EFL Learners' Positive Emotions in the Era of Technology: Unpacking the Effects of Artificial Intelligence on Learning Enjoyment, Self-efficacy, and Resilience

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Abstract

Exposing EFL learners to technology can develop their positive emotions in English language learning. This research examined the effects of Artificial Intelligence (AI) on Saudi Arabian EFL learners' enjoyment, self-efficacy, and resilience. Seventy students were selected; 35 were considered as the Control Group (CG), and 35 as the Experimental Group (EG). They were pretested by three scales of learning enjoyment, self-efficacy, and resilience. Next, the EG was trained in four lessons of National Geographic Learning via ChatGPT, while the same lessons were taught to the CG traditionally. After teaching all the classes, the two groups were administered the posttests of learning enjoyment, self-efficacy, and resilience. Finally, the gained data were analyzed using ANCOVA and independent samples t-tests. The findings indicated the EG outstripped the CG on all three posttests. Using ChatGPT as a sort of AI effectively improved EFL learners' enjoyment, self-efficacy, and resilience. The implications and conclusions of the study were explained.
Keywords: Artificial Intelligence, Learning Enjoyment, Positive Emotions, Resilience, Self-Efficacy, Technology

Introduction

Technology has always played a pivotal part in the educational setting. It is a vital element of their work as educators since it allows them to use it to help students learn better. We use the phrase "integration" when discussing the use of technology in learning and teaching. Given the pervasiveness of technology in our lives, it is imperative that we reconsider the notion of integrating technology into the curriculum and instead focus on incorporating it into instruction to enhance the learning process. That is to say, from the start of planning learning experiences to the learning and teaching process, technology is an essential component of the learning process and a significant concern for instructors (Eady & Lockyer, 2013). Bull and Ma (2001) assert that language learners have access to

infinite resources thanks to technology. According to Gençlter (2015), for students to succeed in language learning, teachers should motivate them to use computers to discover relevant activities. Based on Clements and Sarama (2003), learners can benefit from using suitable technology resources. Harmer (2007) asserts that computer-based language exercises enhance students' cooperative learning.

One effective subcategory of technology that plays a vital role in language teaching and learning is AI. In language teaching and learning, AI has become a successful pedagogical strategy that gives learners a range of chances to improve their language learning performance (Zhang, 2022) and cultivate favorable attitudes and views of AI (Xia et al., 2022). According to Aldosari (2020), AI is a programmed system that can mimic and generate intelligent computer and smartphone apps, able to carry out a variety of activities with human aid. According to Luckin et al. (2016) and Namaziandost and Rezai (2024), AI can aid virtual reality, teaching, and group learning in language learning environments. According to Bibauw et al. (2019), ChatGPT, an AI-supported teaching tool, helps learners communicate with one another and produces both input and output. With various modalities—text, visual, and audio —ChatGPT facilitates genuine and meaningful social interactions (Ray, 2023) and provides clear and understandable feedback (Bao, 2019). Akerkar (2014) asserts that AI can make deft, intelligent judgments that are on par with those made by humans. Kim (2018) draws attention to the accurate assessment and improved functionality of AI apps, which make them a valuable tool for enhancing English language learning.

One of the practical applications of AI is ChatGPT. The capacity of ChatGPT to engage in genuine conversation, comprising a sequence of user-posed questions and application feedback, is what makes it so strong (Rospigliosi, 2023). Utilizing ChatGPT differs from other search engines in encouraging follow-up queries through ongoing dialogue. Conventional search engines often do not retain the history of results; instead, they provide a list of distinct connections to resources depending on how well-rated particular phrases performed as search terms perform (Rospigliosi, 2023). Meanwhile, ChatGPT can provide well-organized, systematic, informative, and coherent (partially) correct replies that include and maintain the discussion's topic and background (Houston & Corrado, 2023). For several text-related jobs, many people could consider using ChatGPT instead of their usual online searches (Cox & Tzoc, 2023).

Using technological-based instruction helps EFL students enjoy their learning more. Academic enjoyment is a favorable emotional experience that students have while studying and demonstrates how much they appreciate a specific topic (English, for example) (Boliver & Capsada-Munsech, 2021). It may also be characterized as an illustration of feelings of good accomplishment (Pekrun, 2006). Furthermore, according to Guo et al. (2022), enjoying a foreign language relates to the perception of favorable results connected to one's accomplishments and interpersonal relationships. Enjoyment-seeking learners regard the results of their activities as personally relevant and/or feel in control of the successful activities they participate in (Pekrun et al., 2007).

Since enjoyment may be fundamental to cognitive processes that are important for learning in general and foreign language learning in particular—such as improved memory, attention, and problem-solving—it makes sense to assume that it positively and actively motivates students in foreign language classrooms (Oades-Sese & Lewis, 2014). The students' desire to maintain that pleasant experience is shown by the motivational aspect of enjoyment, which spurs them to action and inspires them to take on more FL challenges. Dewaele and MacIntyre (2014) assert that enjoyment can increase a person's experience and acquisition of adaptive knowledge, boost students' consciousness of language input, and increase both extrinsic and intrinsic desire to study a foreign language. Accordingly, the enjoyment students feel when they find value in the content they are studying (positive evaluation) and believe they can handle and finish the task (control) can be interpreted as learning enjoyment. Therefore, it is thought that fun is crucial for the feeling of fulfillment that follows and enhances academic success (Piechurska-Kuciel, 2017).

