability must be developed organically or via formal education, methodically and intentionally, as it is not innate (Fathi et al., 2023). In foreign language education, LApertains constructs control and decision-making mechanisms alongside the strategies and tactics employed to attain the targeted language proficiency (Benson, 2007). LAis take the initiative to make informed decisions by attempting to understand themselves rather than acting irrationally and having total freedom (Zoghi & Dehghan 2012). In an autonomous learning environment, the teacher acts as an instructional guide to help students learn better because they learn best when they take ownership of their chosen content (Scharle & Szabo, 2000). The phases of developing LA require a process to improve students' awareness, modify their attitudes, create semi-structured activities, or shift the function of teachers (Karakış, 2020).

The importance of the variables of the study was reported, and three objectives were followed. First, the effects of ChatGPT as an AI tool on Saudi Arabian EFL learners' academic demotivation were examined. Second, the impacts of ChatGPT on the FLLA of Saudi Arabian EFL learners were inspected. Third, this research scrutinized the

influences of ChatGPT on Saudi Arabian EFL learners' autonomy. In line with the objectives, three questions were raised:

RQ1. Does AI (ChatGPT) integration in EFL classes reduce Saudi Arabian EFL learners' academic demotivation?

RQ2. Does AI (ChatGPT) integration in EFL classes decrease Saudi Arabian EFL learners' FLLA?

RQ3. Does AI (ChatGPT) integration in EFL classes promote Saudi Arabian EFL learners' autonomy?

Theoretical Literature

The definition and perception of AI vary in modern literature. One common perspective sees AI as a form of computational creativity reflecting technological advancements (Wingström et al., 2022). Similarly, Karsenti (2019) furthers this idea by stressing that AI involves building intelligent computers that can carry out activities like the human brain. Because of this, AI is sometimes referred to as machine intelligence (Mehrotra, 2019). AI may mimic human-like behaviors and cognitive processes (Joshi, 2019; Campesato, 2020). Kaur and Gill (2019), who assert that AI is a digital project aimed at acquiring human-level intellect through various computerized technologies, further support this viewpoint. According to Baker and Smith (2019), AI is commonly defined as a branch of computer science that encompasses computer systems and computerized devices that carry out cognitive tasks that are analogous to those carried out by human brains.

Thus, integrating AI into education opens up new possibilities, issues, and challenges for instructional strategies (Ouyang & Jiao, 2022). Notably, several studies have examined the application of AI to language instruction and learning. The efficacy of the Intelligent Tutoring System, an AI-created tool, in grammar classes was examined by Ghali et al. (2018). The study found that by offering quick feedback on students' responses and individualized instruction based on student performance data, this application helped students learn grammar better. Similarly, Dewi et al. (2021) examined well-known AI-based services like Grammarly, Duolingo, and Google Translate to validate the use of AI in educational settings. According to the study, AI may positively impact English language learning and should be included in English language training to improve student performance.

Fitria (2021) recommended adopting Grammarly, an AI-powered tool, to help students write better. The research's conclusions indicate that the tool helped students evaluate their written work, identify issues, and offer suggestions for language choices, grammar, punctuation, style, and tone. Grammarly was, therefore, perceived as a virtual assistant that helped pupils hone their writing abilities (Karyuatry, 2018). Additionally, Toncic (2020) proposed that AI grammar checkers were highly beneficial to teachers because they freed up their time to mark students' papers more efficiently, allowing them to devote more time to providing insightful feedback on the structure and content of the paper. Chaudhry and Kazim (2022) summarized earlier research findings regarding the

use of AI in education, highlighting the technology's critical role in individualized learning for students, reducing teacher workloads, and transforming the assessment process.

