GRADUATE SCHOOL
ISTANBUL MEDENIYET UNIVERSITY
DEPARTMENT OF FOREIGN LANGUAGE EDUCATION

The Effects of Creativity Activities through AI-based Environments on Foreign Language Anxiety among Children

Master's Thesis

Zerşin İdil Cizrelioğlu

June 2025

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Supervisor

Prof. Dr. Selami Aydın

June 2025

THESIS JURY APPROVAL

This Master's thesis titled "The Effects of Creativity Activities through AI-based Environments on Foreign Language Anxiety among Children" written by Zerşin İdil Cizrelioğlu at the Department of Foreign Language Education was accepted by our jury.

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STATEMENTS

Style and Reference Manual Statement

Having reviewed this thesis written under my supervision, I confirm that it has been written in accordance with the APA Manual of Style and used its [footnote/in text] reference format consistently throughout the entire text.

Prof. Dr. Selami Aydın

Declaration of Originality

I hereby declare that all information in this dissertation has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conducts, I have fully cited and referenced all material and results that are not original to this work.

Zerşin İdil Cizrelioğlu

GENİŞ ÖZET

Yapay Zekâ Tabanlı Ortamlarda Yaratıcılık Etkinliklerinin Çocuklarda Yabancı Dil Kaygısı Üzerindeki Etkileri

Cizrelioğlu, Zerşin İdil
Yüksek Lisans Tezi, Yabancı Diller Eğitimi Anabilim Dalı
Danışman: Prof. Dr. Selami Aydın
Haziran, 2025

İngilizce öğrenimi, bulunduğumuz yüzyılda ve küreselleşen dünyada bireylerin akademik ve sosyal yaşantılarına uyum sağlayabilmeleri adına oldukça önemli bir konumda bulunmaktadır. İletişim kurma konusunda ortak bir dil olarak kabul edilen İngilizce, farklı anadile sahip bireylerin ortak bir dili olarak belirlenmiş ve küresel düzeyde iletişim dili olmasını sağlamıştır (Harmer, 2009). Bu sebeple erken yaşta edinilen İngilizce becerisi yalnızca akademik başarıyı arttırmakla kalmayarak aynı zamanda kültürlerarası farkındalığı arttırmakta, bilişsel gelişime ve eleştirel düşünme becerilerini geliştirmeye destek olmakta yarar sağlamıştır (Vilke, 1988; Barrow & Markman-Pithers, 2016).

Yabancı dil olarak İngilizce öğrenme sürecini etkileyen en önemli faktörlerden biri de bireysel farklılıklardır. Özellikle yabancı dil öğrenme sürecinin içinde bulunan çocuk yaştaki öğrenenlerde sıklıkla karşılaşılan yabancı dil öğrenme kaygısı, çocuklarda öğrenmeye karşı oluşabilecek olumsuz tutumlara ve sınıf içinde katılım eksikliğine sebep olabilmektedir (Horwitz et al., 1986; Aydın, 2013). Çocukların kaygı düzeylerinin artmasında etkili olan etmenler arasında hata yapma korkusu, akran ve öğretmen tepkilerinden çekinme gibi faktörler bulunurken, yapılan araştırmalar bu etmenlerin öğrenme sürecine olumsuz yönde bir etkide bulunduğunu ortaya koymuştur (Djigunovic, 2021; Aydın et al., 2016). Bu bağlamda öğrencilerin kendilerini motive hissedecekleri, destekleyici ve onların ihtiyaçlarını gözeten sınıf ortamları oluşturmak önem arz etmektedir (Sotomayor Cantos et al., 2024).

Destekleyici öğrenme ortamlarını oluştururken, sınıf içinde yaratıcılığı destekleyen aktivitelerin öğrenenlerin motivasyonunu artırma yönünde olumlu bir etkiye sahip olduğu, dili aktif olarak kullanmalarına olanak sunduğu ve öğrenme sürecini daha keyifli hale getirdiği vurgulanmaktadır (Cremin, 2015; Avila, 2015). Yaratıcılığın akıcılık, esneklik, özgünlük ve ayrıntılandırma gibi üst düzey düşünme becerilerini geliştiren zihinsel bir süreç (Guilford, 1957) olduğu göz önüne alındığında, sınıf içine entegre edilen yaratıcılık aktiviteleri sayesinde öğrencilerin özgüveni artırılarak dili daha aktif bir şekilde kullanmaları hedeflenmiştir.

Bunların yanı sıra, yaratıcılık etkinliklerinin etksini sınırlayan müfredatla uyumsuzluk, küçük yaş gruplarının dilsel ifade becerilerinin sınırlı olması gibi bazı faktörler bulunmaktadır. Bu faktörler sebebiyle yaratıcılık etkinlikleri zaman zaman yüzeysel kalabilmektedir. Yapay zekânın (YZ) öğrenci ihtiyaçlarına yönelik kişiselleştirilmiş içerikler üretebilme ve öğrencilerin kaygı düzeylerini de göz önüne olarak uygun material ve görevler sunma (Jian, 2023; Pesovski et al., 2024) özelliği ile YZ teknolojilerinin sınıf içi etkinliklere entegrasyonu bu faktörlerin üstesinden gelmekte önemli bir araç olarak göze çarpmaktadır. Bunun yanı sıra, ses tanıma teknolojilerinin öğrenci telaffuzlarını geliştirmek adına kullanılabilecek bireysel destekler sağlaması da öğrencilere kendi hızlarında öğrenme fırsatı sunar ve özgüvenlerini geliştirmelerinde yardımcı olur (Huh & Lee, 2020).

Bu çalışmada ana amaç, ilkokul düzeyinde İngilizceyi yabancı dil olarak öğrenen çocukların dil öğrenmesi kaygısı düzeylerinin belirlenmesi, geleneksel yaratıcı etkinliklerle YZ destekli yaratıcı etkinliklerin bu kaygı üzerindeki etkilerinin karşılaştırmalı olarak incelenmesi olarak öne çıkmaktadır. Bu bağlamda, farklı çeşitlerde sunulan yaratıcılık etkinliklerin hangilerinin öğrencilerin kaygı düzeylerini düşürmede daha etkili olduğu araştırılmıştır. Bu çalışma, sınıf içi aktivitelerin bilişsel ve duygusal ihtiyaçlara duyarlı ve bireyselleştirilmiş hale getirilmesini ve yaratıcılık içeren öğretici aktivitelerin kaygı üzerindeki önemini ortaya koymayı hedeflemiştir.

Bu çalışma, Yabancı dil olarak İngilizce öğrenme sürecinde yaygın olarak karşılaşılan kaygının, YZ tarafından yazılan yaratıcılık aktiviteleri yoluyla nasıl azaltılabileceğine yönelik literatürdeki boşluğu doldurmayı hedeflemiş olmanın yanı sıra, öğretmenlerin, öğrenci odaklı, esnek ve yenilikçi öğretim ortamları oluşturması konusunda da önem taşımaktadır. Çalışmanın sonucunda, YZ destekli yaratıcılık etkinliklerinin çocukların yaratıcılık becerilerini artırabileceği ve dil öğrenme kaygılarının azalmasında önemli bir rol taşıyabileceği yönünde bulgular elde edilmesi beklenmiştir.

Bu tez çalışması, ilkokul 2.sınıf düzeyinde bulunan yabancı dil olarak İngilizce öğrencilerinin yabancı dil öğrenme kaygı düzeylerini incelemeyi ve bu kaygı üzerinde geleneksel yaratıcı yazma etkinlikleri ile YZ destekli yaratıcı yazma etkinliklerinin etkilerini karşılaştırmalı olarak analiz etmeyi amaçlamıştır. Araştırmada karma yöntem araştırma desenine dayanmakta olup, katılımcılar rastgele iki gruba ayrılmışlardır. Kontrol grubu geleneksel yaratıcılık etkinlikleri ile öğrenim görürken, deney grubu aynı içerikleri ChatGPT tarafından yazılan yaratıcılık aktiviteleri ile öğrenmişlerdir. Her iki gruba da uygulama öncesinde ve sonrasında çocuklar için hazırlanmış Yabancı Dil Kaygısı Ölçeği uygulanmış ve ardından katılımcıların bazılarıyla yapılandırılmış görüşmeler gerçekleştirilmiştir.

Araştırmanın nicel bulguları doğrultusunda her iki grupta da yaratıcılık etkinlikleri sonrasında kaygı düzeyinde düşüş olduğu gözlemlense de, bu düşüş deney grubunda istatistiksel olarak daha anlamlı düzeyde daha yüksektir. Nitel verilere bakıldığında ise deney grubundaki öğrenciler ChatGPT tarafından yazılan yaratıcılık etkinliklerinin öğrenme süreçlerini daha eğlenceli, motive edici ve özgüven arttırıcı hale getirdiğini ve bunun yanı sıra bu etkinlikler esnasında hata yapma korkularının azaldığını ve fikir üretme süreçleri konusunda daha özgür hissettiklerini ifade etmektelerdir.

Bu çalışmanın bulgularına göre, YZ tarafından yazılan yaratıcılık etkinlikleri yalnızca çocukların yaratıcılıklarını artırmakla kalmamış, aynı zamanda

yabancı dil öğrenme kaygısını azaltma konusunda etkili olmuştur. Özellikle küçük yaş gruplarında, YZ ile desteklenen bireyselleştirilmiş, yaratıcı ve etkileşimli materyallerin öğrencilerin öğrenme ortamını daha esnek hale getirdiği ve onların duyuşsal ve bilişsel gelişimine karkıda bulunduğu sonucuna varılmıştır. Bu bağlamda, yabancı dil öğretmenlerinin sınıf içi uygulamalarında YZ teknolojilerini pedagojik bir çerçevede, yaratıcı süreçlerle bütünleştirerek kullanmaları önerilmektedir. Ayrıca, öğretmen eğitimi programlarında bu teknolojilerin doğru ve etkili kullanımına yönelik uygulamalı içeriklere yer verilmesi gerektiği düşünülmektedir.

Anahtar Kelimeler: Yabancı dil olarak İngilizce; çocuk öğrenenler; kaygı; yaratıcılık aktiviteleri; yapay zekâ

ABSTRACT

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Master's Thesis, Department of Foreign Language Education

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Among many challenges in language classrooms, foreign language anxiety (FLA) stands out as one of the most important ones to consider, particularly for young learners. However, with the evolving landscape of digital tools and artificial intelligence (AI), this problem may prove to be a useful one to solve. Creative activities are known to increase motivation and enhance language use, but the literature remains limited in understanding how AI-based creativity activities affect young learners' foreign language acquisition (FLA). This study investigates whether the FLA levels of young learners can be reduced through AI-based creativity activities, thereby creating a more supportive learning environment for them. The study used a mixed-methods approach with 48 second-grade students in a private school in İstanbul, Turkey. The students were divided into two groups: an experimental group and a control group. To collect data, the researchers used the Turkish version of the Children's Foreign Language Anxiety Scale (CFLAS), followed by game-based focus group interviews. The results indicated a slight drop in anxiety levels in the experimental group that used AI-based creativity activities, while the control group's FLA levels remained the same. Although the difference was not statistically significant, the results suggest that AI tools may help alleviate anxiety in certain emotional areas. This study contributes to the growing body of research on how new technologies can support both cognitive and affective aspects of early language learning.

Keywords: English as a foreign language; young learners; anxiety; creativity activities; artificial intelligence

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This thesis may carry my name, but it is the product of a shared journey.

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LIST OF ABBREVIATIONS

AI : Artificial Intelligence

FLA : Foreign Language Anxiety

EFL : English as a Foreign Language

L1 : First Language

L2 : Second Language

CP : Critical Period

SPSS : Statistical Package for the Social Sciences

CPH : Critical Period Hypothesis

ZPD : Zone of Proximal Development

IQ : Intelligence Quotient

DI : Differentiated Instruction

STAI : State-Trait Anxiety Inventory

CA : Communication Apprehension

FNE : Fear of Negative Evaluation

TAM : Technology Acceptance Model

TAM2 : Technology Acceptance Model 2

UTAUT : Unified Theory of Acceptance and the Use of Technology

CDA : Creative Displacement Anxiety

FLE : Foreign Language Enjoyment

WTC : Willingness to Communicate

FLAS : Foreign Language Anxiety Scale

CFLAS : Children's Foreign Language Anxiety Scale

EFA : Exploratory Factor Analysis

IB : International Baccalaureate.

PYP : Primary Years Programme

1. INTRODUCTION

This section presents the rationale for the study, including its background, problem statement, objectives, significance, and research questions. First, the importance of EFL learning and the impact of anxiety among children are discussed. Second, the role of creativity in EFL learning for children, as well as the influence of AI on fostering creativity, is addressed. Finally, the purpose and significance of the study, as well as the research questions, are provided.

1.1 Background of the Study

It is impossible to neglect the importance of EFL learning, as it has already established itself as a common language for communication among people with different first languages, starting from the end of the 20th century (Harmer, 2009). Thus, enabling individuals to adapt to today's world has become crucial. Harmer (2009) explains that English became very important as a '*lingua franca'* due to several factors. First, colonial history laid the groundwork for the English language to spread worldwide, as English-speaking settlers introduced it to countries such as the USA, Australia, and India, thereby ensuring its use in administration by the British Empire. Second, the significant impact of the USA's economic power makes English irreplaceable for international business. Third, English has become the primary language for academic discourse and popular culture, particularly with the abundance of online sources and content. Therefore, students need to recognize the significance of English both in their academic aims and daily lives (Nassi & Nasser, 2016) as it enables individuals to understand and interpret the digital content, resources, and technological tools that are mainly in English and wandering around the internet, leading to the exposure of different cultures and perspectives. Lastly, English has also become essential for adapting to modern-day needs because it enables individuals to participate in globally scaled conversations and interact with people from diverse cultures. Considering these factors, supporting EFL learning from a young age is becoming increasingly essential, as its benefits extend not only to academic success but also to the development of globally aware individuals.