One more influential factor in language learning is resilience. Resilience is defined by Connor and Davidson (2003) as the character traits that allow one to flourish when facing difficulty. According to this perspective, resilience is also described as the capability to deal with the undesirable impacts of stress and the flexibility one can adjust to changing circumstances (Klohnen et al., 1996; Tugde et al., 2004). According to Rajendran and Videka (2006), resilience is a person's ability to function under apparent stress. Put differently, resilience in the instruction setting refers to a student's capability to achieve their aims in the face of difficult or upsetting circumstances (Edwards et al., 2016).

According to Truebridge (2016), resilience is a dynamic and negotiated process that allows people to define themselves as healthy in encountering adversity, threat, trauma, and/or daily stress internally and externally within themselves and their environments. Resilience is described by Howe et al. (2012) from two angles. They offered the psychological concept of resilience, which states that resilience is a dynamic process that includes adaptive growth in the face of severe adversity. One psychological characteristic that may be used to gauge one's capacity for effective stress management is resilience (Connor & Davidson, 2003). Howe et al. (2012) also contend that environmental, societal, and human elements can support or contradict resilience from a sociological standpoint. Resilience is a set of social indices representing how people interact with their environments and the opportunities and circumstances they may encounter to grow (Ungar, 2012).

According to Tugde et al. (2004), highly resilient people often adjust psychosocially well, show more positive emotions, and have better self-confidence when faced with challenges. Highly resilient adolescents exhibit high levels of academic accomplishment and readily gain assistance from instructors and parents, according to Compas et al. (1995). These people do well academically and often don't exhibit any indications of mental health issues or delinquent conduct (Choi et al., 2023).

Besides the two explained variables above (enjoyment & resilience), self-efficacy can improve the academic achievement of EFL learners. According to Zhang (2022), self-efficacy refers to people's beliefs about their capacity to produce the intended outcomes. Bandura (2011) states a person's self-efficacy shows how to manage and control learning purposes and continue through task completion. It also establishes how resilient and nervous the students are about managing challenges. Four main strategies— vicarious experiences, mastery experiences, social persuasion, and emotional and physiological states—are suggested to increase self-efficacy (Zhang, 2022).

Schunk (2008) asserts that a learner's self-efficacy influences the activities they choose to engage in. Low self-efficacy learners avoid learning many things, especially the challenging ones—conversely, pupils with greater self-efficacy like taking on difficult assignments. They put in greater effort and perseverance to learn the relevant skills to succeed. Similar opinions are expressed by Betz (2004), who claims that highly effective students investigate more inspiring career options than their peers.

Regarding the importance of the variables we explained above, three questions were raised in this study:
1. Is the learning enjoyment of Saudi Arabian EFL learners enhanced by ChatGPT as a type of AI?
2. Is the self-efficacy of Saudi Arabian EFL learners enhanced by ChatGPT as a type of AI?
3. Is the academic resilience of Saudi Arabian EFL learners enhanced by ChatGPT as a type of AI?

Review of the Literature

Technology is a helpful instrument for EFL learners to use in their learning process. To enable students to expand their actual use of technology for language acquisition, teachers should demonstrate how to utilize it to assist the curriculum (Costley, 2014). The use of technology has significantly altered how English is taught. It offers a plethora of options for making instruction engaging and more effective in terms of progress (Haleem et al., 202). In conventional classrooms, instructors stand in front of students and use a whiteboard or chalkboard to provide lectures, explanations, and teaching. These approaches need to be modified in light of technological advancements. Multimedia texts are used in the classroom to help students get more familiar with language patterns and terminology. Using print texts, movies, and the internet is another way multimedia is applied to improve learners' language proficiency. Learners may gather knowledge and have access to diverse resources for the study and interpretation of language and situations through print, video, and the Internet (Kumi-Yeboah et al., 2020).

The usage of technology has brought about the shift from teacher-centered to learner-centered approaches. It is highly beneficial for students to boost their learning when teachers are facilitators and guides in their education (Riasati et al., 2012). According to Gillespie (2006), using technology in the classroom fosters student

cooperation. It helps them interact with resources like movies and gain knowledge. Due to its quick availability, technology aids instructors and students in studying the course contents, as claimed by Haleem et al. (202). Technological advancements play a critical part in training students to apply what they study in any field to secure employment around the globe. Technology is a valid educational instrument that makes learning possible and helps learners learn.

One kind of technology is AI. AI has improved quickly. It is now used in fiction to depict AI and humanlike traits through robots, but it has also grown to offer incredible advantages in practically every area of life (Tahiru, 2021). Our lives are being profoundly affected by it; it is changing everything from how we work and study to how healthcare and transportation are provided (Dogan et al., 2023). AI has significantly altered the ecosystem in economics, finance, society, and education as a creative technological revolution (Kaur et al., 2022). AI-driven solutions like chatbots, virtual assistants, and recommendation engines are becoming more commonplace and offer efficient and customized experiences across many industries. Additionally, it's affecting the labor market by automating specific jobs and opening up new chances in sectors like robotics and data analytics (Colombo et al., 2019).