ChatGPT is a form of generative AI. The possible advantages of ChatGPT for language learning have been examined in scholarly research. According to Shahriar and Hayawi (2023), ChatGPT is a valuable tool for language teaching and learning as it has a broad vocabulary and can produce text that closely mimics human conversation on various themes. According to Kasneci et al. (2023), ChatGPT is beneficial for helping college students with their writing and research projects and for fostering the growth of their critical thinking and problem-solving abilities. The authors claim that using a broad language model may provide students with document summaries and outlines, which enhances their comprehension of technical terms and teaches them how to organize their ideas for writing. Zhai (2022) agreed and said that ChatGPT helps scholars create correct, methodical, logical, and educational writings. To assist students in becoming better writers, ChatGPT may also provide comments on their work (Javaid et al., 2023).

George and George (2023) expounded on the benefits of ChatGPT for language acquisition, stating that it may be utilized to create interactive conversational agents that mimic real-world conversations and aid students in improving their speaking and listening skills. Using broad language models, ChatGPT is a helpful conversational partner that enhances students' language practice (Tack & Piech, 2022). Academic circles have debated the use of ChatGPT in language training. Research by Baskara and Mukarto (2023) showed how helpful ChatGPT is in reducing instructors' workloads. The authors stressed ChatGPT's value in helping teachers plan lessons, create educational resources, and participate in class activities.

According to Kasneci et al. (2023), who backed up this assertion, ChatGPT can help teachers save time and effort by providing personalized materials and feedback, freeing them to focus on other essential aspects of teaching, like leading captivating and exciting lessons. Zhai (2023) affirmed the significance of ChatGPT in evaluating student performance. According to him, pupils might receive automated feedback and grading from the application and assistance with editing and proofreading their written work. This assertion was supported by Moore et al.'s (2022) study, which demonstrated how ChatGPT may help teachers analyze students' replies. According to Rudolph et al. (2023), ChatGPT is a valuable tool for assessing and evaluating student performance. It may be used to create tasks, quizzes, and assignments, mark student work, and make critical suggestions for specific students.

Using technology tools such as ChatGPT can develop autonomous learning among EFL learners. Since most L2 or EFL learners are adventurous and tend to become independent, LA is sometimes misunderstood with self-regulation or self-efficacy (Nakata, 2016). LA is a sign of maturity, motivation, and adaptability. According to Hardy-Gould (2013), autonomy is the capacity of a student to determine his learning speed and to accept accountability for what, when, and how they learn. Researchers

Agustina (2017) and Ahsanu (2017) examined the function of LA in English language acquisition and discovered that it enhanced students' language proficiency. Benson and Voller's (2014) theory is reflected in these findings, which postulate that learner autonomy is the innate capacity of learners, which is developed and evolved by teachers by implementing a relevant curriculum.

According to Ding and Shen (2019), LA increased students' general levels of motivation, which helped them become proficient in the language. Furthermore, they felt better about themselves, which enabled them to participate in self-evaluation activities with greater vigor and positivity. These findings align with those of Dafei (2007), who investigated the connection between LA and English competency among Chinese teacher college non-majors. The study discovered a strong and favorable correlation between English competency and LA. Qingzhao (2011) reaffirmed in a distinctive way that language acquisition requires LA even with highly qualified and talented teachers. As a result, LA is crucial to language acquisition. Only when EFL learners are both internally and extrinsically motivated can LA have any real value.

ChatGPT has the potential to make language learning more motivational. Low motivation has been defined as demotivation, which is associated with shifts in motivation; this idea is not a phenomenon in itself (Trang & Baldauf, 2007). Furthermore, demotivation may be defined as the negative aspect of motivation, according to Dörnyei and Ushioda (2011). It is related to certain external factors that harm or lessen the motivating component of a behavioral intention or an ongoing activity. Some studies disagree with Dörnyei and Ushioda's concept, including Sakai and Kikuchi (2009). They contend that such a definition must be broader to account for external (such as classes, professors, textbooks, etc.) and internal (such as poor self-confidence, negative attitude, etc.) elements. Trang and Baldauf (2007) claim that demotivation harms students and prevents them from achieving the intended learning objectives. Results from earlier studies on motivation and demotivation suggest that demotivation is a significant factor in the learning process (Badrkoohi, 2018; Han & Mahzoun, 2017; Sun, 2018; Li & Zhou, 2017).