The merits of EFL learning among children are numerous, including becoming familiar with the language, cognitive advantages, and avoidance of cultural bias, as noted by Vilke (1988). First, familiarization of language may be interpreted as making English a natural part of their environment, eventually building a foundation for more improved language skills and effective language use as they age. Second, being exposed to a foreign language as a young learner supports cognitive flexibility, enhances understanding of the concept of language acquisition, and establishes a basis for stronger problem-solving skills (Kharkhurin, 2008). Kids' brains are also flexible, making them adaptable to various cognitive tasks and enhancing brain development by introducing a foreign language (Karatoreos & McEwen, 2013). Third, being able to communicate in a foreign language enables children to connect with peers from different linguistic and cultural backgrounds, leading to an appreciation for cultural diversity from an early age (Rappel, 2011). Fourth, apart from social and cognitive advantages, learning English at a young age also plays a crucial role in their academic journey (Barrow & Markman-Pithers, 2016), enabling them to develop critical thinking skills, as proposed by the *Theory of Critical Language Awareness* (Putra et al., 2021). Encouraging learners to engage in critical thinking enables them to communicate proficiently in a foreign language and to demonstrate creativity through producing diverse spoken and written utterances. Although EFL learning at an early age has undeniable advantages, it is also important to consider the role of individual learner factors that may impact these educational experiences.

Individual differences play a significant role in shaping the experience of young learners in the EFL context, and one of the most critical factors is anxiety, which can be characterized as a state of discomfort and a feeling of helplessness because of a situation that can be perceived as a threat mentions Blau (1955, as cited in, Aydın, 2013). More specifically, Aydın (2013) refers to Horwitz et al. (1986) to define the term *'language anxiety'* as a 'particular mix of thoughts, feelings, and behaviors about learning a language in the classroom, caused by the unique challenges of learning a new language. Anxiety is prevalent among young EFL learners and has a negative relationship with the use of learning strategies and the development of *Multiple Intelligences* (H. J. Liu & Chen, 2014a). According to Zafar and Meenakshi (2012), anxiety significantly impacts EFL learning if it disrupts the learning experience. Thus, understanding the various causes of this and its effects on language acquisition is essential for creating supportive

learning environments. First, fear of making mistakes may lead to moderate to high levels of language anxiety, especially as learners face constant assessment through tests and other evaluation methods, including negative feedback (Aydın et al., 2016). This feedback frequently becomes a significant source of worry for young learners (Djigunovic, 2012). Second, peer and teacher remarks during language learning have an impact on their language performance (Kitano, 2001, as cited in Aydın et al., 2016), which may result in a reduced willingness to communicate and in-class participation, ultimately leading to hesitation in practicing the language. To address these problems caused by anxiety, Sotomayor Cantos et al. (2024) emphasize the need for supportive learning environments tailored to deal with anxiety in young learners, where strategies like benefitting from creativity can encourage engagement and reduce stress.

As previously stated, to foster the children's future potential, learning English at a young age is crucial. By using effective teaching strategies that elevate learners' creativity, this process can become not only rewarding but also an inspiring experience (Jenny Jingga, 2022). Creativity is believed to be a mental activity or skill that can be taught and understood (Craft, 2001), focusing on divergent thinking skills rather than convergent ones and emphasizing fluency, flexibility, originality, and elaboration (Guilford, 1957). In terms of EFL teaching, Cremin (2015) notes that opportunities for creativity during instruction include actively participating, being free to choose options, and utilizing information and abilities to reflect on the educational process (Wang & Kokotsaki, 2018). First, creative language practices enable learners to engage more deeply with the language, producing both explicit input and output, which in turn leads to a higher comprehension of language elements and an increase in motivation, as noted by Albert and Kormos (2011) and Avila (2015). Second, Torrance (1979, as cited in Yulduz and Qizi (2021), mentions that the classroom setting must be a place where it is comfortable for each student to share their ideas, helping them to be flexible. Therefore, creative approaches play a significant role in nurturing and providing a safe environment. Using creativity in EFL classrooms is beneficial and essential for fostering learners' potential and engagement; thus, when teaching to a generation that consists of digital natives, not integrating AI is not even an option.

The role of AI in enhancing creativity in the classroom cannot be overstated, as it has become a concept that occupies a very significant place in our lives. First, AI has the

ability to tailor learners' experiences with information to meet their individual needs, leading to the discovery of their potential creativity, thanks to its capability to analyze large datasets and produce insights (Jian, 2023). An example is provided by Chen (2018, as cited in Jian, 2023), who states that AI can detect trends in a student's activity within an e-learning module to reveal how they learn best and the areas in which they struggle. Second, AI can be utilized during the material design process to produce adaptable and engaging learning resources that inspire students to be more creative in their work and contribute to their own learning (Pesovski et al., 2024). Third, learners may utilize AI models as collaborative partners (Markowitz et al., 2024) to complete creative tasks, such as language games or interactive dialogues, in group activities or projects. Therefore, it may enhance learner autonomy by customizing the learning environment to meet their needs and tap into their creative potential. Utilizing AI in the EFL classroom creates an environment that fosters creativity and enables learners to engage with the language at a deeper level.

In conclusion, there are many ways to help learners adapt to the expectations of the globalized world, and EFL learning is one of them. English has become a vital component of communication, professional pursuits, and career opportunities. Therefore, being exposed to English at an early age comes with cognitive, social, and cultural benefits, as well as enhancing learners' critical thinking skills and creativity. However, the importance of learner-specific variables such as anxiety may impact the whole learning experience, turning supportive learning environments into an even more crucial factor. To create such an environment, encouraging creativity is a must. In this context, AI offers personalized learning experiences, supports material design, and provides opportunities for creative collaboration, proving itself an irreplaceable tool for fostering creativity in EFL learning.

1.2 Statement of the Problem

Many problems related to EFL learning among children can be identified across all four skills. First, young learners have challenges with pronunciation, grammar, vocabulary, and lack of reading strategies and habits (Oktarina & Wilantari, 2021). Moreover, they struggle to remember new words due to their limited vocabulary and phonological awareness in their mother language (Hu, 2012). Second, in terms of speaking, children face difficulties for several reasons, including learner autonomy, motivation, age,

exposure, and native language (Nikmah & Anwar, 2021). The reason behind this is often the classroom oral language development, which is frequently overlooked (Al Hosni, 2014). Third, young EFL learners are often challenged by writing, and they believe that improving their writing abilities can be hindered by limited vocabulary, anxiety about writing, and inadequate teaching strategies (Jashari & Fojkar, 2019). Last, as mentioned by Yılmaz and Yavuz (2015) regarding Goh's (1999) identification of common listening, problems include quickly forgetting what is heard, failing to recognize known words, misunderstanding the intended message, losing track of the following parts due to focusing on meaning, and being unable to form a mental representation of the words. Similarly, Underwood (1989, as cited in Yılmaz & Yavuz, 2015) lists key obstacles, including the inability to control the speaker's speed, the lack of repetition, limited vocabulary, difficulty in recognizing cues, and difficulty concentrating. Not addressing these issues may lead to high anxiety in young EFL learners.

Young learners in the EFL context face various challenges, one of which is anxiety, which can hinder the language learning process (MacIntyre, 2017, as cited in Dikmen, 2021). Liu and Chen (2013) refer to numerous situations that can increase the level of anxiety of young learners, such as being assessed through tests (Young, 1991), speaking in the target language around their peers (Williams & Andrade, 2008), and not being able to comprehend neither the instructions nor the solutions coming from the teachers (Awan et al., 2010). First, anxiety can be the cause of the avoidance of participation during EFL classes since it makes learners feel incompetent (Tsiplakides&Keramida, 2009). Moreover, young students are more prone to get more anxious when they start thinking that their classmates have better English performance when they are called on to speak English and when feeling worried about being left behind in the English class (H. Liu & Chen, 2014) Second, young learners between the age 7-10 are mostly worried about their teachers being ironic or strict when they make any mistakes Nilsson (2019a), leading to negatively influencing learners' cognitive learning process and the individuals' ability to engage and communicate (Dikmen, 2021a). Third, as incomprehensible input provokes anxiety (H. J. Liu & Chen, 2014), it makes it harder for learners to concentrate on the material covered in class (Aguila & Harjanto, 2016, as cited in Dikmen, 2021), therefore affecting the perception of the learners about how challenging the learning task is (Saito, Horwitz, & Garza, 1999, as cited in H. J. Liu &

Chen, 2014b)). Last, anxiety leads students to become stuck mentally when working on a task in class (Chen & Chang, 2004, as cited in Dikmen, 2021)

Even though the negative influence of anxiety on EFL learning is evident, strategies to specifically address the issue of reducing anxiety in young learners remain scarce, especially through the use of creativity that presents several advantages. First, creativity can foster a more engaging, supportive learning environment (Sotomayor Cantos et al., 2024) and has been thought to be linked with reducing stress and encouraging active participation. Second, the EFL classroom is defined as 'a nest of creativity' by Cheng (2023), which motivates students to use the language regardless of their anxiety levels through enjoyable creative tasks. Third, it can decrease boredom and anxiety as long as the learners are motivated by their teachers to participate in creative activities (Cheng, 2023). However, even though there are potential benefits to utilizing creativity in the classroom environment, there are also disadvantages. First, every school has a curriculum that they need to follow, and it might be hard to balance the creative activities with teaching what is written in the curriculum. Second, it may be challenging to determine whether creativity directly affects reducing creativity. Third, because young learners have limited language use, creative activities might remain superficial in classes with the younger kids. Not being able to express their thoughts and creativity may increase their anxiety even more. Nevertheless, the use of AI tools may prove a great solution to such problems, as they can create personalized materials according to the needs of students and allow them to be as creative as possible without the pressure of being judged by their peers.

AI tools can address these issues regarding the adverse effects of anxiety through the use of creative activities among young EFL learners. First, AI-based environments can provide interactive games, storytelling, and collaborative tasks, making language learning more fun and stress-free (Huh & Lee, 2020). Moreover, the mentioned tasks might help create a relaxed atmosphere as they encourage learners to engage with the language without fear of being judged or failing. Furthermore, creative activities can improve EFL learners' oral and written production (Avila, 2015). Being able to produce utterances or form sentences in the target language may enhance learners' self-esteem and reduce anxiety. Second, as AI technologies are adaptable to address emotional needs, they can adjust learning activities to regulate learners' stress levels and make it

easier to overcome FLA by monitoring learners' stress levels through in-app assessments, thereby changing the task difficulty accordingly. Third, because AI tools can generate individualized feedback, they enable students to learn at their own pace, creating a more supportive learning environment. For example, in a lesson where phonics is practiced, voice-recognition technologies in AI tools, such as Duolingo ABC, can prove useful in improving pronunciation in a one-to-one setting and in further designing assessments that gradually challenge learners. It allows learners to discover the language in their comfort zone, increasing their self-confidence.

There are many difficulties that young EFL learners face in all four skills, which can easily lead to anxiety, as they are more prone to feel anxious about their language abilities (Oktarina & Wilantari, 2021). Anxiety mostly increases in situations when learners are compared to their peers and their teachers are relatively strict. Therefore, it leads them to become mentally blocked when performing tasks (Tsiplakides & Keramida, 2009). Although creativity can be a valuable tool for reducing stress and encouraging learners to participate actively in the classroom, it can still be challenging to balance this approach with the curriculum's goal(Sotomayor Cantos et al., 2024). AI tools may be a very useful potential solution because they offer individualized and creative activities that adapt to learners' emotional needs, helping them decrease anxiety levels and enhance self-confidence (Huh & Lee, 2020).

1.3 Aims of the Study

Having become the common language for communication among people with different native languages, EFL learning is undeniably important (Harmer, 2009). Moreover, learning EFL from a young age has numerous benefits, including being more familiar with the new language, improving cognitive abilities, and having less cultural bias (Vilke, 1988). Several factors influence the shaping of individual experiences in the EFL context, one of which is anxiety, as described by Blau (1955, as cited in Aydın, 2013) as a state of discomfort and helplessness caused by perceived threats. EFL learning at a young age is crucial for children to reach their potential, and this process can be inspiring and rewarding through strategies and activities that promote creativity (Jenny Jingga, 2022). AI’s growing influence can support this by personalizing the learning experience and enhancing students’ creative skills through its capacity to analyze data (Jian, 2023). While EFL learning is a key component, as it provides

opportunities for communication, academic growth, and career advancement, young learners face challenges in pronunciation, grammar, vocabulary, and reading habits, which contribute to anxiety (Oktarina & Wilantari, 2021). Even though it was documented that anxiety has negative effects on language learning (Dikmen, 2021a), there is a scarcity of creativity-boosting strategies that will lead to the reduction of anxiety. However, AI tools offer a possible solution by enhancing creativity to regulate the anxiety of young EFL learners. With concerns in mind, this study aims to find the levels of anxiety, explore the effects of traditional and AI-based creativity activities on anxiety, and discover whether there are differences between traditional and AI-based creativity activities regarding anxiety levels among younger EFL learners.

1.4 Significance of the Study

Various reasons make this study significant in the EFL context. First, anxiety is a factor that cannot be overlooked during the language learning process, as it is a strong barrier that can hinder learners' progress, especially among young learners (Horwitz, 2001; Macintyre & Gardner, 1994). As it is a significant reason for struggle in a classroom setting, this study provides a solution on how creativity, facilitated by AI tools, can serve as a means to reduce anxiety and create a more supportive learning environment. However, the literature on how AI simultaneously impacts both creativity and anxiety is limited. This gap in the literature highlights the need to investigate how AI can be utilized to overcome both cognitive and emotional barriers to learning. Second, while creative tasks can enhance learners' language production and motivation (Avila, 2015), research examining their relationship with anxiety and the impact of AI tools remains scarce, particularly among young learners. This study examines how AI tools can be used to enhance creativity, exploring whether they have a positive impact on EFL learning and may provide up-to-date strategies for teachers aiming to create a more adaptive and flexible classroom environment, one that is contrary to the one-size-fits-all approach often encountered in classrooms. Most studies have explored creativity and anxiety separately, but few have looked at the combined effects of AI tools on both factors. By filling this gap, this study aims to examine how AI tools can enhance creativity and explore their potential to reduce anxiety. Lastly, it is well-established that AI integration can enhance learner motivation through personalized learning experiences (Moybeka et al., 2023). There is a notable gap in research regarding the effects of AI on younger learners, especially in terms of regulating anxiety and

enhancing creativity. This study addresses the need for further research into how AI tools can benefit young learners' affective factors. It has mostly been examined in adult or higher education contexts, as seen in the works of Al-Shallakh (2024) and Storey and Wagner (2024). However, little attention has been given to its effect on younger learners, especially regarding its role in regulating anxiety and enhancing creativity. Benefitting from AI tools to address learners' affective factors still has a long way to go, and it necessitates further research (AlTwijri & Alghizzi, 2024); as a consequence, this study contributes to the understanding of how AI can improve learning outcomes for learners as well as providing some practical implications for teachers.