AI is also changing higher education, among other aspects of education (Tahiru, 2021). Popenici and Kerr (2017) posit a unique relationship between the advancement of new intelligent technologies and the future of higher education. One significant area of development is the creation of personalized and adaptive learning systems, which employ AI algorithms to tailor instruction to the abilities and requirements of specific students (Tang et al., 2020). There is an additional dimension in the assessment and evaluation space, where AI-powered systems can analyze massive amounts of data to provide more accurate and nuanced feedback on student performance (Zawacki-Richter et al., 2019). AI is also being utilized to create interactive and immersive learning environments. Such virtual and augmented reality simulations can potentially engage students in ways that were not previously possible (Chen et al., 2020). However, the growing use of AI in education is also giving rise to many worries, mainly social and ethical. For the past few years, the ethical concerns surrounding AI applications in education have received much attention in the industry. One of the main worries is security and privacy, as using AI in education may result in the gathering and storing of private student information that might be used illegally or vulnerable to cyber-attacks (Nguyen et al., 2022). Ethical concerns have been raised by using student data, algorithmic decision-making, and the effects of technology on education (Nguyen et al., 2022).

Transparency is another problem since AI may result in less transparent decision-making processes, making it harder for teachers and pupils to comprehend decisions and leading to a lack of responsibility. These concerns must be addressed to ensure that AI is used morally and sensibly and benefits all pupils (Jiao et al., 2022). Many professionals in the field of education, including researchers, legislators, and educators, are concentrating on integrating AI into the learning and teaching process due to its

substantial benefits. According to Chiu et al. (2023), one of the most critical issues in educational research is figuring out how AI may help develop new curricular initiatives and pedagogical approaches.

One type of AI is ChatGPT. OpenAI created ChatGPT, a large-scale generative language model (Pavlik, 2023). The design is referred to as a Generative Pre-trained Transformer or GPT. ChatGPT is an effective tool for language learning and training because of its large vocabulary and ability to produce writing that appears human on various topics (Shen et al., 2023). Its advancement relies upon the achievements of earlier models, including OpenAI's GPT-1, GPT-2, and GPT-3.

ChatGPT's enormous training dataset, which comprises billions of words, may produce text that is grammatically accurate, coherent, and semantically meaningful (Taecharungroj, 2023). Transformer architecture, a neural network model that handles sequential data, is used to do this. Using the transformer, ChatGPT can produce text that resembles natural human language by learning the links between words. Furthermore, ChatGPT may be optimized for certain activities, increasing its applicability (George & George, 2023).

ChatGPT's capability to create text based on input prompts is one of its distinctive characteristics (Sallam, 2023). For instance, ChatGPT can provide a comprehensive answer from a user who enters a question or a partial statement. Because ChatGPT can offer individualized and interactive learning experiences, its potential for language learning and education is especially noteworthy. ChatGPT's extensive vocabulary and capacity to provide appropriate replies for the given situation make it a valuable tool for improving communication skills in other languages. Students may converse in English using ChatGPT and receive feedback on their language use. It may even adapt to the user's language proficiency and provide tailored feedback for their needs (Qadir, 2022).

Using ChatGPT can cause enjoyment among EFL learners. In studying English, academic enjoyment is a pleasant, motivating emotion often experienced about the activity (Shao et al., 2020; Pekrun et al., 2023). Based on the broaden-and-build theory of positive emotions developed by Fredrickson (2001) and the control-value theory of accomplishment emotions by Pekrun and Linnenbrink-Garcia (2014), enjoyment plays a critical role in learning a foreign language. According to Deweale and MacIntyre (2016), language enjoyment may be conceptualized as a complex feeling that captures interacting characteristics of difficulty and perceived ability that represent people's motivation for success when faced with challenging activities.

A more comprehensive conceptualization of enjoyment would be a psychologically positive triggering state that will spur the FL learners into action and reinforce the motivational processes. Although the length of enjoyment is not very clear, given that it is activity-focused, the enjoyment period is brief (ranging from a few seconds to a few minutes). Conversely, it is undeniable that FLE is marked by a high degree of intensity. According to Wang et al. (2021), one of the positive emotional state components in positive psychology is the satisfaction of learning a foreign language.

Psychologists have historically focused on reducing the negative emotional states that teachers and pupils were experiencing (Kariou et al., 2021).

Some research in foreign language learning has had a joyous rebirth; most notably, they have shifted their focus from examining negative emotions, specifically anxiety related to learning a foreign language, to happy emotions (MacIntyre et al., 2020). As a contemporary method in educational settings, positive psychology has made an effort in recent years to shed light on the conditions conducive to students' and teachers' success (Chodkiewicz & Boyle, 2016). To develop their potential findings in the workplace, the focus has thus switched from negative emotions to good emotional states such as enjoyment, resilience, academic engagement, well-being, grit, emotional regulation, and positive teacher-learner relationships (Buric & Macuka, 2018). Due to the problematic nature of teaching, previous studies have mainly concentrated on the negative feelings that language instructors experience in various cultural situations (King & Ng, 2018). Nonetheless, some research has revealed a strong link between resilience and the enjoyment of learning a foreign language (Ergün & Dewaele, 2021).