In line with this pattern, Song (2005) looked into motivation and demotivation and discovered that demotivation might have a variety of causes. Teachers' participation has shown to be particularly significant in that process. Chang and Cho (2003) investigated the elements that lead to demotivation in Taiwanese high school students' English language learning.

Eight elements were identified as the drivers of demotivation: learning challenges, risks to one's self-worth, dull instruction, a poor rapport between the instructor and the students, consequences, general worry, anxiety specific to a language, a lack of self-determination, and poor classroom management. Moreover, Falout and Maruyama (2004) looked at the demotivating elements of EFL learning and how they related to demotivating situations. They discovered that whereas high-proficiency learners tolerated

the demotivating events, low-proficiency learners were less likely to exert control over their emotional states.

In a different research, Kim et al. (2014) looked at demotivational and motivating characteristics among EFL students enrolled in a long-term education program in South Korea. The ideal L2-self-perception showed a substantial link with demotivational variables, and they identified a positive correlation between motivational and demotivational components. The following elements were found to be contributing factors to demotivation in Muhonen's (2004) investigation: (a) the instructor, (b) the course materials, (c) learner characteristics, (d) the learning environment, and (e) the participants' attitude toward English. In contrast to other research, Sakai and Kikuchi's (2009) findings did not indicate that teachers were the most frequent source of demotivation. Nonetheless, the findings demonstrated that exam scores and learning materials were the primary factors contributing to Japanese learners' demotivation.

ChatGPT can alleviate students' level of anxiety. According to Horwitz (1986), FLA is a particular type of tension, worry, or trepidation that occurs in FL classrooms. Researchers studying language have examined anxiety and how it relates to motivation in learning environments (Yukselir & Ozar, 2022). A learner's emotional filter and FLA are strongly related (Yashima et al., 2009). According to Dörnyei (2005), it's normal for pupils to experience some anxiety if they cannot finish a foreign language learning activity. According to Tran and Moni (2015), anxiety can have a facilitating impact on students, allowing them to perform at their best. Higher anxiety levels, however, have been shown to have a crippling effect on the creation of foreign languages (Lucas et al., 2011). FLA is caused by a variety of variables, including test anxiety, communication anxiety, perfectionism (Gregersen & Horwitz, 2002), and fear of receiving a poor grade from peers and the teacher.

For instance, speaking in front of their peers appears to have a significant positive impact on FLA for many students (Yukselir & Ozar, 2022). FLA is believed to significantly hinder FL learning (Horwitz et al., 2017). Students may respond to FLA in several ways, including delaying finishing work and being reluctant to speak in class (Yukselir & Ozar, 2022). There have allegedly been some things that help to lower anxiety in FL classrooms. When Sağlamel and Kayaoğlu (2013) looked into potential causes of language anxiety, they discovered that students' fluency and perfectionism had a detrimental impact on their FLA in speaking classes.

Empirical Literature

The use of AI in language instruction has been the subject of several earlier research. Hou (2020) asserts that the use of AI has significantly impacted language instructors, students' learning preferences, modes and approaches of instruction, and assessment models. In the age of AI, educational establishments need to maintain themselves financially and technically, enhance the digital capabilities of their faculty, and adjust to the speed of instruction (Pikhart, 2020). By analyzing pertinent papers

released between 1990 and 2020, Liang et al. (2021) investigated the functions and areas of interest for AI research in language teaching. The findings showed that improving writing, reading, and vocabulary development were the key areas in which AI algorithms were implemented.