1.5 Research Questions

Given the increasing significance of managing anxiety and fostering creativity in young EFL learners, along with the growing role of AI tools in enhancing language learning outcomes, this study aims to explore the following research questions:

1. What is the level of anxiety among young EFL learners?
2. Does the use of traditional creativity activities influence anxiety levels among young EFL learners?
3. Does the use of AI-based creativity activities influence anxiety levels among young EFL learners?
4. Is there a difference between the use of traditional and AI-based creativity activities regarding anxiety levels among young EFL learners?

2. RELATED LITERATURE

This section is divided into two subsections. The first subsection outlines the theoretical background related to teaching EFL to young learners, creativity, anxiety, and AI. This theoretical foundation enables a deeper understanding of how language learning outcomes impact the learning process. In the second sub-section, a research synthesis is presented within the scope of the effects of creativity activities through AI-based environments on FLA among children.

2.1 Theoretical Background

2.1.1 Teaching EFL to Young Learners

Young children have an innate curiosity and excitement to discover the world around them (Uysal & Yavuz, 2015). Çakır (2004) states that young learners have unique characteristics that distinguish them from adult and teenage learners. In other words, younger learners tend to be more holistic in their learning approach and cannot see language as an abstract system or an intellectual exercise; instead, they engage with the language based on its practical use by developing rules, testing their assumptions, and discovering solutions (Çakır, 2004; Philips, 1993; Wells, 1999). Therefore, bodily-kinesthetic activities, such as making things, singing action songs, playing games, and hands-on projects (Çakır, 2004), nurture them due to their unique characteristics. They learn and remember best when actively involved in the activities (Donaldson, 1978; Hughes, 1986; Değirmenci Uysal & Yavuz, 2015). This foundational understanding of young learners' unique characteristics provides a basis for exploring the theoretical frameworks that underpin their language acquisition journey. Furthermore, understanding these characteristics sets the stage for examining how theoretical frameworks, such as *Piaget's Stages of Cognitive Development, the Critical Period Hypothesis, Vygotsky's concept of the Zone of Proximal Development, and Gardner's Theory of Multiple Intelligences,* support effective language learning strategies for young children.

2.1.1.1 Piaget's Stages of Cognitive Development

In his *Cognitive Development Theory*, Piaget emphasizes how children learn and grow by adapting to new information and moving through different stages of development. Piaget identified four key factors in development: *maturation*, *experience*, *social transmission* (learning through language and teaching), and *equilibrium* (Pakpahan & Saragih, 2022). *Maturation* refers to the biological development that occurs in children, transforming them into more capable individuals with advanced thinking skills. However, he argued against the idea that intelligence is solely innate, emphasizing that children need experiences to develop their cognitive abilities and introducing the second key factor, *physical experience* (Byrnes, 2020). Piaget emphasizes the importance of children benefiting from hands-on activities as they learn by doing to form their mental structures; however, simply having experiences is not enough; they also need to be

guided by social interactions, leading us to the third key factor, which is *social transmission* (Byrnes, 2020). He believed that language acts as a facilitator to share knowledge, and communication with others contributes to children's learning, even though he also pointed out that not all stages of development rely on social interaction, particularly during the earlier *sensorimotor period* when children are *preverbal* (Byrnes, 2020). The last concept is *equilibrium* which refers to the process of balancing *assimilation* and *accommodation* in the mind *assimilation* involves incorporating new experiences into existing cognitive structures, while *accommodation* requires changing those structures to fit new information (Byrnes, 2020) Children move through four stages as they grow: the *sensorimotor stage* (0-2 years) which is characterized by babies learning through their senses and actions remaining focused on the immediate present (Byrnes, 2020) , In the *preoperational stage* (2-7 years), kids develop symbolic thinking that allows them to imagine past and future events even though their reasoning remains limited to perceptual focus, unidimensional thinking, irreversibility, and difficulty distinguishing between reality and fantasy (Byrnes, 2020), the *concrete operational stage* (7-11 years) shows a shift to more logical thinking, children can classify objects based on multiple attributes, understand conservation, mentally reverse actions, and differentiate between real and imaginary scenarios, and lastly in the *formal operational stage* (11 years and up) the concept of abstract thinking is introduced so children now can engage in hypothetical reasoning, systematic planning, and logical problem-solving (Babakr et al., 2019; Byrnes, 2020; Pakpahan & Saragih, 2022; Rabindran & Madanagopal, 2020). Uysal and Haznedar (2010) refer to Long (1990) for their argument that native-like proficiency in phonology becomes almost impossible after a learner reaches the age of six, further creating difficulty in morphology and syntax that appears after age 12, supporting the idea that there are critical periods for various language skills.

2.1.1.2 The Critical Period Hypothesis

The CPH suggests that there is an optimal period for language acquisition, generally occurring between the ages of two and puberty. Learning a language is most effective during this stage, as the brain becomes adaptable. Thus, connections between brain cells form rapidly, making it easier to learn languages (Siahaan, 2022). Language acquisition from mere exposure becomes limited for older adolescents and adults. It applies to both

L1 and L2 acquisition, though most evidence in L1 comes from extreme cases, such as "feral" children who lacked exposure during their CP (Curtiss, 1977, 1988; Lane, 1976 as cited in (DeKeyser & Larson-Hall, 2005) It is important to note that the CPH focuses on ultimate attainment rather than the rate of language acquisition (DeKeyser & Larson-Hall, 2005). Adults often learn faster in the first stages than children, but younger learners usually achieve higher ultimate proficiency, and they approach in a different way to the language and have better phonological skills, lower anxiety, and more time to learn (Krashen et al., 1979; Paradis, 2007; Slavoff & Johnson, 1995; Snow & Hoefnagel-Hohle, 1978)

2.1.1.3 Zone of Proximal Development

Jean Piaget suggests that young learners become actively engaged with their environment to construct their own learning, a process influenced by their immediate surroundings. However, it is Lev Vygotsky who expands this idea by proposing a key concept in his theory called the ZPD which is defined as the distance between a learner's independent problem-solving ability and their potential development when guided by more capable individuals (Roth & Radford, 2010; Wells, 2009). In the EFL context, the term *'scaffolding'* comes into play, which means teachers assist the learners to help them move beyond their current abilities and then remove the guidance (Boblett, 2012). For instance, a child struggling with the new vocabulary introduced might not understand or use the words correctly on their own. However, he can grasp the meaning and learn how to use the word in question in a sentence through structured guidance provided by the teacher. The teacher's role here is to continuously assess the learner's current understanding to provide the appropriate help. In the classroom, scaffolding can come from teachers and peers (Samana, 2013) and can take various forms, such as providing feedback, modeling the language, and encouraging peer interaction.

2.1.1.4 Gardner's Theory of Multiple Intelligences

Howard Gardner's *Theory of Multiple Intelligences* relates to learning more about different learning styles. Cavas and Cavas (2020) suggest that at least eight types of intelligence challenge the traditional reliance on IQ tests to decide if an individual is intelligent. These intelligences include *musical-rhythmic, visual-spatial, verbal-linguistic, logical-mathematical, bodily-kinesthetic, interpersonal, intrapersonal, naturalistic, and existential intelligence*, which is a late addition (Cavas & Cavas,

2020). Gardner describes intelligence as the capacity to solve problems or create meaningful products within specific cultural settings (Emst-Slavit, 2001). *Linguistic intelligence* can be nurtured through exercises that focus on grammar and vocabulary, whereas *visual intelligence* requires support through visual aids, such as pictures. *Songs and rhymes enhance musical intelligence*, while logical-mathematical intelligence is strengthened through tasks related to problem-solving and mathematical reasoning. *Bodily-kinesthetic intelligence* involves role-playing tasks, while interpersonal intelligence benefits from group work and games to improve. Last, *intrapersonal intelligence* involves self-reflective tasks (Gardner, 1993; Stakanova & Tolstikhina, 2014)

2.1.1.6 Differentiated Instruction

The primary objective of DI is to transform the classroom environment, providing students with more opportunities to learn while addressing diverse learner needs rather than focusing solely on minimum achievement (Stakanova & Tolstikhina, 2014; Sullivan & Weeks, 2018). It considers prior knowledge, motivation, and learning styles to enhance learning (Stakanova & Tolstikhina, 2014). Children are mostly grouped according to their dominant learning style in primary education (Stakanova & Tolstikhina, 2014). However, to support and encourage young learners' language learning process, adapting instruction to meet individual needs and interests is important (Islahuddin, 2023).

2.1.2 Creativity

Creativity is a mental and social process that enables individuals to develop new ideas or solutions (Georgiakakis & Retails, 2009), and brain functions facilitate flexible thinking (Gabora, 2020). Creativity is an essential skill for young learners, and the teacher's role is to foster creativity by providing a learning environment that allows students to express their creativity in their own way (Copeland & Bowden, 2018). Children's books are also recommended to show examples of creative thinkers, including activities that improve creative skills (Meador, 1997). Even if it is sometimes challenging for teachers to balance creative activities with learning goals, it remains crucial to help students develop their creative skills to prepare them for the future (Cremin & Barnes, 2018). Creative tasks, like chain games and creative writing, help

students improve their speaking, writing, and understanding of English grammar (Avila, 2015). With this understanding of creativity and its importance in learning, it is helpful to examine the theories that explain how creativity develops.

2.1.2.1 Divergent Thinking Theory

Divergent thinking is the ability to help people find several solutions to a single problem; it is a fundamental part of creativity and flexible thinking (Wyver & Markham, 1999). It is essential for solving problems creatively and based on intelligence or expertise (Vincent et al., 2002). In the EFL context, developing critical thinking and strong reasoning skills enables learners to be more successful in learning foreign languages (Gajić, 2021). It is essential in activities where students must brainstorm, form sentences, or make sense of meanings.

2.1.2.2 Sociocultural Theory

Sociocultural theory can be defined as a framework that highlights the importance of social interaction and cultural tools in shaping learning and development (Barnard & Campbell, 2005). Based on Vygotsky's studies, this theory posits that learning occurs through social interactions and cultural tools, with language being the primary tool that facilitates thinking and learning (Lantolf & Thorne, 2007). In an EFL setting, this theory emphasizes the role of collaborative work and interaction in helping learners improve (Ameri, 2020; Rahmatirad, 2020), ultimately fostering creativity through the sharing of ideas, discussion of meanings, and assistance from peers or teachers.

2.1.2.3 Conceptual Blending Theory

Introduced by Fauconnier and Turner (2002), the *Conceptual Blending Theory* posits that new ideas emerge when existing knowledge from different mental "spaces" converge and combine (Fauconnier & Turner, 2002). Learners must combine linguistic and cultural knowledge to understand idioms, metaphors, and cultural expressions in different languages (Fauconnier & Turner, 2003). It also helps learners develop inferential reasoning and explore hypothetical situations, improving creative problem-solving skills in language learning (Cornelissen & Durand, 2012)

2.1.2.4 Systems Theory of Creativity

According to Csikszentmihalyi (1998), three elements interact to result in creativity: *the individual, the domain, and the field*. *The individual* refers to what a person can do and think; *the domain* refers to knowledge and practices; and *the field* refers to social or cultural context (Csikszentmihalyi, 1998). This theory explains that creativity is not only about individual talent but also how personal abilities show themselves within a cultural framework (Pascale, 2005), providing an understanding of how creative language use and broader educational practices intersect (Wright, 2001)

2.1.3 Anxiety

Anxiety is a feeling characterized by intense tension or uneasiness, differing from fear or worry. It can manifest as a natural reaction or become so intense that it requires treatment (Boughner, 2020), and it is an important factor that affects learners' performance and ability during the language learning process (Dikmen, 2021; Sotomayor Cantos et al., 2024). It often makes students uncomfortable, makes them reluctant to speak, and limits participation (Kasap, 2019). Even though many elements negatively affect anxiety, the key ones include low self-confidence, fear of making mistakes, and peer and teacher pressure, yet there are ways to lower anxiety levels, such as creating a supportive atmosphere, delaying immediate corrections, integrating game-based and social activities and benefitting from group exercises (Liu & Chen, 2013; Sotomayor Cantos et al., 2024). Learners who positively approach language tend to feel less anxious (Liu & Chen, 2013). In young EFL learners, anxiety is mainly seen around speaking exercises as they are concerned about whether they are competent enough or if they are negatively judged (Liu & Chen, 2013; Rasyida & Kusuma, 2023). Because it affects the learning process, understanding and addressing different types of anxiety is crucial to achieving a positive language learning environment for learners.

2.1.3.1 Trait Anxiety, State Anxiety, and Situation-specific Anxiety

The three main types of anxiety in language learning contexts are *trait anxiety, state anxiety, and situation-specific anxiety*. *Trait anxiety* is defined as a tendency to see situations as threatening (De la Peña-Arteaga et al., 2024), and it is more influenced by cognitive factors than biological ones (Calvo & Cano-Vindel, 1997), whereas *state anxiety* is given emotional and physical responses to a specific stimulus perceived as a

threat within a given context as Spielberger (1972) put (Önem, 2010). In simpler terms, *state anxiety* is a situational reaction, while *trait anxiety* is a broader response to perceived threats (Önem, 2010). However, learners with high *trait anxiety* often have more intense *state anxiety* in stressful situations (Kendall, 1978; Sieber et al., 2013, as cited in Sarıgül, 2000). Spielberger et al. (2015) explain that *state* and *trait anxiety* can occur depending on how people evaluate threats and the type of defense mechanisms they employ, which varies according to individual differences in information processing and event interpretation (Önem, 2010). An inventory developed by Spielberger and colleagues that measures state and trait anxiety levels to provide insight across different situations is called STAI. (Sarıgül, 2000) It helps identify those with *trait anxiety* as well as those experiencing *temporary, situational, and state anxiety* at specific moments. However, while it captures these general tendencies, the STAI does not explicitly account for unique situational factors. *Situation-specific anxiety* is quite similar to and seen as an extension of *trait anxiety* (MacIntyre & Gardner, 1991), but it only applies to one particular situation and does not remain constant across different situations or contexts, such as taking a test (Nodoushan, 2015). In this regard, FLA can be considered a form of *situation-specific anxiety*, as it specifically happens in the context of language learning and use. In this regard, FLA can be considered a form of *situation-specific anxiety*, as it specifically happens in the context of language learning and use (Horwitz, 1986; Aydın, 2008).