According to Rajendran and Videka (2006), resilience is a person's ability to function under apparent stress. Put differently, resilience in the educational milieu refers to the capacity of the students to meet their goals in the face of difficult or upsetting circumstances (Edwards et al., 2016). According to Truebridge (2016), resilience is a dynamic process that involves internal and external negotiation within and between individuals to find the resources and supports needed to define oneself as healthy in the face of adversity, trauma, threat, and/or daily stress.

Researchers examining learners' strategies for academic accomplishment and closely observing and examining their cognitive and affective processes have become interested in academic resilience. The meaning of achievement has changed chiefly and expanded. As stated differently, attainment is determined by how well students manage their cognitive capacities, self-control, and independence (Schunk & Zimmerman, 2007). In their academic lives, people encounter various obstacles or risk factors, such as having a chronic illness, living with parents, experiencing a natural disaster, experiencing financial hardship, etc. (Masten, 1994). Even while these risk factors negatively affect a learner's academic career, they can hinder their progress in various professions and even function in concert to hinder one another's progress. Furthermore, these findings can affect different learners differently (Little et al., 2004).

Several studies have been done on resilience as a component of positive psychology. Kim and Kim (2016) examined the enjoyment, compassion, sociability, persistence, and self-regulation of secondary EFL learners to understand their learning-related resilience better. They discovered that persistence and enjoyment were acknowledged as the primary explanatory variables for learning English. Additionally, Proietti Ergün and Dewaele's study from 2021 showed a strong correlation between teaching delight and resilience.

Self-efficacy is another aspect that influences pupils' academic achievement. Self-efficacy varies depending on how pupils feel about thinking and doing. Self-efficacy is a notion that directs people's experiences, abilities and thought processes in a certain way. It is the belief in one's capacity to achieve the functions and outcomes of other specified scenarios (Ocak & Karafil, 2020). Pupils more assured of their talents and capabilities typically put in twice as much effort while completing assignments. Consequently, they do better when completing their assignments (Brown et al., 2016). Finding that students from divorced families have low levels of self-efficacy is not surprising, given that Bandura views self-efficacy as an agent that functions as a cognitive mediator and influences people's cognition, thoughts, and feelings. These students grow up in environments that are filled with conflict, family disagreements, and unpleasant experiences, so when they are faced with new experiences or challenging academic circumstances, their low levels of self-efficacy do not assist them in controlling and managing those situations or events (Motamedi et al., 2019).

When motivated, students acquire the target language more quickly. Students are partly motivated by their belief in their ability to learn. Self-efficacy, as defined by Albert Bandura, was created as a component of a more comprehensive theory. According to Zhang (2022), self-efficacy is people's conviction to complete particular activities. This notion will impact their performance on those tasks. Self-efficacy is important because it helps forecast human performance, which in turn helps people succeed in the assigned tasks. Strong self-efficacy will inspire a person and probably improve their performance on the job at hand. On the other hand, when faced with challenging activities or obstacles that they believe should be avoided rather than accomplished, a person with low self-efficacy is more likely to grow irritated (Bandura, 2011).

Additionally, Bandura (1997) elaborates that there are four sources to aid students in increasing their self-efficacy. Enactive mastery experience, vicarious experience, social persuasion, and physiological factors are those sources of self-efficacy. The first and most important source, the mastery experience, emerges gradually as pupils go through successes and setbacks. Expertise or individual achievements in performance are seen as the best means of fostering a solid sense of effectiveness. Persuasion in society is the second source. It grows when pupils engage with those in their immediate vicinity.

Social persuasion is another strategy for bolstering people's convictions that they can achieve their goals. For example, instructors and parents can increase students' self-efficacy by openly encouraging them. Teachers' feedback to students and how it is delivered are significant sources of self-efficacy (Lestari et al., 2019). Vicarious experiences, the third source, arise when pupils observe the accomplishments and shortcomings of others. Other successful people have a more favorable effect on a student's self-efficacy if they have comparable traits, such as age, gender, and perceived ability. Most studies have been done on the vicarious source, where students can use modeling to boost their self-efficacy (Lestari et al., 2019).

Some experimental investigations were performed on the effectiveness of AI and ChatGPT on language learning. Using a quasi-experimental study methodology, Safadi et al. (2022) examined the impact of AI-based training on the speaking abilities of female English language learners. In this study, the CG's speaking performance was improved through interactive speaking activities with peers, whereas the EG interacted with AI to improve their speaking skills. Speaking skills tests were given to gather the required data. The outcomes depicted that the EG outperformed the CG in speaking, confirming the significant benefits of AI-based instruction in improving the speaking abilities of EFL students.