Furthermore, Chen et al. (2021) examined current developments and hot topics in personalized language learning (PLL), a subset of AI applications in education. The results showed a strong correlation between PLL and online/web-based, mobile, and game-based learning, which can potentially increase student motivation and engagement. Furthermore, there was a growing desire to use AI in PLL research. Huang et al. (2023) analyzed the current trends, challenges, and applications of AI in language acquisition in a more recent study. The study demonstrated that AI programs—such as chatbots, machine translation, natural language processing, and automated speech recognition—were often used to help students improve their language abilities through bibliometric analysis of 516 publications.

Research has confirmed the beneficial effects of using AI in language acquisition. Before ChatGPT came around, language instructors were interested in intelligent chatbots because they could assist students in improving their target language proficiency quickly and realistically (Fryer et al., 2020). Due to their ability to offer rich linguistic input, practice having conversations like a human, spark learners' interest, and improve their overall language performance, AI-driven chatbots like QuillBot, Google Translate, and Grammarly have been used extensively to support language learning (Organ, 2023). Because chatbots are freely accessible around the clock, their affordances allow language learners to practice and acquire new abilities wherever and whenever they want (Huang et al., 2022). In addition to giving students plenty of interaction opportunities, the real-time help pairs them with a virtual assistant (Chiu et al., 2023). One of the most sophisticated AI-driven chatbots available today is ChatGPT (Generative Pre-trained Transformer), published in November 2022. Because ChatGPT can mimic human speech so well, it provides a fun and modern approach to teaching languages.

Hong (2023) discussed how ChatGPT affects teaching and learning foreign languages. It was stated that ChatGPT gave instructors and academic institutions the chance to improve L2 instruction and evaluations (via natural language, private language tutoring, etc.) and gave language learners a more tailored educational experience. A study by Baskara and Mukarto (2023) investigated the possible effects of ChatGPT on university-level foreign language instruction. They provided a thorough explanation of using ChatGPT for language acquisition. The conversation indicates that while ChatGPT can produce fluent and clear messages on some subjects, it could struggle to comprehend more complicated concepts.

Similarly, Kohnke et al. (2023) discussed ChatGPT's affordances for teaching and learning languages. Previous conversations around ChatGPT for language learning have emphasized the possible advantages and difficulties in improving L2 instruction. To put it succinctly, ChatGPT improves language acquisition through real-world interactions by

offering contextual word meaning, correcting grammatical errors, producing writings in different genres, translating and paraphrasing, and making tests and assessments (Kohnke, 2023). Nevertheless, utilizing ChatGPT may also raise questions about technological dependence, the machine's lack of accuracy in its replies, and the morality of employing technology to produce writing (Kohnke et al., 2023).

Methodology

Subjects, Instruments, and Procedures

For this study, 83 students majoring in English from Prince Sattam Bin Abdulaziz University in Alkharj, Saudi Arabia, were selected and divided into two groups: the EG (41) and the CG (42). They were male and female, with ages ranging from 21 to 26. Their level of proficiency in the English language was intermediate. To ensure their satisfaction, the participants provided written informed permission. Even though they provided written informed permission, the participants were notified that they might opt out of the questionnaire survey at any point while the process was ongoing. The following three instruments were administered to both groups as the research pretests and post-tests.

The Foreign Language Classroom Anxiety Scale (FLCAS), created and approved by Horwitz et al. (1986), was the first measure. FLCAS addresses anxiety related to L2 in a course, including public speaking anxiety. There are thirty-three items, such as "I don't worry about making mistakes in language class." It has five Likert scale items, with 1 denoting "strongly disagree" and 5 denoting "strongly agree." The dependability of this scale was 0.86, according to the Cronbach alpha statistics.

The 14-item questionnaire used in this study as the second instrument was modified from Sakai and Kikuchi (2009). Using a 5-point Likert-type response structure (not true, somewhat not true, neither true nor false, somewhat true and true), the scale assessed demotivation. A pilot research was carried out before the questionnaire was distributed. The pilot research requested ten people to sign up. Every question in the questionnaire was deemed legitimate based on the pilot study's results, which revealed a Cronbach Alpha coefficient greater than 0.75. It should be noted that the individuals with the highest scores on the demotivation and FLCAS measures also had the lowest levels of anxiety.