3. Foreign Language Anxiety

FLA is a common difficulty for learners that can negatively impact their ability to learn languages (Luo, 2013; Onwuegbuzie et al., 1999). It can be caused by various factors, including the classroom environment, learner traits such as confidence, the language itself, academic performance, prior language experience, and the learning process (Luo, 2013; Onwuegbuzie et al., 1999). Learners with high FLA levels often exhibit a fear of making mistakes, being corrected, and speaking with native speakers (Lileikienė & Danilevičienė, 2016), which can lead to demotivation and lower language performance (S. Wang, 2023). Among young learners, it is often specific to certain situations even though most of them experience medium levels of FLA (Liu, 2023), such as the lessons in which students are expected to use their speaking skills (Nilsson, 2019) and when they encounter unknown words is text (Liu, 2023) Making sure FLA levels are not high

in the classroom is crucial to improving EFL learners' outcomes (Dikmen, 2021b)

3.1 Communication Apprehension

CA is a fear of speaking or interacting that is characterized by traits that may make social interactions difficult (Cardon et al., 2023; McCroskey et al., 1976). *Communication anxiety* arises when students possess sophisticated ideas and thoughts but lack the mature communication skills to articulate them effectively. It relates to a concern about engaging in genuine conversation with others (Aydin, 2008). Even if it can occur in environments where there are group discussions or public speaking, people mostly experience it during personal conversations (Cardon et al., 2023). It is a considerable obstacle in EFL settings that can hinder improving speaking skills (Kuluşaklı & Genç, 2024). Cultural, psychological, and linguistic factors can contribute to the type of anxiety (Malik et al., 2021), and it has an inverse effect on learners' communication skills in another language (Çapan, 2013) for learners of all ages. Nevertheless, CA increases from kindergarten through grade 5 (McCroskey et al., 1981). To overcome this, positive learning environments and supportive teaching methods (Kuluşaklı & Genç, 2024; Thaher, 2005), such as *computer-mediated communication*, can be utilized as they help learners become more comfortable with the language (Çapan, 2013). It is crucial to address CA as it has an important effect on learners' overall language progress and basic speaking skills (Garrison & Garrison, 1979; Malik et al., 2021)

3.2 Fear of Negative Evaluation

When foreign language learners feel incapable of making a positive social impression, they display a FNE. It appears as a fear of being evaluated by others and a tendency to avoid situations that result in evaluation (Aydin, 2008). In language learning, FNE is associated with feelings of self-consciousness and worry about what others think, particularly in social or performance situations (Aydin, 2008; Shabani, 2012). It is a specific type of language anxiety, with learners feeling apprehensive about how others will judge their abilities. Several factors contribute to this anxiety, including learners' personal beliefs, the language learning environment, and external evaluations (Horwitz & Young, 1991; Young, 1991, as cited in Aydin, 2008)

3.3 Test Anxiety

Test anxiety is a fear of being evaluated academically. It can be characterized as learners' conscious or unconscious fear of test failure. This kind of anxiety is rooted in a fear of failing and is related to fear of academic evaluation (Horwitz and Young, 1991, as cited in Aydin, 2008). It can be defined as a state of discomfort in situations where individuals are evaluated, and it is a common challenge for students at all levels (Numan & Hasan, 2017; Sieber, 1969). Undoubtedly, it also affects the achievement and proficiency of learners in EFL classes (Aydin et al., 2020). Factors such as past academic experiences and previous failures are seen as sources of test anxiety (Saha, 2014). Along with having a negative effect on cognitive functioning and academic performance (Sieber, 1969), it manifests physically through increased heart rate and sweating, as ll as cognitive reactions such as worry and intrusive thoughts (Numan & Hasan, 2017). Even though younger EFL learners show lower levels of language anxiety (Aydın, 2013), which might be caused by test perceptions, instructions, and time constraints (Aydin, 2012), to support the learning process, teachers should detect the anxiety factors and work accordingly to reduce it in the classroom environment through supportive communication and awareness strategies (Aydin et al., 2020; Aydın et al., 2009).

4. Artificial Intelligence

AI is defined as a field of computer science that creates systems to replicate human intelligence through the use of activities such as reasoning, learning, and problem-solving skills (Leake, 2001). According to Morandín-Ahuerma (2022), it refers to the ability of machines to think and solve problems, just as humans do (R. H. Chen & Chen, 2022). It focuses on creating systems that can imitate human thought processes while following logical reasoning and performing tasks in a manner that is human-like (Russell & Norvig, 2009). AI's primary goal is to understand how minds work when encountering real-world problems and create intelligent agents based on the information provided by the user (Russell, 1997). Some AI systems focus more on how decisions are made, while others focus on actions (Russell, 1997)

4.1 Technology Acceptance Model

The TAM is used to explain the reasons why people accept or reject new technology (Bradley, 2012). It emphasizes that the system's design affects how much users think it

will help them, how easy it is to use, how users feel about using it, and whether they adopt it (Davis, 1993). It has been applied to various areas, including mobile applications, online services, self-service kiosks, and e-learning (Chen et al., 2012). TAM has evolved and grown over time, resulting in the development of new versions, such as TAM2 (Venkatesh & Davis, 2000) and UTAUT (Venkatesh et al., 2003). With these updates, some novel ideas emerged, such as how social pressure and helpful resources influence the adoption of technology (Masrom, 2007).

4.2 Cognitive Load Theory

Cognitive Load Theory examines how the limits of human thinking impact learning (Sweller, 1994). It focuses on two key ideas: schema acquisition and automation, which mention that learning occurs by organizing information into schemas that become automatic with practice. Second, there are two types of cognitive load: *intrinsic load*, which arises from the complexity of the material itself, and *extraneous load*, which stems from weak instructional design and should be minimized (Kalyuga, 2011). As AI and virtual reality can measure and react to learners' cognitive load, these tools can adapt tasks based on the learner's specific needs (Rodenburg et al., 2018).

4.3 AI and Foreign Language Learning

AI is undoubtedly shaping and transforming language learning by offering tailored learning experiences, interactive practice opportunities, and automated feedback (Chisega-Negrilă, 2023). AI tools accelerate learning by adapting to individual needs, exposing learners to diverse cultures, and utilizing intelligent algorithms to personalize lessons (Rebolledo Font de la Vall & González Araya, 2023). Educators also benefit, as AI simplifies tasks like grading and materials creation, saving more time for more meaningful interactions (Amonova et al., 2023)

4.4 AI in EFL Learning

The utilization of AI in EFL classrooms can have a significant positive effect on learning and teaching as AI tools can make the learning process more effective, reduce challenges in online education, and lead to better student outcomes (Zitouni, 2022) AI tools like *Automatic Evaluation Systems* improve the effectiveness of learning by improving writing and speaking accuracy and providing meaningful feedback,

motivating learners to engage in more practice (Bai & Hu, 2017; Gao, 2021, as cited in Jiang, 2022). In primary EFL contexts, it enhances student participation and fosters natural English interaction (Underwood, 2017). AI chatbots create authentic conversation opportunities, increase motivation, and improve communication skills, generally even more effectively than traditional conversations with peers (Kim et al., 2019, as cited in Jiang, 2022). Furthermore, to make the learning process engaging and supportive, intelligent virtual environments and chatbots can be utilized, thereby reducing anxiety and increasing students' willingness to speak (Chien et al., 2020; Melchor-Couto, 2017, as cited in Jiang, 2022).

4.5 AI and young EFL learners

Not all young learners have the same degree of understanding about AI (Vandenberg & Mott, 2023). Nevertheless, teaching them about AI is both crucial and can be considered age-appropriate (Yang, 2022),and many digital and physical tools are effectively used to get children meet with AI concepts in engaging ways (Gennari et al., 2023) as it can help them improve some fundamental skills (Yang, 2022). For example, generative AI enhances the creativity, problem-solving, and critical-thinking skills of young learners (Putjorn & Putjorn, 2023). Additionally, AI tools improve young EFL learners' speaking skills, boost their confidence in communication, and enhance reading enjoyment and interest (Lee et al., 2023) more than traditional methods do (Fathi et al., 2024). Overall, AI tools have the potential to improve teaching and learning among young EFL learners by strengthening their skills across various areas (Su & Yang, 2022)

4.6 AI and creativity among young EFL learners

Underwood (2017) suggests that AI language assistants, such as Alexa and Siri, enhance student engagement, promoting the natural use of English in learning activities, which in turn increases students' creative skills. Moreover, as it personalizes materials and education by adapting them to students' needs and wants, it enhances creativity and innovation in the process and encourages collaboration and creative problem-solving among kids (Hasibuan & Andina Azizah, 2023). Moreover, it increases creativity because it enables kids to experiment with the language and inspires them to create novel ideas (Putjorn & Putjorn, 2023). Overall, AI has significant potential to nurture creativity in education (Pont-Niclos et al., 2024) and can be designed to support

inclusive learning experiences and creative expression for children (Ragone et al., 2024)

4.7 AI and FLA among young EFL learners

AI makes learning more enjoyable and reduces FLA among many learners, especially through the use of speaking assistants and chatbots (Fathi et al., 2024; Zhang et al., 2024). However, it may also increase anxiety for certain students (El Shazly, 2021). Motivational AI agents can help young EFL learners feel less anxious about learning a foreign language (Parekh et al., 2023). More research is needed to understand how effective AI technologies are in boosting EFL learners' motivation, engagement, and attitude while lowering their learning anxiety (AlTwijri & Alghizzi, 2024).AI platforms provide instant feedback, which helps students overcome common language challenges while fostering a sense of achievement (Yan, 2023, as cited in, Biju et al., 2024). AI-assisted learning environments can significantly lower FLA levels, making language acquisition a more positive and enjoyable experience for young learners (Ali et al., 2023, as cited in Biju et al., 2024).

2.2 Research Results

2.2.1 Creativity among young EFL learners

Creativity among children can manifest in various subjects, depending on the child, and it develops through specific feelings, motivation, and environments (K. Han, 2003; K.-S. Han & Marvin, 2002). Levin (2008) found that emotions and motivation affect creativity, illustrating that high anxiety in competitive environments can decrease creativity, whereas being motivated by personal interest can increase it. It was also found that children often associate creativity primarily with art and may not realize they are being creative in areas such as problem-solving (Levin, 2008). In another study, Hoff (2003) found that there was not only one type of personality for creative kids; kids with high creativity skills could be well-behaved or have trouble adjusting to their environment. In addition, children with detailed imaginary friends were often more creative, but they did not feel as good about themselves. On the other hand, Jailani et al. (2022) reported findings that suggested certain characteristics common in creative children, such as curiosity, independence, and a willingness to take risks. Moreover, activities such as exploring, using their imagination, and engaging in hands-on tasks helped young children develop their creativity.

2.2.2 FLA among young EFL learners

Research reveals that FLA in children is affected by several factors, such as age, gender, and task type, with grammar-focused activities and speaking being significant sources of anxiety when they are learning English (Harputlu et al., 2017). Gürsoy and Akin (2013) found that younger children felt less anxiety when compared to the older ones, and factors such as age, gender, and grade level influenced FLA and its types, such as fear of speaking, worry about being judged, and test-related anxiety (Harputlu et al., 2017). Another study found that 18.2% of students experienced high levels of FLA, particularly related to speaking in English lessons. Additionally, many classroom situations triggered anxiety in other learners, emphasizing the importance of teachers reflecting on their practices that might have contributed to this issue. FLA was shown to exist on a spectrum, with students classified into low, medium, or high anxiety groups (Nilsson, 2019). To measure FLA in children aged 7-12, the CFLAS was created and found to be reliable and valid (Harputlu et al., 2017)

2.2.3 AI usage among young EFL learners

Although limited, research on AI usage among children highlights its potential to enhance learning while revealing mixed perceptions and concerns about privacy and risks (Walan, 2024). Z. Li (2023) noted that children can utilize AI technology to enhance their learning, demonstrating a high interest in learning effectively with AI systems. AI tools used with children and teens included social robots, chat-based assistants, and educational games powered by AI (E. Li et al., 2022), and it was found to support and improve early childhood learning through working on skills like creativity, emotional control, and computational thinking (Su & Yang, 2022). A recent study investigated the effectiveness of integrating AI technologies in enhancing learning among multilingual young learners. The findings revealed that AI-driven language tools, particularly when instructions were provided in learners' native languages, improved comprehension, engagement, sentence formation, pronunciation, vocabulary acquisition, and writing skills (Cizrelioğlu & Aydin, 2024). Walan (2024) posited that young learners have different views about AI, perceiving it as a machine, an idea, or sometimes even a human. However, there was still a lack of research on how young learners viewed and used AI in education (Li et al., 2022; Walan, 2024).

2.2.4 AI and creativity among young EFL learners

Research indicates that AI-based activities enhance creativity and AI literacy in young learners, shaping their perceptions of AI and its potential connection to human creativity (Marrone et al., 2022).AI tools in early education improved children's knowledge of AI, machine learning, and robotics while boosting creativity and computational thinking (Su & Yang, 2022). For example, the PopBots platform for preschoolers demonstrated that young children could comprehend AI concepts such as supervised learning and generative AI, although their perceptions of robots varied according to their age and test performance (Williams et al., 2019). The findings suggested that hands-on projects and storytelling helped children better understand AI concepts and develop a more positive attitude towards them (Khalid et al., 2022). Students thought about the connection between AI and creativity in four main ways: social, emotional, technological, and learning factors. Also, children trained in both AI and creativity viewed the connection between the two through factors such as emotions, technology, and learning (Marrone et al., 2022). Students who had a better understanding of AI tended to feel more positively about using it in classrooms, while those with less knowledge were often apprehensive. Most students understood creativity well and believed that AI could never be as creative as humans, but some thought AI might match human creativity in the future (Marrone et al., 2022).

2.2.5 AI and FLA among young learners

Although there are studies on the effects of creativity activities and AI, the number of studies on how they affect FLA is fairly limited. In El Shazly's (2021) study, it was found that language skills can be improved through AI chatbots; however, this may not have an effect on students' anxiety, as the EFL learners experienced anxiety both before and after the intervention. However, it was a type of anxiety that would positively affect their language learning by motivating them to improve. The use of AI chatbots in the study resulted in a slight increase in anxiety; however, the researchers believed this required further investigation to understand its impact. The study by Lee et al. (2023b) showed that using an AI-based content generator was more effective than traditional English lessons in increasing young learners' enjoyment of learning English and their interest in reading English books. Most students who used the AI tool liked it and supported its use. The study suggested that AI tools like this were helpful in teaching

second languages.