Similarly, Junaidi (2020) used an experimental CG research design to inspect the impacts of AI-supported training utilizing the Lyra application on the speaking abilities of EFL learners. Students use their smartphones to interact with AI Lyra during class to improve their speaking abilities. On the other hand, the CG engaged in interactive speaking exercises without using the AI Lyra. Fluency, grammatical accuracy, vocabulary, and pronunciation are the sub-scales of speaking performance that the learners in both groups concentrated on the most. The outcomes showed that AI-supported teaching performed better than its non-AI counterpart when it came to helping EFL learners build their speaking subcomponents.

Ali et al. (2023) inspected the influences of ChatGPT on English language acquisition. Data from eighty instructors and learners accessing ChatGPT in early 2023 were gathered using a quantitative study approach. The sample answered an online survey after being chosen using a non-probability sampling approach. Results indicated that ChatGPT inspires students to advance their writing and reading abilities. The respondents' opinions of ChatGPT's impact on speaking and listening skills development were ambivalent. The results imply that ChatGPT-based instruction has a motivating effect. Rather than being feared for its unfavorable impacts, which need more thorough research, ChatGPT should be used as a teaching tool.

Mixed-method research by Alenizi et al. (2023) investigated 199 EFL exceptional education instructors' opinions about using ChatGPT for language learning. The 21-item survey questionnaire examined hurdles, attitudes, effectiveness, and potential ChatGPT use. The findings showed that participants' attitudes were moderate and that they thought ChatGPT had moderate obstacles and was only moderately successful. Although attitudes and efficacy did not significantly differ between male and female instructors, there were notable gender disparities in the future usage of ChatGPT, with female teachers showing a stronger inclination to adopt it. Five participants were selected for follow-up email interviews, which yielded insightful information about the tactics, efficacy, difficulties, and inclusivity of utilizing ChatGPT in language training for special education kids.

Aydın Yıldız (2023) examined how using ChatGPT-generated dialogues in language instruction materials affects EFL learners' motivation. The subjects were second-year students at the university studying a variety of subjects. ChatGPT was utilized to assist the EG in carrying out post-lesson tasks within the parameters of a

research study that comprised ten 15-minute sessions. Meanwhile, the CG issued assignments in compliance with the curriculum program. Pre- and posttests were administered to see whether there had been any change, and a questionnaire was utilized to evaluate the students' motivational strategies. The data was analyzed using SPSS. The findings showed substantial differences between majors on the motivation test subcategories of intrinsic values, self-regulation, and test anxiety.

Meniado (2023) examined how ChatGPT affected the teaching, learning, and assessment of the English language. According to the results of this study, ChatGPT can facilitate and improve English language learning by giving users meaning-focused inputs, supporting them while they generate meaning-focused outputs, giving them feedback on how accurate their outputs are, and promoting intensive language use to increase fluency. This study also found that ChatGPT can enhance English instruction by assisting teachers in developing original lesson plans, encouraging language acquisition both within and outside the classroom, producing customized teaching resources, assessing second language acquisition, and offering timely, individualized feedback.

Mahapatra (2024) inspected the effects of ChatGPT, an instrument for formative feedback, on undergraduate ESL students' writing abilities. ChatGPT, a generative AI-powered tool, is predicted to have a more significant beneficial influence on students' writing than AI-driven automated writing assessment tools, which also have a good effect on students' writing. On the other hand, there is a dearth of empirical data regarding ChatGPT's impact on writing. This gap was attempted to be filled in the current mixed methods intervention study. Three assessments and an equal number of focus group conversations were used to gather data from ESL students in their university education. The results showed that ChatGPT significantly improved students' academic writing abilities, and the students also perceived the influence positively.

Method

Research Subjects

The study population comprised 70 students studying English as a foreign language at Applied College, Prince Sattam Bin Abdulaziz University, Alkharj, Saudi Arabia. They were male and female students aged 24 to 33 years old, and their proficiency level was pre-intermediate. Thirty-five students were regarded as the CG, and the other 35 were considered as the EG.

Instrumentations

The Connor-Davidson Resilience Scale (CD-RISC) was utilized to evaluate the participants' resilience (Connor & Davidson, 2003). The CD-RISC was a self-report tool used to gauge one's capacity for handling stress and hardship. The 25 questions on this scale assessed participants' resilience on a 5-point Likert scale, with higher scores denoting greater resilience. Examples of such statements were, "I can deal with whatever comes," "I can handle unpleasant or painful feelings like sadness, fear, and anger," and "When things look hopeless, I don't give up." The multidimensional scale comprised five constructs: control, spirituality, positive acceptance of change/secure connections, faith

in one's instincts/tolerance for unpleasant effects, and personal competence/tenacity. In Connor and Davidson's 2003 study, the scale's internal consistency reliability coefficient was 0.92; in the current study, it was 0.95.

The second tool was the foreign language enjoyment (FLE) scale, which included 21 questions and encompassed subscales related to peer and teacher support, learning, and peer support. FLE was divided into two categories on the Dewaele and MacIntyre (2014) scale: FLE social and FLE private. Items 1 through 13 on the learning subscale were used to assess FLE private; items 14 through 21 on the peer support subscale and 15, 16, and 17 on the teacher support subscale were used to evaluate FLE social. All in all, these items have undergone many tests and have Cronbach Alpha values ranging from.86 to.92 (Dewaele et al., 2019).