The Autonomy Perception Scale, which consists of 17 five-point questions, was the third instrument utilized in this study and was created by Bayat (2007). It was employed to gauge the pupils' commitment to language acquisition. Two Saudi Arabian specialists who were university professors studying similar subjects reviewed the validity index. According to Bryman and Cramer (2005), the Cronbach alpha computed as 0.83 using the statistics used to determine the unidimensionality of this scale suggested a satisfactory level of conceptual relatedness and reliability among items.

After administering the above questionnaires to both groups, the treatment was started. Using ChatGPT, an AI technology, the EG participants were instructed on their course topics. Both language input—students received language input in the target language by utilizing the word list—and feedback on speaking assignments was provided

using ChatGPT. The CG received conventional language instruction; no AI-based resources were employed in this course. The pretest questionnaires were re-administered as post-tests after the contents were taught, and SPSS 26 was used to analyze the data gathered.

Research Results

First, the data gained in the three pretests were analyzed, and the results are presented in Tables 1 and 2.

Results of the Pretests

Table 1

Descriptive Statistics

	G	N	Mean	Std. Deviation	Std. Error Mean
Anxiety	CG	42	60.02	7.75	1.19
	EG	41	61.12	8.76	1.36
Demotivation	CG	42	26.00	4.04	.62
	EG	41	25.00	4.29	.67
Autonomy	CG	42	36.47	5.25	.81
	EG	41	38.07	6.08	.94

Looking at Table 1, one can observe that the two groups' performances were the same since their mean scores were also the same in the three pretests. Their level of demotivation, anxiety, and autonomy were almost equal.

Table 2

Inferential Statistics

	F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Anxiety	1.09	.29	-.60	81	.54	-1.09	1.81
			-.60	79.30	.54	-1.09	1.81
Demotivation	.22	.63	1.09	81	.27	1.00	.91
			1.09	80.42	.27	1.00	.91
Autonomy	1.18	.27	-1.28	81	.20	-1.59	1.24
			-1.27	78.73	.20	-1.59	1.24

Table 2 tells us that the sig values of the three pretests are above 0.05, meaning that both groups were at the same level of demotivation, anxiety, and autonomy before doing the treatment.

Results of the Autonomy Post-test

Table 3: Descriptive Statistics

Groups	Means	Std. Deviations	N
CG	40.14	7.32	42
EG	45.09	7.87	41
Total	42.59	7.95	83

Shooting a glance at Table 3, we understand that the mean scores of the two groups were different in the autonomy post-tests; 40.14 for the CG and 45.09 for the EG. The EG gained a better level of autonomy in their post-test.

Table 4: Inferential Statistics

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	855.82[a]	2	427.91	7.90	.00
Intercept	1548.34	1	1548.34	28.60	.00
Pretest	346.50	1	346.50	6.40	.01
Groups	388.81	1	388.81	7.18	.00
Error	4330.24	80	54.12		
Total	155743.00	83			
Corrected Total	5186.07	82			

Table 4 confirms our claim that the EG gained more autonomy after the instruction. According to the results, the sig value is less than .05, which shows that the EG performed better than the CG.

Results of the Demotivation Post-test

Table 5: Descriptive Statistics

Groups	Mean	Std. Deviation	N
CG	29.47	5.10	42
EG	33.65	10.16	41
Total	31.54	8.23	83

Shooting a comparative look at the mean scores of the two groups in Table 5, we notice a difference between the two groups' performances in the demotivation post-tests. The mean score of the EG is higher than the mean score of the CG.

Table 6: Inferential Statistics

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1467.31[a]	2	733.65	14.33	.00

Intercept	170.29	1	170.29	3.32	.07
Pretest	1104.41	1	1104.41	21.57	.00
Groups	525.14	1	525.14	10.25	.00
Error	4095.28	80	51.19		
Total	88140.00	83			
Corrected Total	5562.60	82			

A glimpse at Table 6 shows that the sig value is lower than .05. Accordingly, the difference between the demotivation post-tests of both groups is significant in favor of the EG.