2.2.6 AI, Anxiety, and Creativity

Some studies examine the relationship between AI, creativity, and anxiety, as well as the opportunities and challenges associated with these areas. (Caporusso, 2023) introduced the concept of CDA, which raised the question of whether AI would overshadow human creativity and highlighted the importance of teaching about generative AI to guide learners in using it as a creative partner, thereby helping them adapt to an evolving environment. Additionally, Vinchon et al. (2023) outlined ways in which humans and AI can collaborate creatively, given advancements in AI's ability to generate meaningful outputs (Amabile, 2019). In the EFL context, there was a potential for AI tools to strengthen the learning experience as Wen et al. (2024) shared that students were more likely to use AI for learning English if they expected good results, found it easy to use, felt encouraged by others, and had support, with encouragement from others being the biggest factor. Moreover, Zhang et al. (2024) found that AI-speaking assistants could benefit learners' FLE and WTC and reduce their FLA, as the control group, who did not use the assistant, showed no significant changes in these areas. In addition, Busso and Sanchez (2024) conducted a study with Japanese EFL learners, finding that AI tools reduced anxiety, built confidence, improved fluency in speaking, fostered learners' independence in critical thinking, and encouraged creativity by offering personalized learning experiences.

2.3 Conclusion

The reviewed literature reveals the connection between FLA, creativity, and AI in young EFL learners. Creativity in children relies on several factors, including feelings, motivation, and their environment (Han, 2003; Levin, 2008). It does not show itself best in art but in problem-solving and activities that require physical participation (Han, 2003; Levin, 2008). Like creativity, FLA differs according to age, gender, task type, and difficulty (Aydın et al., 2016; Gürsoy & Akin, 2013). Even though younger learners typically feel less anxious, they still have challenges with activities involving speaking and grammar activities (Aydın et al., 2016; Gürsoy & Akin, 2013). On the other hand, AI tools are promising in supporting learning by enhancing creativity, reducing anxiety,

and making lessons more fun and engaging for learners (Marrone et al., 2022; Su & Yang, 2022). However, more research is needed to better understand how AI can help with both creativity and FLA.

Even though there are studies on creativity, anxiety, and AI separately, there is not a vast amount of literature on how AI simultaneously affects both creativity and anxiety, specifically in young learners. This lack of research underscores the need to investigate how AI can address cognitive and emotional challenges in language learning (Horwitz, 2001; MacIntyre & Gardner, 1994). Moreover, creative tasks boost learners' language production and motivation (Avila, 2015). Nevertheless, research examining the relationship between creativity, anxiety, and AI tools remains scarce, particularly with young learners (Avila, 2015n). Last, studies focusing on the effects of AI on younger learners, especially in terms of regulating anxiety and enhancing creativity, are limited (Al-Shallakh, 2024; Moybeka et al., 2023; Storey & Wagner, 2024). Benefiting from AI tools to address learners' affective factors, such as anxiety, still requires further investigation. More research is needed to understand how AI can affect learning emotionally and cognitively (AlTwijri & Alghizzi, 2024). Therefore, this study aims to explore the lack of research on how AI can simultaneously enhance creativity while reducing anxiety in language learning, offering a clearer understanding of its effect on young learners.

3. METHODOLOGY

In this section, the methodology of the study is detailed. First, the research design and information related to participants are mentioned. Second, the data collection tools are covered, and the procedure is outlined. Lastly, the approaches to analyze the collected data are explained. This section details the methodology of the study, starting with the research design and information about the participants.

3.1 Research Context

To ensure the research is done carefully and accurately, four fundamental research parameters proposed by Seliger and Shohamy (2007) are adopted, as these parameters help researchers to shape the research design. First, an analytical approach is employed in the study, as it isolates anxiety as a distinct and measurable variable. It does not view anxiety as one element among the broader; instead, it is being examined independently to better understand and measure how creative activities make a difference. Second, a deductive method is employed to guide the study, as it utilizes FLA theories as a basis and tests the hypotheses in accordance with this framework. These theories are applied to verify the theoretical expectations related to the relationship between creative activities and anxiety rather than relying on the open-ended nature of heuristic approaches. Third, a manipulated context is employed in the research, as the study design includes specific interventions, such as AI-based creativity activities and the administration of the FLAS scale. However, care was taken to control variables such as participants' age and language proficiency to ensure that these manipulations did not affect the natural classroom environment or usual learning behaviors. Finally, an objective stance is maintained in the study through the Turkish-adapted version of the CFLAS (Aydın et al., 2016), originally developed by Horwitz et al. (1986), which provides standardized and quantifiable data on FLA. As its cultural relevance is already established and provides researchers with a consistent administrative process, the tool strengthens the reliability and generalizability of the findings, thereby reducing researcher bias.

3.2 Participants

The participants were 48 students from the second grade of a private elementary school. Regarding gender distribution, 17 participants (35.4%) were male, and 31 participants (64.6%) were female. The participants were between the ages of eight and nine, with a mean age of 8.06 years (SD = 0.25). Among them, 45 (93.8%) were eight years old, while three (6.3%) were nine. All participants were in the second grade and distributed across four classrooms, with each class comprising either 11 or 15 students (22.9%, 31.3%, 22.9%, and 22.9%, respectively). Students in two of these classes served as the control group, while students in the other two classes formed the experimental group. The rationale behind selecting these groups was their availability and accessibility to the researcher. Each class received 13 hours of English lessons per week, with six hours taught by a Turkish English teacher and seven hours taught by a native English teacher. This included two co-teaching hours, during which another English teacher assisted with station-based activities and remedial exercises. Based on the Cambridge Starters framework, the students' English proficiency level was at A2, with all 48 students (100%) falling within this level.

Additionally, a focus group was established, comprising both experimental and control group participants, to investigate possible explanations for the findings. Each group included four randomly selected students who participated in a 15-minute session. The students were between eight and nine years old, with five girls and three boys participating in the interviews.

Table 1. Frequencies

Variables		N	%
Age	8	45	93.8
	9	3	6.3
	Mean	08.06	
	Sdt. Dev.	0.25	
Gender	Female	31	64.6
	Male	17	35.4
Grade	2	11	22.9
	2	15	31.3
	2	11	22.9
	2	11	22.9
Language Proficiency	A2	48	100

3.3 Tools

A background questionnaire and the CFLAS were used as data collection tools. Following that, a focus group interview was conducted. First, the background questionnaire was administered to collect demographic information (see Appendix A), including age, gender, and class. Second, the CFLAS (see Appendix B) was administered as a pre-test and a post-test to measure the participants' levels of FLA before and after the AI-integrated lessons. This scale was originally developed in Turkish and administered in the participants' native language to ensure the participants' comprehension. To support students during the process, their homeroom teachers were present in the classroom to assist them if they had any questions or required clarification. The scale consists of 18 items, each combining a verbal statement with a corresponding facial expression to help children better understand and relate to the content. The five facial expressions represent a range of emotional responses: *very unhappy, unhappy, neutral, happy, and very happy*.



Figure 1. Sample Items

As the facial expressions were used instead of their corresponding verbal statements, the participants were able to convey their real feelings appropriately according to their developmental stage. As the participants were young and had limited reading comprehension skills compared to older kids, only eight items from the original scale were carefully selected to maintain the children's comprehension and ensure the reliability of the data collected. The used items focused on the students' emotional responses to various classroom situations: "How do you feel when you are well-prepared for English class?", "How do you feel when speaking English in front of your classmates?", "How do you feel during English exams?", "How do you feel when you realize there are many rules to learn in English?", "How do you feel when you do not

understand your teacher's correction?", "How do you feel when you do not understand what your teacher says in English?", and "How do you feel when you forget what you already know in English class?".

A focus group interview was also conducted, and the information collected was carefully analyzed. During the in-person interview, the results of the study were shared with eight students—four from the experimental group and four from the control group. Each group was interviewed separately in sessions that lasted 15 minutes. The students' answers were written down and later examined in detail by the researcher. This analysis aimed to understand the students' views and any differences between the two groups. All personal details were kept private, and the data was shared without using any names. The focus group was designed with a game-based format to better match the developmental level and engagement needs of young learners. Instead of a traditional Q&A style, the sessions incorporated playful elements, including emoji cards, drawing prompts, and sentence-completion games (e.g., "I feel ___ when I draw with AI"). These tools helped students express their feelings more naturally and openly. The game-based approach was particularly effective with the experimental group, who enthusiastically described their AI-assisted activities as fun, exciting, and creative, often comparing them to games.

The original version of the CFLAS demonstrates acceptable levels of validity and reliability. EFA that was conducted using principal component analysis with Varimax rotation, revealed a three-factor structure that supports the construct validity of the scale. These three factors accounted for 48.39% of the total variance, indicating that the scale effectively measures the intended dimensions. In a more detailed analysis, a six-factor solution was also identified, explaining 59.83% of the variance, with the first factor accounting for 22.28%, the second for 39.85%, the third for a cumulative 46.05%, the fourth for 51.50%, the fifth for 55.74%, and the sixth for 59.83%. The eigenvalues, amount of variance explained, and scree test results confirmed that the CFLAS achieved an optimal factor solution. The internal consistency of the overall scale was strong, with a Cronbach's Alpha value of .85 and .84 based on standardized items. Additionally, the reliability coefficients for the subscales were 0.84 for CA, 0.85 for FNE, and 0.86 for test anxiety, indicating that the items are consistent within each factor (Aydın et al., 2016).

3.4 Procedure

After obtaining approval from the Faculty of Educational Sciences Ethics Committee at Istanbul Medeniyet University (see Appendix C), the primary school where the study would be conducted was informed and requested permission. Next, a consent form (see Appendix D) was prepared to be sent to parents, explaining the purpose and application of the study, along with the CFLAS scale. After the parents returned the consent forms, the participants were informed about the study's importance and asked to complete the CFLAS scale as accurately as possible. They were assured that their personal details and answers would remain confidential. The study was conducted during the Spring Semester of the 2024-2025 school year. Two existing second-grade classes were selected as the control group, and two others were designated as the experimental group. Before implementing AI activities in the lesson plans of the experimental group, all students completed the background questionnaire and then the CFLAS scale. For six weeks, three times a week, the experimental group taught lessons using AI-based creativity activities created by ChatGPT. These lessons were based on the PYP units *"How We Organize Ourselves" and "Where We Are in Place and Time."* The lessons were created through ChatGPT using the following prompt: ‘’*I need you to create 35-minute lesson plans that include creativity activities for the PYP topic Where We Are in Place and Time/How we Organize Ourselves.’’*. Meanwhile, the control group continued with the usual lessons planned by their teacher. After six weeks, both groups completed the same scale again.

After the post-tests, a focus group interview was done with eight students, four from each group. They were shown the parts of the results that pertained to their group, and their thoughts and opinions were recorded during a 15-minute discussion. The interviews were conducted in person with each group separately to prevent the groups from influencing each other’s answers. Since young children may have difficulty directly understanding and answering abstract questions, the interviews were designed as game-based focus group sessions. Instead of asking them formal questions, the researcher used playful materials such as emotion cards, drawing activities, and simple sentence-completion games (e.g., “I feel ___ when I use AI to draw pictures”). These tools helped the children express their feelings more comfortably and naturally. Both groups followed the same curriculum, covering the same topics using the same booklet under the guidance of the same teachers. This ensured that the teaching materials, other

than AI creativity lessons, were the same for everyone. Throughout the study, students did not use ChatGPT themselves, as they were underage; however, they observed their teacher using it on the classroom smartboard during lessons.

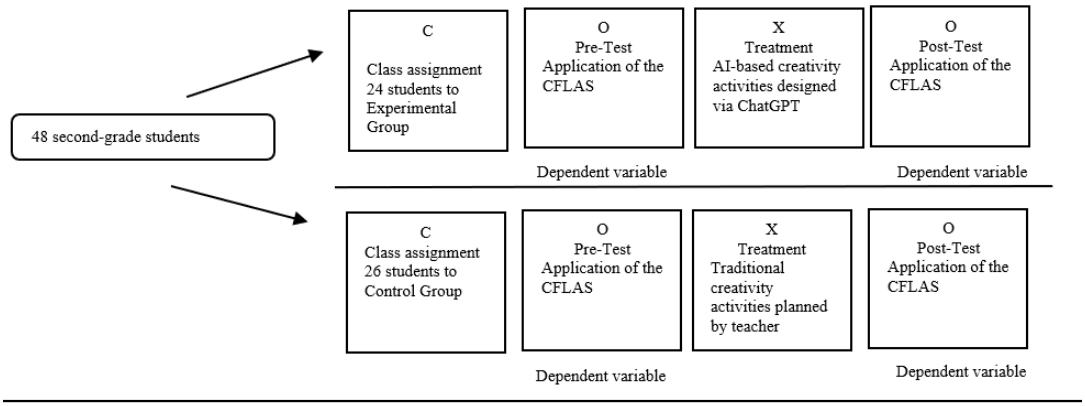


Figure 2. The flowchart of the quasi-experimental pre-test and post-test control and experimental group design adapted from Frankel et al. (2012)

3.4.1 Pre-test administration

Before the main phase of the study, participants completed the background section of the CFLAS, which collected basic information, including age, gender, and grade level. Afterward, they responded to the full CFLAS, consisting of 18 items designed to measure their FLA. Students were encouraged to answer at their own pace and select the options that best reflected their feelings. To ensure full understanding, especially given the participants' young age, the scale was administered in Turkish, their native language. Homeroom teachers were present during the process to provide clarification if any part of the scale was unclear or confusing.

3.4.2. Practice process

Week 1

In the first week of the implementation, three AI-based creativity lessons were conducted with the experimental group. The first lesson was based on "needs vs. wants." The students identified various items through pictures and discussed whether they were needs or wants. Then, they created a list of the items they would like to have, and the teacher used an AI image generator, Canva, to create a "dream store" where each student could see the items they had described. This was followed by a drawing

activity where students presented their store designs. In the second lesson, the students were introduced to the topic of money and currency. Students viewed images of various currencies and different money designs and discussed which countries they represented. Later, the teacher used ChatGPT to design a new currency based on the students' ideas to compare the AI-generated results to real-life currencies. In the last lesson of the week, the students kept talking about money. Using ChatGPT, the teacher generated a story about a coin traveling between countries, which was read and discussed as a class. Students concluded the lesson by writing, drawing, and sharing their "traveling money" stories in groups (see Appendix E).

