



GRADUATE SCHOOL
ISTANBUL MEDENİYET UNIVERSITY
DEPARTMENT OF FOREIGN LANGUAGE EDUCATION

**The Impact of AI-Based Chatbots on Speaking Anxiety
Among EFL Learners**

Master's Thesis

Meltem Ballıdağ

June 2024



GRADUATE SCHOOL
ISTANBUL MEDENİYET UNIVERSITY
DEPARTMENT OF FOREIGN LANGUAGE EDUCATION

**The Impact of AI-Based Chatbots on Speaking Anxiety
Among EFL Learners**

Master's Thesis

Meltem Ballıdağ

Supervisor

Prof. Dr. Selami Aydın

June 2024

THESIS JURY APPROVAL

This MA thesis titled “The Impact of AI-Based Chatbots on Speaking Anxiety Among EFL Learners” written by Meltem Ballıdağ at the Department of Foreign Language Teaching was accepted by our jury.

JURY MEMBERS

SIGNATURE

Supervisor:

Prof.Dr.Selami Aydın

Istanbul Medeniyet University

Other Jury Members:

Asst. Prof. Ferdane Denkci Akkaş

Istanbul Medeniyet University

Assoc. Prof. Burcu Ünal

Yıldız Technical University

Date of Defense: 26/ 06 / 2024

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 (7th Edition) 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.

Meltem Ballıdağ

GENİŞ ÖZET

Yapay Zekâ Tabanlı Sohbet Robotlarının İngilizceyi Yabancı Dil Olarak Öğrenenlerdeki Konuşma Kaygısına Etkisi

Ballıdağ, Meltem

Yüksek Lisans Tezi, Yabancı Diller Eğitimi Anabilim Dalı

Danışman: Prof. Dr. Selami Aydın

Haziran 2024

Yabancı dil öğrenimi dört temel beceri üzerine kuruludur ve bunlar konuşma, yazma, okuma ve dinleme becerileri olarak sıralanır. Yabancı dil olarak İngilizce öğreniminde konuşma becerisi edinilmesi gereken önemli bir beceridir ve dil öğreniminde çok önemli bir yere sahiptir. Öncelikle, öğrenciler dili iletişim kurmak için kullanarak öğrenirler (Richards ve Rodgers, 2014). Dahası dil edinimi akranlarla, öğretmenlerle ve diğer profesyonellerle etkileşim yoluyla gerçekleşir (Çakıroğlu, 2018). Ayrıca, öğrenciler, Bachman ve Palmer (1996) tarafından 'güncel bilgi' veya Chapelle ve diğerleri tarafından (1997) 'dünya bilgisi' olarak da adlandırılan dünyaya ilişkin bilgiyi uygulama kapasitelerini konuşma becerileriyle arttırır. İngilizceyi yabancı dil olarak öğrenen öğrenciler sınırlı bir dünya bilgisine sahiptirler ve yabancı dilde konuşma becerisi öğrencinin dünya bilgisini kullanmadaki kapasitesini arttırır. Eğer öğrenci aktif olarak sosyal etkileşimlere giriyorsa konuşma becerileri gelişir ve aynı zamanda dünya bilgisini uygulama kapasitesi artar. Son olarak, konuşma becerileri öğrencinin toplam dil gelişimini büyük ölçüde etkiler ve eğer konuşma becerileri iyi gelişmişse öğrenciler diğer dil becerilerinde daha iyi performans gösterirler (Rahimi ve Fathi, 2022). Sonuç

olarak, konuşma becerileri öğrencilerin dil yeterliği hakkında bize bilgi verir ve öğrencilerin akademik başarıları için de bu büyük önem arz eder.

Konuşma diğer dört beceri arasında en zor becerilerden biri olarak kabul edilir ve bu yabancı dil olarak İngilizceyi öğrenen öğrenciler arasında bazı sorunlara sebep olabilmektedir. Konuşma sürecini etkileyen faktörler arasında konuşma kaygısı önemli bir yere sahiptir. Krashen'in (1982) belirttiği gibi, anlamlı girdinin öğrenmeye yön vermesi için öğrenenlerin duyuşsal filtrelerinin azaltılması gerekir. Kaygı, öğrencilerin sadece konuşma yeteneğini etkilemez, aynı zamanda mesajları anlama konusundaki bilişsel süreçlerini de olumsuz etkiler. Bu nedenle, kaygıya bağlı bilişsel durumlar, bilginin ve performansın işlenmesini engelleyecektir çünkü kaygılı düşünceler bilişsel kaynakları engelleyebilir ve bu da ortak bilişsel talepleri karşılama kapasitesinin sınırlı olmasına neden olabilir (He, 2018). Bunlara ek olarak farklı görevler ya da zihinsel süreçler arasında geçişlerdeki kapasite de kaygıdan olumsuz yönde etkilenmektedir.