The Questionnaire of English Self-Efficacy (QESE) scale was initially designed with observations, interviews, and verbal protocols of young Chinese English language students in the United States (Wang, 2004). Several alterations were made to the word choices in many items for the current study to represent better the features of the target demographic and the Korean environment. The 32-item measure asked participants to rate their ability to use English as a second language for specific activities. The scale intends to measure four self-efficacy areas: speaking, reading, writing, and listening. It is scored on a 7-point rating system from 1 (I cannot do it at all) to 7 (I can do it very well). Cronbach Alpha showed the reliability of this scale was .87. Two English professors proved the validity of the three scales. The pre- and posttests for the current study were these three scales.

Procedures

This study included two groups of students: one as the CG and one as the EG. They were pretested by three scales of learning enjoyment, self-efficacy, and resilience. Next, the EG was trained in four lessons of National Geographic Learning via ChatGPT, while the same lessons were taught to the CG traditionally. ChatGPT offered writing and listening opportunities in English and guidance on how to have conversations and pose questions in the target language to improve vocabulary acquisition. Furthermore, ChatGPT was used to provide feedback on speaking tasks. It was used to provide language input, meaning that students were given language input in the target language using the word list. After teaching all the lessons, the two groups were administered the posttests of learning enjoyment, self-efficacy, and resilience. Finally, the gained data were analyzed using ANCOVA and independent samples t-tests.

Results

The results are depicted in the following Tables.

Tables 1:

Descriptive and Inferential Statistics of the Pretests (Independent Samples T-test)

Descriptive Statistics				
Groups	N	Mean	Std. Deviation	Std. Error Mean

Enjoyment	CG	35	52.20	7.65	1.29
	EG	35	51.02	7.41	1.25
Resilience	CG	35	44.40	5.85	.98
	EG	35	46.08	7.41	1.25
Self-efficacy	CG	35	42.22	5.68	.96
	EG	35	40.88	5.48	.92

Independent Samples T-test

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Enjoyment	.39	.53	.65	68	.51	1.17	1.80
			.65	67.92	.51	1.17	1.80
Resilience	1.81	.18	-1.05	68	.29	-1.68	1.59
			-1.05	64.52	.29	-1.68	1.59
Self-efficacy	.02	.86	1.00	68	.31	1.34	1.33
			1.00	67.90	.31	1.34	1.33

Table 1 displays the descriptive data for the two groups. The three pretests had nearly similar mean results for the group. Since the significance levels are greater than 0.05, the difference in the means of the sample groups is not statistically significant at (p<0.05).

Tables 2:
Descriptive and Inferential Statistics of the Enjoyment Posttests (ANCOVA)

Descriptive Statistics

G	Mean	Std. Deviation	N
CG	55.34	9.85	35
EG	61.68	13.75	35
Total	58.51	12.30	70

ANCOVA

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	4042.29[a]	2	2021.14	21.16	.00
Intercept	157.08	1	157.08	1.64	.20
Pretest	3338.23	1	3338.23	34.96	.00
Group	960.67	1	960.67	10.06	.00
Error	6397.19	67	95.48		
Total	250114.00	70			

Corrected Total	10439.48	69

The descriptive statistics for both groups are displayed in Table 2. The average for the EG group is 61.68, whilst the CG group's is 55.34. Additionally, Table 2 shows that the Sig value (.00) is less than 0.05, indicating that the groups' pleasure posttests differ statistically significantly.

Tables 3:
Descriptive and Inferential Statistics of the Self-efficacy Posttests (ANCOVA)

Descriptive Statistics			
G	Mean	Std. Deviation	N
CG	48.05	12.05	35
EG	57.65	13.61	35
Total	52.85	13.64	70

ANCOVA					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	2399.76[a]	2	1199.88	7.69	.00
Intercept	916.25	1	916.25	5.87	.01
Pretest	786.96	1	786.96	5.04	.02
Groups	1871.46	1	1871.46	11.99	.00
Error	10452.81	67	156.01		
Total	208424.00	70			
Corrected Total	12852.57	69			

The descriptive data in Table 3 shows that the average score for the CG group on the self-efficacy posttest is 48.05, whereas the average score for the EG group is 57.65. Table 6 shows notable differences in the two groups' responses on the posttests that gauged the participants' levels of self-efficacy. It turned out that the EG participants outperformed the CG on the self-efficacy posttest.

Tables 4:
Descriptive and Inferential Statistics of the Resilience Posttests (ANCOVA)

Descriptive Statistics			
Groups	Mean	Std. Deviation	N
CG	48.97	10.716	35
EG	59.82	15.22	35
Total	54.40	14.16	70

ANCOVA					

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3072.43[a]	2	1536.21	9.55	.00
Intercept	1162.00	1	1162.00	7.22	.00
Pretest	1009.58	1	1009.58	6.27	.01
Group	1682.26	1	1682.26	10.45	.00
Error	10776.36	67	160.84		
Total	221004.00	70			
Corrected Total	13848.80	69			

Table 4 displays the descriptive resilience posttest results for each group. The CG group's mean score is 48.97, whereas the EG group's score is 59.82. Table 4 demonstrates that, with Sig (.00) less than 0.05, the group differences are significant at (p<0.05). As it turned out, EG outperformed CG on the resilience posttest.