Week 2

The first lesson of the second week began with pictures of various types of stores to discuss the items that could be purchased at each. They then described the contents of their imagined stores and tried to come up with a name for the store. Later, the students were asked to think about a logo, and when they wrote down what they wanted their logo to look like, the teacher used the Canva AI image tool to generate a logo for their dream store. The lesson concluded with students drawing the interior of their personalized store designs. In the second lesson, students examined shopping lists generated by ChatGPT for various occasions. The shopping lists included missing items, and the students discussed what needed to be purchased in groups. Then, using ChatGPT, the teacher generated simple shopping dialogues, which students practiced in pairs. The lesson concluded with a role-play activity in which students simulated a shopping trip using toy money. The last lesson of the week introduced the concept of budgeting. After showing the students the visuals of full and empty wallets, they used a shopping list created with Canva to plan a pretend shopping trip with a fixed budget. They selected items to "purchase" and created a shopping list illustrating their choices.

Week 3

During the third week, the topic was still about financial literacy. In the first lesson of the week, the students reviewed the AI-generated images created in the previous lessons and discussed potential applications for the money. Then, the teacher used ChatGPT to create a brief dialogue about buying ice cream, allowing students to act it out in pairs. In the second lesson of the week, the concepts of spending, sharing, and saving were

introduced to the students through visual prompts. Then, an AI-generated story about kids managing their money at a fair was shared with the class. Then, the teacher asked ChatGPT to rewrite the story using the names of the kids who were present in the classroom on the day. After they read the story as a class, they illustrated their own versions of how they would spend, save, or share their money. In the final lesson of the week, students discussed wise and unwise spending choices and shared their thoughts on maximizing their financial resources. Next, they engaged with an AI-generated scenario that presented decision-making challenges related to money, followed by a group discussion. The lesson ended with students sharing how they would make thoughtful financial decisions in real life.

Week 4

In the fourth week of implementation, the topic of financial literacy applications remained unchanged. In the first lesson of the week, students viewed an AI-generated image of a busy market and discussed what might be happening. Then, the students shared ideas, and the teacher used ChatGPT to generate a fun shopping adventure story using their ideas. Students then drew and retold their versions of the shopping adventure. In the next lesson, the focus shifted to the concept of sharing money to help others through donations. Students discussed situations where their family had given money or seen others do so, such as donating to charity or helping a friend. The teacher used ChatGPT to create an interactive “option story” (see Appendix E) about a character making thoughtful financial choices, and the class chose the options to continue the story. They then drew how they personally would share money to support others. In the last lesson of the week, students were told about an AI-generated scenario about losing a wallet. Using ChatGPT, the teacher introduced a series of money dilemmas, which students discussed and solved collaboratively in groups. The lesson concluded with students sharing their solutions with their classmates in a brief presentation.

Week 5

In the fifth week, all second-grade students began a new PYP unit titled "Where We Are in Place and Time," focusing on how housing needs are met in different places and times. In the first unit lesson, the experimental group used different types of homes and

tried to describe what they saw using the target vocabulary. Then, they chose an image as a group to create a story about who might live there and drew the people they think are living there. When they were finished, they shared their stories with their classmates. In the next lesson, students worked on different homes built in various locations and had a class discussion on why homes are constructed in specific ways, taking into account environmental factors. Then, they worked in groups and were assigned roles such as architect, city planner, and resident, benefiting from the scenario cards written by ChatGPT to illustrate and design homes that addressed climate and resident needs. Lastly, they presented their designs, and the class voted on awards for the “Coziest Home” and “Strongest House.”. In the last lesson, the students had a discussion about what kind of house they would like to live in and why. Then, they took notes, and the teacher used the Canva AI image generator to generate images of their preferred homes (see Appendix E). Next, they created posters that labeled the parts of the house. Lastly, they presented their posters to their classmates to explain why they chose what they did and what they would have changed in the AI-generated design.

Week 6

In the sixth and final week, the experimental group continued exploring the "Where We Are in Place and Time" unit activities. In the first lesson, students started by exploring how homes around the world are built to be adapted to their specific environments. After the discussion, the teacher leads an AI-guided field trip to places such as Cappadocia, Taos Pueblo, and Hong Kong, where students can observe specific types of houses (see Appendix E). Students asked questions and discussed how climate and materials influence the construction of homes. Then, they made a T-chart in groups to compare the similarities and differences in their living conditions. In the second lesson, after a brief warm-up about different types of homes, students were presented with AI-generated debate prompts, such as "Are apartments better than houses?" Then, they formed teams to prepare arguments with the teacher’s support and held a debate. The last lesson began with visuals of real estate advertisements. After discussing commonalities in all advertisements in terms of language, students created their own home advertisements. After writing their advertisements, they used the Canva AI image generator, with the help of their teacher, to see how the AI would visualize the home they were advertising. The lesson ended with a vote on the most convincing

advertisement.

Throughout the six weeks, the control group studied the same units using traditional classroom methods, such as worksheets, PowerPoint presentations, and teacher-led discussions, without the use of AI tools. After the sixth week, the CFLAS scale was administered as a post-test to both the control and experimental groups.

3.5 Data Analysis

The data collected were analyzed using the SPSS. The mean, maximum, and minimum ages were initially determined. A descriptive analysis was conducted to examine participants' gender, age, and class levels, revealing the mean scores, frequencies, and percentages. Subsequently, the reliability of the data was assessed using Cronbach's Alpha. The reliability coefficient for the overall CFLAS in both the pre-test and post-test was found to be .67. As shown in Table 1, these results indicated that the data were both valid and reliable. Furthermore, the EFA was conducted. Three factors were extracted for the pre-test, explaining a cumulative variance of 59.36%. For the post-test, the factor structure explained 64.43% of the total variance, supporting the construct validity across both measurements.

Table 2. Reliability Analysis

	Reliability Coefficients (Cronbach's alpha)	N of items	% of variance
Pre-test	.67	8	59.36
Post-test	.67	8	64.43

For the data analysis, non-parametric statistical methods were employed, as the small sample size did not permit the assumption of a normal distribution. The analysis started with descriptive statistics to reveal the average scores of the pre-tests and post-tests, aiming to assess the levels of FLA within each group before and after the intervention. Following this, the Wilcoxon signed-rank test was applied to each item on the scale to examine whether there were significant differences in FLA levels between the pre-tests and post-tests for both groups. Finally, the Mann-Whitney U test was conducted to

compare the post-test FLA scores between the control and experimental groups.

A focus group interview was also conducted, and the information collected was carefully analyzed. During the in-person interview, the results were shared with eight students, four from the experimental group and four from the control group. Each group was interviewed separately in 15-minute sessions. The interview was designed in a game-based format to make it easier for young learners to express their thoughts. Instead of formal questioning, the researcher employed playful tools, such as emotion cards, drawing prompts, and sentence-completion activities (e.g., “I feel ___ when I do this activity”), to encourage student participation and comfort. The students’ answers were written down and later examined in detail by the researcher. This analysis aimed to understand the students’ views and highlight any differences between the two groups. All personal details were kept private, and the data was shared without using any names.

4. RESULTS

This section outlines the research questions and presents the findings derived from the data analysis. First, the levels of anxiety among participants are presented. Second, the effects of using traditional creativity activities on young EFL learners' anxiety levels are examined. Third, findings regarding the influence of AI-based creativity activities on learners' anxiety are provided. Then, a comparison is presented between the effects of traditional and AI-based creativity activities in relation to anxiety levels among young EFL learners. Finally, the data from both the control and experimental groups are analyzed and presented.

4.1 What is the Level of Anxiety among Young EFL Learners?

4.1.1 The Anxiety Levels of the Control Group

Table 3 demonstrates the mean scores, standard error, and standard deviation of the pre-tests and post-tests of the control group regarding anxiety levels, indicating that the participants experienced a moderate and stable level of anxiety before and after the implementation of traditional creativity activities. According to the table, the participants showed a moderate level of anxiety before the implementation, with a mean total score of 25.54 (SD = 4.54, SE = 0.89), and a similar level after the implementation, with a mean score of 25.46 (SD = 4.52, SE = 0.89), indicating virtually no change. These scores correspond to average item means of 3.19 (pre-test) and 3.18 (post-test), suggesting consistency across the individual items. On the item " How do you feel when you are very well prepared for English class??", the mean score increased slightly from 4.58 (SD = 0.64, SE = 0.13) to 4.81 (SD = 0.57, SE = 0.11). Regarding " How do you feel when speaking English in front of your classmates?", the score decreased marginally from 4.08 (SD = 1.09, SE = 0.21) to 4.04 (SD = 0.82, SE = 0.16). Overall, the participants maintained similar levels of FLA before and after implementing traditional creativity activities, with only minimal variation observed across individual items.

Table 3. Descriptives for FLA in the Control Group

Item	Pre-test	SD	SE	Post-test	SD	SE
How do you feel when you are very well prepared for English class?	4.58	0.64	0.13	4.81	0.57	0.11

How do you feel when speaking English in front of your classmates?	4.08	1.09	0.21	4.04	0.82	0.16
How do you feel during English exams?	3.69	1.09	0.21	4.00	1.02	0.20
How do you feel when you realize there are many rules you need to learn to speak English?	2.69	1.26	0.25	2.96	1.25	0.24
How do you feel when you don't understand what the teacher corrected?	2.77	0.95	0.19	2.35	0.89	0.17
How do you feel when you don't understand what the teacher says in English?	2.62	1.02	0.20	2.54	0.90	0.18
How do you feel when you make a mistake in English class?	2.42	0.99	0.19	2.54	0.95	0.19
How do you feel when you forget things you know during English lessons?	2.69	1.01	0.20	2.23	0.99	0.19
Mean Score	**3.19**	4.54	0.89	**3.18**	4.52	0.89
Total Score	**25.54**			**25.46**		

4.1.2 Anxiety Levels of the Experimental Group

Table 4 presents the mean scores, standard error, and standard deviation of the pre-tests and post-tests of the experimental group regarding anxiety levels, indicating a slight overall reduction in FLA after the implementation of AI-based creativity activities. As seen in the table, participants had a moderate level of anxiety before the implementation, with a mean total score of 25.46 (SD = 4.53, SE = 0.92), and a slightly lower level of anxiety after the implementation, with a mean score of 25.08 (SD = 4.33, SE = 0.88), indicating a slight decrease. These correspond to average item means of 3.18 (pre-test) and 3.14 (post-test), reflecting a subtle decline in anxiety across the items. For the item " How do you feel when you are very well prepared for English class?", the score increased slightly from 4.58 (SD = 0.65, SE = 0.13) to 4.75 (SD = 0.53, SE = 0.11). A more noticeable change was observed in " How do you feel when you forget things you know during English lessons?", where the score decreased from 2.79 (SD = 0.88, SE = 0.18) to 2.33 (SD = 1.20, SE = 0.25). These results suggest a

slight overall reduction in FLA following the implementation of AI-based creativity activities, particularly in certain affective dimensions.

Table 4. Descriptives for FLA in the Experimental Group

Item	Pre-test M	SD	SE	Post-test M	SD	SE
How do you feel when you are very well prepared for English class?	4.58	0.65	0.13	4.75	0.53	0.11
How do you feel when speaking English in front of your classmates?	3.75	1.11	0.23	4.00	0.78	0.16
How do you feel during English exams?	3.63	1.14	0.23	3.63	1.17	0.24
How do you feel when you realize there are many rules you need to learn to speak English?	2.67	1.17	0.24	2.38	1.24	0.25
How do you feel when you don't understand what the teacher corrected?	2.75	0.99	0.20	2.54	0.78	0.16
How do you feel when you don't understand what the teacher says in English?	2.75	1.26	0.26	2.88	1.15	0.24
How do you feel when you make a mistake in English class?	2.54	0.93	0.19	2.58	1.18	0.24
How do you feel when you forget things you know during English lessons?	2.79	0.88	0.18	2.33	1.20	0.25
Mean	3.18			3.14		
Total Score	25.46	4.53	0.92	25.08	4.33	0.88

4.2 Does the use of traditional creativity activities influence anxiety levels among young EFL learners?

Table 5 displays the Wilcoxon Signed Ranks Test results for the control group's pre-test and post-test anxiety scores, indicating that traditional creativity activities did not result in a statistically significant change in anxiety levels. According to the table, the

participants demonstrated no statistically significant difference in their total anxiety levels before and after the implementation of traditional creativity activities. The total anxiety score produced 19 negative ranks, 26 positive ranks, and 3 ties, with a mean rank of 21.13 and a sum of ranks of 549.50. The test statistic yielded Z = -0.36 and p = .71, indicating that the observed differences were insignificant. These findings suggest that traditional creativity activities did not lead to meaningful changes in the control group's FLA levels.

Table 5. The Wilcoxon Test for the Control Group

Comparison	N	Negative Ranks	Mean Rank	Sum of Ranks	Z	Asymp. Sig. (2-tailed)
Post-test vs. Pre-test Total Anxiety	48	19	21.13	549.50	-0.36	.71

4.3 Does using AI-based creativity activities influence anxiety levels among young EFL learners?

Table 6 presents the Wilcoxon Signed Ranks Test results for the experimental group's pre-test and post-test anxiety scores, indicating that AI-based creativity activities resulted in a statistically significant reduction in FLA. As reflected in the table, the participants showed statistically significant reductions in anxiety following the implementation of AI-based creativity activities. For the item "How do you feel when you realize there are many rules you need to learn to speak English?", the analysis revealed 18 negative ranks, with a mean rank of 18.69 and a sum of ranks of 336.50 (Z = -2.23, p = .02), indicating a significant decrease in anxiety. Similarly, in response to " How do you feel when you forget things you know during English lessons?", 21 negative ranks were observed, with a mean rank of 15.95 and a sum of ranks of 335.00 (Z = -2.62, p = .00). These results suggest that AI-based creativity activities significantly reduced anxiety in specific emotional contexts among young EFL learners.

Table 6. The Wilcoxon Test for the Experimental Group

Item	N	Negative Ranks	Mean Rank	Sum of Ranks	Z	Asymp. Sig. (2-tailed)
How do you feel when you realize there are many rules you need to learn to speak English?	48	18	18.69	336.50	-2.23	.02
How do you feel when you forget things you know during English lessons?	48	21	15.95	335.00	-2.62	.00

4.4 Is there a difference between traditional and AI-based creativity activities regarding anxiety levels among young EFL learners?