Results of the Anxiety Post-test

Table 7: Descriptive Statistics

Groups	Mean	Std. Deviation	N
CG	64.30	10.84	42
EG	69.68	14.87	41
Total	66.96	13.19	83

By taking a quick look at Table 7, we see that the mean scores of both groups are different; the mean score of 64.30 is for the CG, and the mean score of 69.68 is for the EG. Seemingly, the treatment helped the EG decrease their anxiety level.

Table 8: Inferential Statistics

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3228.30[a]	2	1614.15	11.69	.00
Intercept	943.75	1	943.75	6.83	.01
Pretest	2629.26	1	2629.26	19.04	.00
Groups	440.15	1	440.15	3.18	.07
Error	11042.58	80	138.03		
Total	386456.00	83			
Corrected Total	14270.89	82			

Looking at Table 8, we can conclude that the sig value is less than .05. Consequently, the differences between the anxiety post-tests of the EG and CG are substantial in favor of the EG.

Discussion

The results we obtained in this study tell the readers that the EG performed better in the demotivation, FLLA, and autonomy post-tests. This betterment can be attributed to the advantages of AI- ChatGPT. This result is consistent with research conducted by Jo (2024), who examined how well an AI-powered voice recognition system might enhance learners' pronunciation. They discovered that learners who received AI-based training significantly improved their pronunciation compared to those who did not. This result is also consistent with the research by Rusmiyanto et al. (2023) that showed learners' speaking fluency and accuracy were enhanced by using AI-based virtual instructors.

Furthermore, Wang and Liu's (2019) investigation on the efficiency of an AI-driven language learning program in enhancing learners' oral competency supports the findings of our study. According to their findings, students who utilized the AI tools demonstrated improved speaking abilities and increased self-assurance in interpersonal interactions. Furthermore, Cash et al. (2012) corroborate our findings, stating that mobile learning powered by AI is a successful means of facilitating autonomous learning. According to them, one method of incorporating technology into language learning is through the use of cell phones to foster learners' learning autonomy. Furthermore, according to Avci et al. (2021), the increasing usage of mobile devices impacts teaching and learning since it creates more adaptable environments where students can practice and study whenever and wherever they want.

Furthermore, our results align with Zhang et al.'s (2019) investigation into the function of AI-driven chatbots in language acquisition, emphasizing the chatbots' capacity to offer instantaneous and interactive language practice. Learners reported feeling more motivated and engaged when interacting with chatbots—which enabled natural language discussions and provided tailored feedback. Their results highlight the pedagogical benefits of AI technology in fostering student autonomy and customizing educational experiences.

These results corroborate the assertions made by UNESCO (2023) that the AI tools (ChatGPT) can improve teaching and learning by taking on a variety of functions, including study partner, coach for collaboration, guide on the side, personal tutor, co-designer, and dynamic assessor. The results verify previous assertions that ChatGPT improves teaching and learning in higher education (Rudolph et al., 2023) by personalizing L2 acquisition and learning and raising language learners' motivation. The results perfectly agree with the conclusions of the study conducted by Firat (2023), who said that because ChatGPT provided students with personalized learning experiences and on-demand access to material, the participants believed that the platform significantly supported their learning process.

The study's theoretical implications are clarified using foundational learning theories, including constructivism, social learning theory, and the zone of proximal development. Congruent with constructivist ideas is ChatGPT's personalized and accessible learning experience. One essential component of this approach is allowing students to actively plan their learning paths (Ingkavara et al., 2022). Thus, integrating

constructivist perspectives with AI technologies such as ChatGPT adds an interesting perspective to the conversation around AI-enhanced learning environments. In addition, ChatGPT's socio-interactive features reinforce the fundamental ideas of social learning theory, highlighting the significance of imitation and observational learning (Wenger, 1999).