Discussion

The effect of AI (ChatGPT) was examined on EFL learners' learning enjoyment, self-efficacy, and resilience. The findings depicted a difference between the posttests of the EG and CG. The EG conducted better than the EG group on the posttests because of the treatment they had received. Our findings concur with those of Ali et al. (2023), who looked at the influences of ChatGPT on English language learning. According to their findings, ChatGPT typically encouraged pupils to increase their writing and reading abilities. Additionally, the results obtained are consistent with the research conducted by Alenizi et al. (2023), which suggested that ChatGPT was a helpful tool for language acquisition.

Furthermore, the study results align with those of Aydın Yıldız (2023), who investigated the impact of ChatGPT-generated conversations in language teaching materials on language learners' motivation. The findings showed that each participant's motivation increased dramatically. Additionally, our results corroborate those of Meniado's (2023) study, which found that ChatGPT can enhance English instruction by assisting educators in developing original lesson plans, promoting language acquisition both within and outside of the classroom, assessing second language acquisition, producing customized teaching resources, and offering prompts. Additionally, the results of our study are consistent with Mahapatra's (2024) findings, which supported ChatGPT's beneficial benefits on undergraduate ESL students' writing abilities as a formative feedback tool.

Learners of language may receive individualized teaching while using ChatGPT. Using ChatGPT, language instructors may create lesson plans and resources tailored to specific students' interests and requirements, increasing the effectiveness and engagement of language learning. Creating practice tasks that correspond with a learner's aims, interests, and skill level is one way that ChatGPT may be personalized. These focused practice exercises help improve students' language skills and increase their desire to

study. The capacity of ChatGPT to produce accurate language content is another benefit of using it in language learning.

Through ChatGPT, language instructors may create authentic language materials for learners to interact with and learn from, such as news items, reading passages, and conversations. Exposing students to real language content can improve their reading and comprehension abilities and increase their language ability. For example, ChatGPT may provide learners with interactive and educational reading passages, news articles, and realistic discussions. By providing realistic language content, ChatGPT can raise students' language competency and motivation to study (Baskara & Mukarto, 2023).

There are other advantages to using ChatGPT in teaching and learning that can be the reasons for the gained results in this study. In addition to enhanced accessibility to a vast range of materials and resources, ChatGPT offers an engaging and individualized learning experience (Chan & Hu, 2023) (Halaweh, 2023). Personalized learning experiences can support inclusivity and equitable access to education by catering to each learner's interests and requirements (Kooli, 2023). Numerous chances to improve the learning process, tailor education, and transform the role of educators arise from the integration of ChatGPT in teaching and learning (Firat, 2023). ChatGPT can help students understand complicated ideas and explore subjects that match their interests and learning styles because of its adaptability (Mai et al., 2023). For instance, ChatGPT benefits health education by improving individualized learning, clinical reasoning, and comprehension of difficult medical topics (Sallam et al., 2023).

Fundamentally, ChatGPT is a large-scale language model trained on a wide range of text data. Through significant training, it can understand human language's patterns, syntax, semantics, and subtleties, resulting in replies that nearly mimic natural human speech. Reward learning from human input is used to fine-tune the model, improving its answers to make them more useful and contextually relevant (Cao et al., 2023). Because of ChatGPT's adaptability and usefulness, it has become widely used in many industries, including virtual assistants, customer service, content production, and—most importantly—writing aids. For authors, students, and professionals looking for AI-powered language support, it's a priceless resource because of its capacity to help with text production, topic recommendations, and even conversation simulations (Raheem et al., 2023).

ChatGPT has the potential to develop language assessment. ChatGPT can reveal information about a learner's level of language competency by examining the conversations it produces. This might be applied to provide language evaluations that are more trustworthy and accurate. Lastly, ChatGPT has the potential to create more immersive language learning environments. It might be used, for instance, to build virtual environments where students can hone their language abilities in more authentic contexts. All things considered, ChatGPT has the power to transform language instruction completely. It may enhance language evaluation, make language learning more effective and entertaining, and produce more immersive language learning opportunities.

Therefore, it is worthwhile to investigate this technology's potential for teaching and learning languages.

More reasons for the obtained outcomes can be ascribed to the advantages of AI in language teaching and learning:

1) Students benefit from tailored learning experiences thanks to AI-powered language learning and teaching tools. These resources evaluate the students' learning data and offer focused practice tasks to enhance their language proficiency. With this individualized learning strategy, children learn more efficiently and quickly.

2) Teachers and students receive real-time feedback from AI-powered language learning and teaching tools. In addition to giving teachers insight into their teaching strategies, this feedback assists students in identifying their areas of weakness and strength.