Table 7 presents the results of the Mann-Whitney U Test, indicating no statistically significant difference in pre-test anxiety levels between the control and experimental groups. The control group (N = 26) had a mean rank of 24.77 and a sum of 644.00, while the experimental group (N = 22) had a mean rank of 24.18 and a sum of 532.00. The test yielded a Mann-Whitney U value of 279.00, a Z value of -0.14, and a p-value of 0.88. These findings indicate that there was no statistically significant difference in pre-test anxiety levels between the groups, suggesting that both groups began the study at a similar level of FLA.

Table 7. Comparison of the Pre-tests of the Control and the Experimental Groups (Mann-Whitney U Test)

Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
Control	26	24.77	644.00	279.00	-0.14	.88
Experimental	22	24.18	532.00			

Table 8 presents the Mann-Whitney U Test results, revealing no statistically significant difference in post-test anxiety scores between the control and experimental groups. The control group (N = 26) had a mean rank of 24.52 and a sum of 638.00, whereas the experimental group (N = 22) had a mean rank of 24.50 and a sum of 539.00. The Mann-Whitney U value was 284.00, Z = -0.01, and p = .99. These results indicate that there was no statistically significant difference between the post-test anxiety scores of the two groups. Therefore, neither the traditional nor the AI-based creativity activity significantly affected FLA after the intervention.

Table 8. Comparison of the Post-tests of the Control and the Experimental Groups (Mann-Whitney U Test)

Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
Control	26	24.52	638.00	284.00	-0.01	.99
Experimental	22	24.50	539.00			

5. CONCLUSIONS AND DISCUSSION

This section presents the study's conclusions and discussions. It begins by summarizing the key findings and related interpretations. Next, the results are examined in the context of previous research, accompanied by practical suggestions. Then, the study's limitations are addressed. Finally, recommendations for future research, informed by these limitations, are outlined.

5.1. Conclusions

Several conclusions were drawn from the study, which investigates the effect of AI-based creativity activities on FLA in young EFL learners. First, young learners experience an average level of FLA, and this level remains unchanged when they are engaged in traditional creative activities. Second, even though learners felt relieved with the familiarity of the traditional creativity tasks, it does not cause a significant reduction in their FLA levels. Third, creativity activities that AI created faintly decrease overall FLA, especially in emotional areas such as fear of not being able to express their English knowledge or not being able to remember all the grammar rules, indicating that AI-powered tasks help young learners feel more safe and supported when they have to generate ideas or organize their thoughts. Nevertheless, while the kids find these tools emotionally comforting, they are also worried about not fully controlling their creative works. Finally, AI-supported creativity tasks appear to be more beneficial in reducing FLA compared to traditional creativity activities despite both offering unique advantages. Thus, balancing both methods to utilize their strengths and support emotional well-being and language development in the classroom is crucial.

The focus group interviews reveal how students perceive the activities and how these perceptions influence their anxiety about learning a foreign language. To help students express themselves more easily, the focus group interviews employ a game-based format with playful tools, including emoji cards, sorting tasks, and interactive prompts, rather than traditional direct questioning. Learners in the control group mention that they do not feel any difference during the lessons and say the activities are similar to what they usually do in class. They express that they are comfortable but do not feel

more or less anxious about participating in activities in English. When asked about speaking in front of their peers or making mistakes, they say these still make them nervous, but they have grown accustomed to it. Their comments match the test results, which show almost no difference in their anxiety levels. Conversely, participants in the experimental group are more enthusiastic about sharing their comments and show greater interest in the AI-based lessons. All the kids say they have fun using ChatGPT to generate ideas, and they especially like it when ChatGPT turns their descriptions into pictures. They express that these activities make the lessons more fun and surprising and help them feel more confident when speaking or writing in English. While AI tools help lower anxiety and make learning more enjoyable, it is also important to help students feel in control of their work. The focus group results support the numerical data, indicating that AI-based creativity activities have a positive impact on students' emotional experiences in the classroom. Participants in the experimental group report feeling more motivated, curious, and confident, particularly during visual creativity tasks. This suggests that using AI tools helps reduce some parts of FLA by making learning more interactive and supportive. AI, which is efficient at generating ideas, appears to decrease the fear of failure while keeping students engaged. However, some students worry about relying too much on AI, meaning these tools should support rather than replace student thinking. On the other hand, the stable FLA levels in the control group suggest that familiar tasks maintain a feeling of relief but may not reduce anxiety. These results show that AI-based activities support emotional well-being in language learning when balanced with opportunities for student autonomy and reflection.

5.2. Pedagogical Implications

The findings of this study present various crucial implications for young learners' English classrooms regarding how AI-based creativity activities affect the levels of FLA and the children's creative engagement. Although both traditional and AI-based creativity activities help students improve their language use and motivation, the experimental group's anxiety levels decrease to a greater extent, and their emotional regulation improves. This supports earlier findings that connect emotional safety and motivation with stronger creativity and learning outcomes (K. Han, 2003; Levin, 2008). Moreover, the reduction in anxiety levels of the experimental group is found to be slight, again supporting prior research indicating that creative environments can reduce performance anxiety in young learners when assisted by motivating and emotionally

positive experiences (K. Han, 2003; Levin, 2008). For example, learners' fear of forgetting important words or making mistakes during activities decreases as the creative activities written by AI provide a less judgmental and more flexible environment for language production. Furthermore, Su and Yang (2022) state that AI-supported tasks help children develop creativity, emotional regulation, and computational thinking. The experimental group's improvements demonstrate that digital tools can act as scaffolding to help learners manage their emotions and stay motivated. Using AI tools such as ChatGPT may make students feel comfortable in a safer environment, which is important for reducing anxiety in the classroom (Nilsson, 2019; Gürsoy & Akin, 2013). Students are eager to take more risks when interacting with the language, as they want to be as creative as possible during AI-based activities. This aligns with Caporusso's (2023) idea that views AI as a "creative partner" rather than something to fear. In this study, students exhibit a pattern similar to that found by Marrone and colleagues (2022), which suggests that combining AI and creativity leads to a deeper understanding of how their thinking can be supported by technology. The creativity in this study extends beyond art and music, also growing through problem-solving (Levin, 2008; Jailani et al., 2022). These results are specifically important in the IB PYP context, where student agency, creativity, and emotional well-being are key values. Creativity tasks written by AI help create learning experiences that support children's different emotional and thinking needs. They assist with language learning and build important 21st-century skills, such as critical thinking, taking risks, and using technology effectively (Su & Yang, 2022; Williams et al., 2019). Yet, since research in this area remains limited (El Shazly, 2021; Busso & Sanchez, 2024), AI must be used carefully to ensure it is appropriate to students' age and learning needs. Together, these implications can make AI a powerful tool to support both language learning and emotional well-being.

5.3. Practical Recommendations

The findings of this study, combined with the existing literature, provide a foundation for several recommendations for teachers, teacher educators, policymakers, and curriculum designers who aim to support young EFL learners through the integration of AI-based creativity activities. First, AI tools can be integrated into creative language tasks, such as storytelling, drawing, or problem-solving, by teachers as long as they are age-appropriate since they have been shown to increase engagement, creativity, and

emotional regulation (Su & Yang, 2022; Marrone et al., 2022). Second, it can serve as a supportive partner in the classroom, particularly in tasks focused on productive skills, to reduce anxiety triggered by traditional peer interactions (Harputlu et al., 2017; Levin, 2008). To maximize the benefits of AI, students should be gradually introduced to its use through guided and hands-on experiences that foster understanding and confidence (Williams et al., 2019; Walan, 2024). Teachers should benefit from AI-based activities that enhance imagination and self-expression while ensuring these tools complement rather than replace human interaction in the classroom (Caporusso, 2023). Considering that not all learners react the same way to AI tools regarding anxiety levels (El Shazly, 2021), teachers should observe how students respond emotionally and adjust tasks accordingly to create a psychologically safe learning environment. Changing the tasks written by AI according to the learners' language proficiency, confidence, age, and familiarity with technology can further help meet individual needs. Third, now that AI is ubiquitous in our lives, teacher education programs should include modules that teach how to use AI in a pedagogical language learning environment, ensuring that prospective teachers are competent enough to utilize AI as an educational tool in the classroom. Fourth, curriculum designers should integrate modern creativity tasks that are AI-supported and align these activities with developmental and linguistic goals, especially in programs such as IB PYP, which emphasize student agency and holistic development, as well as 21st-century skills. Lastly, policymakers should develop clear guidelines, provide various resources, and offer professional development opportunities for teachers to integrate AI in an ethical and pedagogically appropriate manner in school settings. These suggestions aim to help us utilize AI in a thoughtful and effective manner to support both the emotional and cognitive development of young language learners.

5.4. Limitations

Although providing valuable information, this study also has several limitations. First, as the study employed an analytic approach that focuses on FLA as a separate factor, it may have overlooked the way FLA connects with other personal factors, such as motivation, curiosity, or engagement. Second, using a deductive method based on existing theories may have limited the chances of discovering novel results from the classroom setting. Third, since the research was conducted in a controlled context with

control and experimental groups within a single school that employs the PYP as its curriculum, it may not accurately reflect how AI-based creativity activities work in different school cultures and environments. Fourth, the fact that the study participants were 48 second-grade students from the same school with similar cultural, social, and economic backgrounds may limit the applicability of the results to different age groups, school types, or diverse backgrounds. Fifth, although the CFLAS used as a tool was reliable, only 8 of the original scale items could be used to make the scale easier for learners to grasp; thus, this may have affected the depth of the data collected. Sixth, there were only eight kids who participated in the focus group, which may have limited the variety of student opinions. Lastly, due to the age restrictions on AI tools like ChatGPT, students did not use the tools themselves, which may have affected their personal experience with the tool. To gain a deeper understanding of the full impact of AI-supported creativity activities, future research should include longer-term studies with larger sample sizes and participants from diverse backgrounds.

5.5. Recommendations for Further Research

Considering the evolving nature of this research area and its limited scope, several recommendations can be made for future studies. First, to increase and strengthen the generalizability of findings on the effects of AI-based creativity activities on FLA, studies with larger sample sizes and more diverse participants in terms of social, economic, and cultural backgrounds, as well as different school contexts and various age groups, should be conducted. Second, the duration of the implementation of creativity activities written by AI should be extended in future research, as longer-term studies would provide more accurate results about how AI tools affect the learners' FLA and skills related to creativity over time and if the initial positive reactions are continued, thus it can offer more reliable results on lasting effects of AI integration. Third, merging quantitative data from standardized tools, such as CFLAS, with qualitative data from tools like interviews or observations is strongly recommended. The use of mixed methods would provide more in-depth evidence of learner experiences, validating not only the numerical findings but also the effects of the emotional and behavioral aspects of learning through AI. Fourth, in this study, particularly ChatGPT and Canva were used as AI tools; yet, the role of different types of AI tools, such as different chatbots, image generators, and educational games, should

be investigated in future research to find out their specific contributions to language learning, creativity, and emotional regulation as it might be necessary to find the most effective tools for supporting the needs of young EFL learners. Fifth, learners' familiarity with technology, their opinions about AI, and how their digital skills are developed, along with their emotional responses to these matters, should be explored in future research as understanding the way they feel would help adapt the way of instruction and ensure a safe learning environment to increase the way they benefit from these studies. Lastly, the competence of teachers in implementing AI-based activities should be examined to investigate how teacher training, technological skills, and classroom practices affect the effectiveness of these tools and whether teachers are able to support their students both cognitively and emotionally.

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APPENDICES

Appendix A

Çocuklarda Yabancı Dil Kaygı Ölçeği

Uygulayıcının dikkatine;

Bu ölçek, üç demografik soru ve 18 anket maddesinden oluşmakta ve çocuklarda yabancı dil kaygısını ölçmeyi amaçlamaktadır.

Her bir maddede bir sözel ifade ve bir yüz ifadesi bulunmaktadır. İlk yüz *çok mutsuz*, ikinci yüz *mutsuz*, üçüncü yüz *ne mutlu ne de mutsuz*, dördüncü yüz *mutlu*, beşinci yüz *çok mutlu* anlamına gelmektedir.

Her bir öğrenciye önce sınıfını, cinsiyetini, doğum günü ve yılını sorunuz. Ardından, her bir ifade için sadece bir yüz ifadesi seçmelerini isteyiniz. Gerektiği durumlarda, ifadeleri sesli okuyup işaretlemelere yardımcı olunuz.

A. Demografik Bilgi

Kaçıncı sınıftasın? 2 ( ) 3 ( ) 4 ( )

5 ( ) 6 ( ) 7 ( )

Cinsiyetin nedir? Kız ( ) Erkek ( )

Doğum günün ve yılın nedir? Gün ( ) Ay ( ) Yıl ( )

Appendix B

B. Çocuklarda Yabancı Dil Kaygı Ölçeği

1. İngilizce dersine çok iyi hazırlanınca ne hissediyorsun?	
2. İngilizce dersinin sınavına çok çalıştığında ne hissediyorsun?	
3. İngilizce derslerinde parmak kaldırdığında ne hissediyorsun?	
4. İngilizce dersinde sana söz hakkı verildiğinde ne hissediyorsun?	
5. Bir İngiliz'le konuşaydın ne hissederdin?	
6. İngilizce derslerinde öğretmen sana seslendiğinde ne hissediyorsun?	
7. Arkadaşlarının önünde İngilizce konuşurken ne hissediyorsun?	
8. Derste İngilizce konuşurken ne hissediyorsun?	
9. İngilizce dersinin sınavlarında ne hissediyorsun?	
10. İngilizce konuşmak için öğrenmen gereken çok kural olduğunu gördüğünde ne hissediyorsun?	

11. Öğretmenin düzelttiği şeyi anlamadığında ne hissediyorsun?	
12. İngilizce derslerinde hazırlık yapmadan konuşman gerekince ne hissedersin?	
13. Öğretmenin İngilizce söylediklerini anlamadığında ne hissediyorsun?	
14. İngilizce dersinde hata yapınca ne hissediyorsun?	
15. İngilizce öğretmenin çalışmadığın yerden soru sorunca ne hissedersin?	
16. İngilizce derslerinde bildiğin şeyleri unutunca ne hissediyorsun?	
17. İngilizce konuşurken diğer öğrenciler sana gülecek olursa ne hissedersin?	
18. İngilizce derslerinde başarısız olursan ne hissedersin?	