ChatGPT acts as an interactive agent, mediating social learning and supporting Bandura's claim on the significance of social interaction in the learning process. Furthermore, it is clear by examining these aspects under the prism of Vygotsky's zone of proximal development that ChatGPT helps students complete activities within their developmental zone, maximizing their learning potential (Cole & Wertsch, 1996). This unique combination of theoretical implications highlights AI technology's instructional potential in higher education.

The outcomes achieved can be attributed to ChatGPT's benefits. Mobile learning powered by AI has the potential to improve collaborative learning. This study is noteworthy because it confirms the findings of Pallas et al. (2019), who suggested that social networking sites might play a significant role in developing communication skills. The primary feature of intelligence-based mobile learning that facilitates collaborative learning is that learners are not expected to be physically present in a designated classroom. It gives the kids the opportunity to support independent study.

To sum up, ChatGPT can support language learners' autonomy by giving them individualized support, promoting self-evaluation and self-reflection, enabling language practice, and providing fast feedback. These features can empower learners to take charge of their education (Barrot, 2023). These ChatGPT capabilities can enable students to take charge of their language study and help them become more self-directed learners. Students who work on growing their autonomy will be more equipped to succeed in their future pursuits and navigate the increasingly international world.

There are some possible advantages to adopting ChatGPT as a learning tool to support English language learning autonomy, but there are also some drawbacks to take into account. One drawback is that students' degree of technology competence and experience with chatbots may have an impact on how well ChatGPT supports autonomy in their English language acquisition (Barrot, 2023). The effectiveness of ChatGPT for less tech-savvy students may depend on their assistance, which might restrict the tool's potential influence on their autonomy in language acquisition. According to one study, some students are more comfortable interacting with people in person and would be less inclined to use a chatbot if they don't feel as supported and encouraged emotionally as they would by a real instructor (Liu et al., 2022). An additional investigation revealed that although ChatGPT provides tailored feedback, certain learners could see the absence of interpersonal communication and emotional bonding as an impediment to their language acquisition ((Fatih Karataş et al., 2024). Therefore, while determining whether to integrate ChatGPT into language learning environments, it is crucial to consider individual learners' preferences and needs.

Research Implications

The findings of this study can generate some implications for EFL learners. The introduction of ChatGPT, an extensive language model created by OpenAI, has completely changed how students interact and learn. ChatGPT has positively influenced students, helping them with anything from language proficiency to individualized learning. Developing pupils' language abilities is one of ChatGPT's most important outcomes. ChatGPT is designed to comprehend natural language and reply precisely and grammatically soundly. This implies that students who engage with ChatGPT are exposed to superior language models, which aids in developing their language proficiency. Through enjoyable and interactive exercises, students may ask questions on ChatGPT, receive prompt replies, and pick up new vocabulary and grammatical rules.

Students may now more easily access materials and information thanks to ChatGPT. Pupils may ask ChatGPT questions on any subject, and it will respond with pertinent and reliable information gleaned from various sources. As a result, students can now get the information they need quickly via ChatGPT, saving them from spending hours looking it up online or in books. In addition to saving students time, this has improved the effectiveness and efficiency of learning. AI can also help with collaborative learning by connecting students with classmates with similar interests or learning objectives. AI can improve student engagement and provide community in the classroom by encouraging teamwork and communication.

AI can constructively influence student engagement by gamifying the learning process, offering individualized learning experiences, and maintaining student interest through interactive techniques. AI helps students interact with the content in a way that suits their learning style and at their own pace by creating personalized learning experiences. In addition to improving conceptual understanding, this tailored approach gives students a sense of empowerment and control over their education. Chatbots and virtual assistants driven by AI may provide students with instant feedback and assistance, keeping them interested and motivated. In addition, these virtual assistants may provide extra resources, respond to inquiries, and mentor students through the course content, resulting in a tailored and engaging educational experience.