İngilizceyi yabancı dil olarak öğrenen öğrencilerdeki konuşma kaygısını azaltabilmek için günümüzde İngilizce sınıflarında birçok yenilikçi yaklaşım, yöntem, teknik, prosedür, araç ve ortamlar kullanılmaktadır. Bunlardan birisi teknolojinin öğrenme sürecine dahil edilmesidir. Dil öğreniminde teknolojinin nasıl destekleyici ve yön verici bir rol oynadığı bilinmektedir. Teknoloji kullanımının konuşma kaygısı üzerindeki etkilerini ortaya çıkarmak amacıyla birçok araştırma yapılmıştır. Örneğin, Hamzaoglu ve Koçoğlu (2016), sesli blogların İngilizce konuşma kaygısı üzerindeki etkisini araştırmışlardır ve

sesli blog dinleyen öğrencilerin sunumlarda daha iyi bir performans sergilediklerini ve izleyici önünde konuşurken daha az kaygı yaşadıklarını bulmuşlardır. Benzer şekilde, Madzlan ve arkadaşlarının araştırması (2020) video bloglarının öğrencilerin İngilizce konuşma kaygısında olumlu bir etkisi olduğunu ortaya koymuştur. Öte yandan, Pınar ve Uzun (2019) Skype kullanımının İngilizce konuşmak kaygısı üzerindeki etkilerini incelemişlerdir ve Skype’da yapılan görüşmelerin İngilizce konuşma kaygısını azalttığı bulunmuştur. Bir başka çalışmada ise, Tuyet ve Khang (2020) Flipgrid uygulamasının öğrencilerin İngilizce konuşma kaygısını azalttığını bulmuşlardır. Son olarak, Bashori ve arkadaşları (2021) araştırmalarında otomatik konuşma tanıma sistemlerinin ve Chen (2022) ise bir web sitesi ve Orai adlı bir sanal gerçeklik uygulamasının İngilizce konuşma kaygısını azaltmada önemli bir etkiye sahip olduklarını ortaya koymuşlardır. Son teknolojik gelişmelerle beraber yapay zekâ da dil öğrenme sürecine dahil olmuştur. Yapay zekâ tabanlı sohbet robotları da dil öğrenme sürecinde yerini almaya başlamıştır ve öğrencilere İngilizceyi pratik yapabilecekleri ortamlar sunarlar. Bibauw ve arkadaşları (2019) ve Luckin ve Holmes (2016) yapay zekâ kullanan sohbet robotlarını bir çeşit bilgisayar destekli dil öğrenme sistemi olarak tanımlar. Öte yandan, Smutny ve Schreiberova (2020) ise sohbet robotlarını kullanıcıları gerçekçi sohbetlerde etkileşime geçiren bir yazılım aracı olarak tanımlar. Yapay zekâ tabanlı sohbet robotları öğrencilerin özellikle dinleme ve konuşma becerilerinin gelişimine katkıda bulunduğu gözlemlenmektedir. Öncelikle sohbet robotları, öğrencileri anlamlı dil

görevleriyle meşgul ettiğinden ve onların daha derin bir katılıma sahip olmalarını sağladığından, konuşma için destekleyici ve teşvik edici bir ortam olarak hizmet edebilir (Bibauw ve arkadaşları, 2019). Sohbet robotları dil öğrenenlere hedef dili gerçek bir insanla konuşuyormuş hissiyatını veren ortamlar sağlar. Böylece öğrenciler sohbet robotlarındaki bu sosyal benzeri aktivitelerde kendi dilleri ile sohbet arkadaşlarının hedef yapıları arasındaki boşluğu fark ederler (Lee, 2019). Sohbet robotları öğrencilere bireyselleşmiş deneyimler sunar ve bu da öğrencinin eğitimlerini kendi programlarına, hedeflerine ve hızlarına göre kendilerini yönetmelerine olanak tanır, öğrenmeyi zaman ve yer kısıtlamaları olmadan günlük hayata entegre eder (Zhang & Zou, 2020). Diğer yandan, öğrencilerin sohbet robotlarında sahip oldukları bu imkanlarla dil öğrenimi ile ilgili kaygıları azalır çünkü sohbet robotları sıkılmadan ve sabırsızlanmadan aynı konunun üzerinden tekrar tekrar geçmeye hazırdır (N.-Y. Kim, 2016). Dahası öğrencileri eleştirmeden veya yüksek riskli raporlarla baskı yapmadan veriye dayalı kararlar alarak değerlendirebilirler (Bibauw ve arkadaşları, 2019) ve bu da öğrencinin kendini daha rahat hissedip kaygıdan uzaklaşmasına zemin hazırlar. Son olarak, sohbet robotları öğrencilerin kaygı düzeylerini azaltarak öğrencilerin dil öğreniminde özgüvenlerini artırmalarına yardımcı olur ve bu da yabancı dil becerilerinin gelişmesini sağlar (N.-Y. Kim ve arkadaşları, 2019). Özet olarak, öğrenci; konuşma aktivitelerinde kaygısını yenmede ne kadar başarılı olursa o kadar çok özgüven geliştirir ve bu da o dili daha rahat konuşup kendini daha iyi ifade etmesini sağlayacaktır. Bu noktada, yapay zekâ tabanlı sohbet