3) Personalized learning experiences are offered by AI-powered language learning and teaching technologies that employ adaptive learning strategies. These resources evaluate the students' learning data and offer focused practice tasks to enhance their language proficiency. Students may study in their own way and at their speed with the support of this adaptive learning strategy.

4) AI-powered gamification strategies are used in language learning and teaching aids to increase student engagement and enjoyment. With badges and awards, these resources encourage students to study and practice more.

AI is essential for making learning other languages easier. AI-driven language learning apps and platforms use cutting-edge algorithms to deliver individualized and flexible learning. To provide individualized lessons and activities, these platforms assess the learner's learning preferences, areas of strength, and shortcomings. AI also makes speech recognition, pronunciation assessment, and real-time feedback possible, which helps language learners improve their speaking and listening abilities. Furthermore, ChatGPT, an AI-powered tool, has become helpful for language learners. With the ChatGPT, language learners may practice in a realistic and dynamic setting by stimulating conversations. It gives prompt answers, fixes grammatical errors, and recommends increasing fluency. Conversely, AI-driven virtual tutors provide individualized coaching and direction, adjusting to the learner's speed and offering specialized course materials.

Certain educational implications can be provided in light of the study's findings. Teachers should consider integrating ChatGPT into the curriculum to take advantage of its learning-enhancing and motivational qualities. Secondly, language instructors should be provided with training on the proper integration of ChatGPT with language evaluation. This entails utilizing ChatGPT to enhance language proficiency, stop cheating, deal with abuse, and implement substitute evaluation techniques that complement the incorporation of technology. Third, inside and outside the classroom, educators ought to support self-motivation and autonomous learning (Ma, 2021).

The results of our study have educational ramifications for using ChatGPT in English language instruction. First, our results support incorporating technologically advanced tools into language classrooms, such as ChatGPT. We are undeniably heading

into a new AI era, and educational resources must change to keep up with this inevitable development. Secondly, rather than outright prohibiting ChatGPT, our results emphasize how crucial it is to offer pedagogical advice to assist students in using the technology in a lawful, appropriate, and productive way (Yan, 2023).

This study looked at how ChatGPT, a type of AI, affected EFL students' resilience, self-efficacy, and enjoyment of learning. The outcomes demonstrated ChatGPT's beneficial benefits on EFL learners' resilience, self-efficacy, and pleasure of learning. We may conclude that AI language tools can correct grammatical, vocabulary, and pronunciation mistakes in writing and speaking tasks, offer comments on student work, and assess their development in various methods. Though many other publicly accessible programs, including Scribbr and Duplichecker, also provide ideas for development, such as different word selections, sentence structures, and speech approaches, ChatGPT is not the only tool that can do this.

It may be of tremendous use to teachers when doing menial activities like grading students and providing assignments based on predetermined standards like syntax correctness, vocabulary usage, and grammatical accuracy. EFL teachers might use ChatGPT as a learning aid for their students or to enhance their lessons with activities centered on it. However, ChatGPT will have to wait for the time being regarding learner engagement and motivation, classroom organization, and selecting the best tactics for diverse learners (Ahmed, 2023). ChatGPT is a cutting-edge new tool that might completely transform teaching and learning languages. It offers several advantages: lower costs, better language learning outcomes, and higher student involvement. It is, therefore, a priceless instrument for teaching and studying languages.

According to other studies (Şimşek & Ateş, 2022; Edwards & Cheok, 2018), ChatGPT's efficacy in improving language learning outcomes depended on several criteria, including integration, content quality, and student involvement. While technology might enhance conventional teaching techniques, it shouldn't replace personalized training and one-on-one guidance. Teachers did note several difficulties with using ChatGPT, though, including finding the correct language levels for their students, identifying speech patterns, offering more help, and avoiding a dependency on technology. Although integrating technology into education can facilitate learning and provide access to resources, concerns have been expressed regarding the potential loss of social and emotional contact and the requirement for suitable assistance and direction (Cagiltay et al., 2019; Cheng & Lai, 2020).

Learning a language takes time, and students frequently need constant encouragement and help. ChatGPT may be quite helpful in offering support for ongoing learning. Learners may sustain their momentum in language acquisition and cultivate a feeling of accountability via consistent engagement. Additionally, ChatGPT may provide learners with tailored recommendations for online courses, podcasts, and books to help them stay motivated and engaged throughout their language learning process.

Although AI technologies have completely changed how people learn languages, there are still certain things to remember. First of all, a reliance on technology may lead to a dependence on AI technologies, which might impede the development of autonomous language abilities. Students must strike a balance between using AI and actively participating in discussions and cultural immersion. Furthermore, AI techniques cannot always capture a foreign language's subtleties and cultural background. Machines might not completely understand the cultural nuances inherent in different languages. To better understand the target language, learners should exercise caution and look for extra resources, such as native speakers or language exchange programs.

A limited sample size of participants is one of the research's shortcomings. As a result, it is advised that future research use a larger sample size to improve the results' generalizability. We were only able to gather data using quantitative methods; future research is advised to include observations and interviews to get qualitative data to increase the conclusions' validity. Future studies are also suggested to examine how ChatGPT affects EFL students' speaking abilities globally.

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