Teachers may use AI to make learning more immersive and exciting, grabbing students' attention and encouraging active participation. Teachers may use AI to create lesson plans, schedule student assessments, and assess their progress. It may also be used to prepare for future learning and evaluate the requirements of the students. AI may be used in the classroom to assist instructors in better understanding how each student learns and what sort of support each student needs at different stages of the process. This lessens tension for everyone involved and enables teachers to provide pupils with specific feedback tailored to their needs.

AI is crucial in improving teaching and learning in the educational setting. It can help teachers deliver individualized education, monitor students' progress, and spot problems where pupils might want more help. AI can also help automate administrative

duties, giving teachers more time to devote to meeting the needs of each student. Additionally, teachers may use AI technology to assist students in having more individualized learning experiences. With AI technology, educators may better adapt their methods to the unique needs of each student, giving them a more personalized learning environment. This enables students to obtain additional guidance from their teacher to enhance their comprehension of the subject, which is especially beneficial for those who struggle to understand specific ideas.

Research Conclusions and Suggestions

This study examined the effects of AI on academic demotivation, foreign language learning anxiety, and autonomy of EFL learners in Saudi Arabia. The results proved the positive effects of AI on decreasing academic demotivation and foreign language learning anxiety of Saudi Arabian EFL learners while increasing their autonomy. In summary, AI-driven tools such as ChatGPT undoubtedly play a big part in enhancing language learning and assessment, but they should be viewed as adjuncts to, not as a substitute for, qualified language instructors. A 2023 research by Opara et al. supports this result by highlighting that although AI can improve education, it shouldn't be used in place of it. In fact, AI may significantly reduce the workload of human teachers, expediting the evaluation process and freeing up substantial time. Overall, assessment support makes instruction more successful and efficient, which benefits teachers and students alike.

Moreover, the best strategy is synergy, in which AI supports teachers by providing accurate grammar and style checks, vocabulary enrichment, and test automation. Meanwhile, human educators are essential in verifying AI assessments and fostering a profound understanding of language beyond syntax and semantics. This united effort ensures a complete and all-encompassing approach to language teaching. In fact, by combining AI's benefits with language educators' expertise, teachers may provide students with access to a more comprehensive and fruitful environment for language acquisition.

One way to help instructors with teaching is through AI, which should ultimately lead to better student learning outcomes. Students will gain the most from AI if it is used optimally. This implies that learning will provide flawless outcomes or quality if it is executed in compliance with relevant laws. Both instructors and pupils will suffer if it is not implemented in compliance with the appropriate regulations. As is well known, I may assist teachers in implementing successful and efficient learning activities and raising students' intelligence. While AI has undoubtedly improved student learning outcomes, it is essential to remember that technology can never fully replace a teacher's position; it can only be used as a helpful tool.

In summary, ChatGPT has significantly impacted students in several ways. It has enhanced language proficiency, given them individualized learning opportunities, facilitated information and resource access, increased accessibility for students with impairments, and positively impacted their mental health and general well-being. It's

crucial to remember that ChatGPT should only be used to enhance learning—not as a substitute for face-to-face communication. It's critical to find a balance between using technology to improve knowledge and ensuring that children continue receiving the social and emotional support they require to succeed as it advances. Even if ChatGPT greatly benefits pupils, it is vital to consider any possible drawbacks. Kids must balance interacting with others to build their social and emotional intelligence and using technology to augment their education. Along with encouraging students to think critically and solve problems independently, teachers and parents can also advise them to double-check the information they get via ChatGPT with other sources.

Future research should examine how students feel about using ChatGPT in EFL classes. Since students are the lesson's focal point and impact the efficacy of any innovation in language teaching, it is essential to look at how they perceive utilizing ChatGPT to learn English. Future research studies should also identify the variables that affect ChatGPT's effectiveness in English classrooms. Researchers in the future can also look at how well ChatGPT improves students' primary skills and sub-skills in the English language.

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