Appendix C

İSTANBUL MEDENİYET ÜNİVERSİTESİ

T.C.
İSTANBUL MEDENİYET ÜNİVERSİTESİ REKTÖRLÜĞÜ
Rektörlük

Sayı : E-38510686-050.04-2500009760 06.02.2025
Konu : Zerşin İdil Cizrelioğlu'nun Başvurusu

İlgili Makama,

İMÜ Sosyal ve Beşeri Bilimler Etik Kurulu'nun 28.02025 tarihli oturumunda, İMÜ Lisansüstü Eğitim Enstitüsü (Yabancı Diller Eğitimi) yüksek lisans öğrencisi **Zerşin İdil Cizrelioğlu**'nun "Yapay Zeka Tabanlı Ortamlarda Yaratıcılık Etkinliklerinin Çocuklarda Yabancı Dil Kaygısı Üzerindeki Etkileri" başlıklı YL tezi kapsamında (dan. Prof.Dr. Selami Aydın) veri toplanmasına yönelik araştırma dosyası görüşülmüş, içerik bakımından etik bir sorun bulunmadığı sonucuna varılarak kurulun 2025/01 sayılı ve 28.02025 tarihli kararıyla, araştırmacının izin talebi uygun bulunmuştur.

Prof. Dr. Tuncay BAŞOĞLU
Etik Kurul Başkanı

Bu belge, güvenli elektronik imza ile imzalanmıştır.
Belge Doğrulama Kodu: 77UCT4H Belge Takip Adresi: https://www.turkiye.gov.tr/istanbul-medeniyet-universitesi-ebys

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İnternet Adresi: www.medeniyet.edu.tr
Bilgi için : Tuncay Başoğlu
Etik Kurul Başkanı
Telefon No:
Direkt Hat:

Appendix D

VELİLER İÇİN AYDINLATILMIŞ ONAM FORMU

Sayın Veli;

Çocuğunuzun katılacağı bu çalışma, "Yapay Zeka Tabanlı Ortamlarda Yaratıcılık Etkinliklerinin Çocuklarda Yabancı Dil Kaygısı Üzerindeki Etkileri" adıyla, 03 Şubat – 21 Mart 2025 tarihleri arasında gerçekleştirilecek bir çalışmadır.

Araştırmanın Amacı/Hedefi: Yabancı dil öğrenicilerinin kaygı düzeylerini incelemek, geleneksel ve yapay zeka tabanlı yaratıcı aktivitelerin kaygı üzerindeki etkilerini keşfetmek ve bu iki tür aktivite arasındaki kaygı düzeylerindeki farklılıkları araştırmak.

Araştırma T.C. Millî Eğitim Bakanlığı'nın ve okul yönetiminin de izni alınarak gerçekleşmektedir. Araştırma uygulamasına katılım tamamıyla gönüllülük esasına dayalı olmaktadır. Çocuğunuz çalışmaya katılıp katılmamakta özgürdür. Araştırma çocuğunuz için herhangi bir istenmeyen etki ya da risk taşımamaktadır. Çocuğunuzun katılımı **tamamen sizin isteğinize bağlıdır**, reddedebilir ya da herhangi bir aşamasında ayrılabilirsiniz. Araştırmaya katılmama veya araştırmadan ayrılma durumunda öğrencilerin akademik başarıları, okul ve öğretmenleriyle olan ilişkileri etkilemeyecektir.

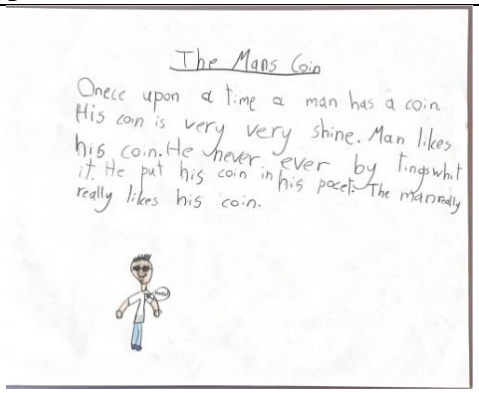
Çalışmada öğrencilerden kimlik belirleyici hiçbir bilgi istenmemektedir. Cevaplar tamamıyla gizli tutulacak ve sadece araştırmacılar tarafından değerlendirilecektir.

Uygulamalar, genel olarak kişisel rahatsızlık verecek sorular ve durumlar içermemektedir. Ancak, katılım sırasında sorulardan ya da herhangi başka bir nedenden çocuğunuz kendisini rahatsız hissederse cevaplama işini yarıda bırakıp çıkmakta özgürdür. Bu durumda rahatsızlığın giderilmesi için gereken yardım sağlanacaktır. Çocuğunuz çalışmaya katıldıktan sonra istediği an vazgeçebilir. Böyle bir durumda veri toplama aracını uygulayan kişiye, çalışmayı tamamlamayacağını söylemesi yeterli olacaktır. Anket çalışmasına katılmamak ya da katıldıktan sonra vazgeçmek çocuğunuza hiçbir sorumluluk getirmeyecektir.

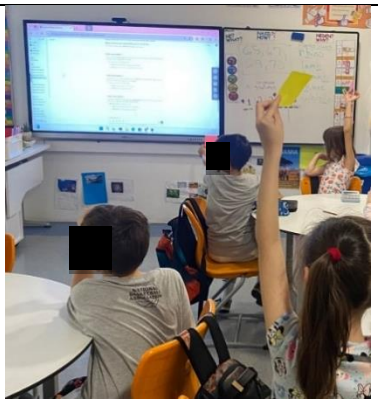
Onay vermeden önce sormak istediğiniz herhangi bir konu varsa sormaktan çekinmeyiniz.
Çalışma bittikten sonra bizlere telefon veya e-posta ile ulaşarak soru sorabilir, sonuçlar hakkında bilgi isteyebilirsiniz. Saygılarımızla,

Sorumlu Araştırmacı Bilgileri: (Zerşin İdil Cizrelioğlu, [redacted] İletişim bilgisi: (i[redacted]tr)
Velisi bulunduğum ……. sınıfı ……. numaralı öğrencisi ……'ın yukarıda adı ve açıklamaları yazılı araştırmaya katılmasına izin veriyorum. Veli Adı ve Soyadı İmza İletişim bilgisi:

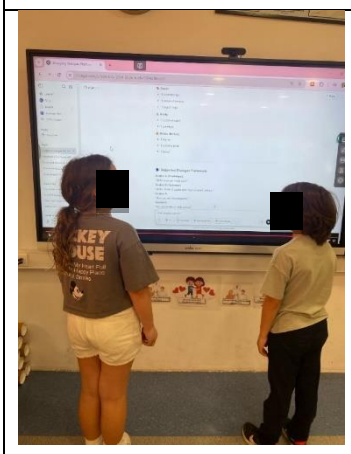
Appendix E



Writing and illustrating a story inspired by a ChatGPT-generated text



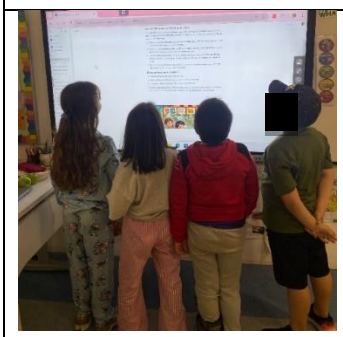
Choosing options in an interactive ChatGPT donation story



Practicing shopping dialogues using ChatGPT-generated lists



Generating dream home images using Canva AI and presenting labeled posters



Reading and personalizing an AI-generated story about money choices at a fair



Participating in an AI-guided virtual house tour and comparing findings

Appendix F

Week & Lesson	Activity Theme	Implementation	Purpose	AI-based Creativity Task
Week 1, Lesson 1	Needs vs. Wants	Students identified various items through pictures and classified them as needs or wants. They made personalized lists of items they wanted.	Fostering vocabulary development, categorization skills, and critical thinking around values	Using Canva AI to generate a personalized "dream store" with items chosen by each student
Week 1, Lesson 2	Money and Currency	Students explored global currencies through images and discussed the countries of origin of these currencies. ChatGPT was used to design a new currency based on their ideas.	Encouraging cross-cultural awareness and creativity in understanding economic systems	Using ChatGPT to generate a fictional currency design based on student input
Week 1, Lesson 3	Traveling Money Story	The teacher read a story generated by ChatGPT about a coin's journey. Students wrote and illustrated their own versions in groups and shared them.	Enhancing storytelling, imagination, and perspective-taking within an economic context	Using ChatGPT to inspire student-generated travel stories about money across countries
Week 2, Lesson 1	Dream Store Logo	Students viewed pictures of various stores and discussed their contents. They described and named their own imagined stores and designed logos with Canva AI.	Developing visual literacy and descriptive writing by personalizing store-related content	Using Canva AI to generate dream store logos based on student descriptions
Week 2, Lesson 2	Shopping Dialogues	Students examined ChatGPT-generated shopping lists, identified missing items, and discussed them in groups. Then, they practiced AI-generated shopping dialogues and role-played a store visit.	Reinforcing listening, speaking, and collaborative skills through realistic English conversations	Practicing AI-assisted dialogues and role-playing with contextual visuals and prompts
Week 2, Lesson	AI Supermarket	Students explored	Strengthening	Using Canva

3	& Budgeting	visuals of wallets and planned a pretend shopping trip with a fixed budget using a Canva-generated shopping list. They selected and illustrated items to "buy."	budgeting awareness and decision-making within a language-rich scenario	to generate shopping lists for a pretend shopping experience with a set budget
Week 3, Lesson 1	Money in Daily Life	Students reviewed previous AI-generated images and discussed where and how money is used. Then, they acted out a short dialogue about an ice cream shop, generated by ChatGPT, in pairs.	Reinforcing financial vocabulary and functional language through realistic dialogues	Using ChatGPT to create short shopkeeper-customer dialogues for student role-plays
Week 3, Lesson 2	Spending, Saving, Sharing	Students were introduced to the concepts of spending, saving, and sharing through visuals. An AI-generated story about kids managing money at a fair was shared and then personalized with students' names. They illustrated how they would handle their own money.	Encouraging personal financial awareness and creative expression through storytelling	Using ChatGPT to personalize a money management story and inspire student-created illustrations
Week 3, Lesson 3	Wise Spending Choices	Students discussed the difference between wise and unwise spending decisions. They engaged with an AI-generated scenario posing financial dilemmas and shared their choices in groups.	Promoting decision-making, critical thinking, and responsible money habits	Exploring an interactive AI-generated scenario on money choices and discussing solutions
Week 4, Lesson 1	Shopping Adventure	Students viewed an AI-generated image of a busy market and discussed what might be happening.	Encouraging narrative skills and creative thinking through shared and personalized	Using ChatGPT to generate a custom shopping

		Then, ChatGPT was used to create a class story based on student ideas. Students drew and retold their own versions of the adventure.	storytelling	adventure story based on student input
Week 4, Lesson 2	Sharing & Donations	Students discussed personal experiences with sharing or donating money. The teacher utilized ChatGPT to create an interactive story that included financial choices. Students decided the story's direction and illustrated their personal take on charitable giving.	Promoting empathy, values education, and decision-making related to money	Using ChatGPT to create an "option story" with decision points about sharing or donating money
Week 4, Lesson 3	Solving Money Dilemmas	Students engaged with an AI-generated scenario about losing a wallet. They discussed a series of money-related dilemmas and worked in groups to find solutions, then shared them with classmates.	Developing collaborative problem-solving and real-world financial thinking	Using ChatGPT to present dilemmas that students solve and respond to in group presentations
Week 5, Lesson 1	Housing Around the World	Students viewed images of different types of homes and described them using target vocabulary. In groups, they chose one image, created a story about who might live there, drew the characters, and shared their stories with the class.	Building descriptive vocabulary, narrative skills, and cultural awareness through visual prompts	Using ChatGPT to support storytelling and Canva AI to generate images of the chosen homes
Week 5, Lesson 2	Climate and House Design	Students discussed why homes are built differently in various environments. In groups, they	Encouraging collaboration, design thinking, and understanding environmental influences on	Using ChatGPT-generated scenario cards to guide the

		assumed roles (e.g., architect, planner, resident) and used ChatGPT scenario cards to design homes suited to specific climates. They presented their designs and voted on awards.	housing	creation of environment -adapted home designs
Week 5, Lesson 3	My Ideal Home	Students discussed and took notes on what kind of home they'd like to live in. The teacher used Canva AI to generate images of their descriptions. They created posters labeling house parts and presented their ideas, including the changes they would make.	Enhancing self-expression, reflection, and presentation skills while reinforcing housing vocabulary	Using Canva AI to generate images of students' ideal homes for labeled posters and presentations
eek 6, Lesson 1	Homes & Environments	Students discussed how homes are adapted to different environments. The teacher-guided an AI-powered virtual field trip (e.g., Cappadocia, Taos Pueblo, Hong Kong). Students asked questions and then created T-charts to compare global housing with their own.	Promoting global awareness and environmental understanding through comparative analysis	Using AI tools to explore global homes and generate comparisons through guided virtual tours
Week 6, Lesson 2	Housing Debate	After a warm-up on home types, students received AI-generated debate prompts, such as "Are apartments better than houses?" They worked in teams to prepare arguments and conducted class debates.	Developing critical thinking, speaking, and listening skills through structured argumentation	Using ChatGPT to generate debate prompts and support argument planning
Week 6, Lesson 3	Real Estate Ad Creation	Students examined real estate	Building persuasive writing and	Using Canva AI to

		advertisements, discussed persuasive language, and wrote their own ads. Then, they input their descriptions into Canva AI to see visual versions of their advertised homes. The class voted on the most convincing ad.	presentation skills; reinforcing descriptive vocabulary	generate home images based on student-created real estate advertisements

Özgeçmiş

KİŞİSEL BİLGİLER

Adı Soyadı: Zerşin İdil Cizrelioğlu

Uyruğu: T.C.

EĞİTİM

Derece	**Kurum**	**Mezuniyet Yılı**
Lisans	Marmara Üniversitesi, Atatrük Eğitim Fakültesi, İngilizce Öğretmenliği	2022
Yüksek Lisans	İstanbul Medeniyet Üniversitesi, Lisansüstü Eğitim Enstitüsü, İngiliz Dili Eğitimi	Devam ediyor

İŞ TECRÜBESİ

Tarih	**Kurum**	**Görev**
2022-2023	Bilfen Ataşehir İlköğretim Okulu	İngilizce Öğretmeni
2023-Halen	Irmak Okulları	İngilizce Öğretmeni

YABANCI DİLLER

İleri düzeyde İngilizce