robotları İngilizceyi yabancı dil olarak öğrenenlere olanaklar sunmaktadır. Ancak, sohbet robotlarının Türkiye'deki Yabancı dil olarak İngilizceyi öğrenen öğrencilerin konuşma kaygısı üzerindeki etkisine dair çok sınırlı sayıda çalışma yapılmıştır. Bu nedenlere dayanarak, sohbet robotlarının kullanımı ile İngilizce konuşma kaygısı arasındaki ilişkinin üzerinde durulmalıdır.

Bu çalışma, sohbet robotlarının İngilizce konuşma kaygısı üzerindeki etkilerini araştırmayı hedeflemektedir. Ek olarak, yabancı dil olarak İngilizce öğrenen Türk öğrencilerin İngilizce konuşma kaygısının incelenmesi ve konuşma kaygısı açısından geleneksel sınıf içi yüz yüze akranlarıyla gerçekleştirdikleri konuşma aktiviteleri ile bir sohbet robotuyla yaptıkları konuşma aktivitelerinin karşılaştırılması da amaçlanmaktadır. Bu yarı deneysel çalışmada, veriler bir arka plan anketi ile Aydın ve arkadaşları (2016) tarafından Türkçe versiyonu oluşturulan Horwitz ve arkadaşlarının (1986) geliştirdiği yabancı dil sınıf kaygısı ölçeği aracılığıyla toplanmıştır. Yaş,cinsiyet,bölüm adları gibi bilgileri içeren demografik bilgiler toplanmıştır. Ardından 18 maddelik anket ile katılımcıların İngilizce konuşmaya ilişkin sorulara yanıtları alınmıştır. Çalışmaya toplamda 44 İngilizce hazırlık öğrencisi katılmıştır ve bu katılımcılar kontrol ve deney grupları olarak rastgele ikiye ayrılmıştır. Araştırmanın başında her iki gruba da ön test verilmiştir. Çalışma süresince her iki grup da altı hafta boyunca konuşma aktiviteleri yapmıştır. Kontrol grubundaki katılımcılar, bu konuşma aktivitelerini sınıf içinde arkadaşlarıyla yüz yüze tamamlamışken, deney

grubundakiler bir sohbet robotunu kullanmışlardır. Araştırmanın bitiminde her iki gruba da son test uygulanmıştır. SPSS kullanılarak yapılan Analizler sonucunda elde edilen bilgilere göre kontrol grubunun uygulama öncesinde ve sonrasında orta seviyede konuşma kaygısına sahip olduğu görülmüştür. Çalışmadan sonra kontrol grubun konuşma kaygısında istatistiksel olarak anlamlı bir fark görülmüştür. Ek olarak, kontrol grubu uygulamadan sonra İngilizce konuşurken kendilerini daha rahat hissettiklerini belirtmiştir. Ek olarak, katılımcılar öğretmenin İngilizce söylediği bir şeyi anlamadıklarında eskisine göre daha az kaygılandıkları da madde analizlerinde ortaya çıkmıştır. Benzer şekilde, deney grubunun da çalışma öncesinde ve sonrasında orta seviyede konuşma kaygısına sahip olduğu görülmüştür. Yapay zekâ tabanlı sohbet robotları ile yapılan konuşma aktivitelerinden sonra deney grubunun konuşma kaygılarında ufak bir düşüş görülmesine rağmen, bu istatistiksel olarak anlamlı değildir. Fakat madde bazında yapılan analizlere göre deney grubunun çalışmadan sonra İngilizce konuşurken kendilerinden daha emin oldukları ortaya çıkmıştır. Son testler kıyaslandığında üç maddede deney grubunun kontrol grubuna göre kaygı seviyelerinin daha yüksek olduğu ortaya çıkmıştır. Bunlar, yabancı dil derslerinde konuşurken kendilerinden emin olamamaları, onlara söz verildiğinde titremeleri, ve diğer öğrencilerin yabancı dili onlardan daha iyi konuştuklarını hissetmeleridir. Özet olarak, yapay zekâ tabanlı sohbet robotları ile yürütülen konuşma aktivitelerinin İngilizceyi yabancı dil olarak öğrenen Türk öğrencilerinin konuşma kaygısı

üzerinde bir etkisinin olduğu ancak bu etkinin anlamlı bir fark yaratmadığı ortaya konulmuştur.

Bu çalışmadaki sonuçlara bakarak öğretmenlerin yapay zekâ tabanlı sohbet robotlarının hem olumlu hem olumsuz yanlarının farkında olmaları gerekmektedir. Bu platformlar, öğrencilerin konuşma becerilerini geliştirmeye yardımcı olmak ve konuşma kaygılarını azaltmak için geleneksel öğrenmenin yanı sıra destekleyici ve tamamlayıcı araçlar olarak kullanılmaları önerilmektedir. Araştırma sonuçlarına göre bu sohbet robotları öğrencilerin konuşma kaygılarını düşürmede sınıf içinde yürütülen geleneksel konuşma aktivitelerinden daha az etkili olduğu çıksa da bu platformların farklı öğrenme ortamları sunarak farklı sonuçlar ortaya çıkardığını vurgulamak önemlidir. Bu nedenle, öğretmenler sohbet robotlarını sınıf dışı dil pratiği yapma aracı olarak değerlendirebilir ve öğrencilerin konuşma kaygılarının düşmesine yardımcı olabilir. Bu noktada, öğretmenlerin sohbet robotlarının faydalarını ve kullanımdaki olası zorlukları doğru ve dengeli değerlendirmeleri gerekmektedir. Ayrıca, buna uygun çözümler bularak okul dışı öğrenme kapsamında öğrenciler teşvik edilmelidir. Farklı sohbet robotları araştırılması ve kıyas yapılarak öğrenciler yönlendirme anlamında öğretmenler lider rolü üstlenmeleri gerekmektedir. Kurumlar ise öğrencilere sınıf dışında İngilizce konuşma pratiği yapma fırsatı yaratacak yeni ortamlar yaratmak için öğretmenlerle işbirliği içinde olmalıdırlar. Bu bağlamda, yapay zekanın ve yapay zekâ tabanlı sohbet robotlarının dil öğrenme sürecine dahil etmeyi konu alan seminerler ve atölye çalışmaları düzenlemelidirler. Bu sayede,

öğretmenler teknolojiye yaşanan son gelişmelerden haberdar olabileceklerdir ve öğretmenler kendi aralarında yapabilecekleri fikir alışverişiyle belki de bir çok yeni fikir bulabilecek ya da önerilen uygulamaların eksiklerine beraber çözümler bulabilecektir. Sadece kurumlar değil müfredat tasarımcıları da müfredatlarını şekillendirirken konuşma aktivitelerinin kitaplarda yeterince yer aldığına emin olmalıdırlar. Öğrencilerin konuşma becerilerini destekleyecek kadar konuşma aktiviteleri yoksa eğer müfredatlarına daha çok konuşma aktiviteleri eklemelidirler. Son olarak, İngilizceyi yabancı dil olarak öğrenen öğrencilerin temel problemi İngilizce konuşurken kendilerini yeterince rahat hissedememeleridir ve sınıf içi konuşma aktivitelerinin öğrencilerin konuşma kaygısını azaltmada önemini göz önünde bulundurularak hareket edilmesi gerekmektedir. Bir diğer önemli problemleri ise okul dışında yeterli konuşma pratiğine sahip olamamalarıdır ve bu problemi çözmede sohbet robotları öğrencilere birçok imkân sunar ve aynı zamanda konuşma kaygılarını yenmede de yardımcı olabilir. Dengeli ve dikkatli bir planlama ile İngilizceyi yabancı dil olarak öğrenen Türk öğrencilere yardımcı olunabilir.

Anahtar Kelimeler: konuşma kaygısı, İngilizceyi yabancı dil olarak öğrenen öğrencilerin konuşma kaygısı, İngilizceyi yabancı dil olarak öğrenen öğrenciler, yapay zekâ tabanlı sohbet robotları, geleneksel konuşma aktiviteleri

ABSTRACT

The Impact of AI-Based Chatbots on Speaking Anxiety Among EFL Learners

Master's Thesis, Department of Foreign Language Education

Supervisor: Prof. Dr. Selami Aydın

June 2024

Speaking anxiety plays a crucial role in English as a foreign language learning (EFL), and several studies demonstrate that English speaking anxiety is one of the remarkable problems that learners experience during the speaking process. One of the efficient ways to alleviate speaking anxiety is the inclusion of technology in EFL contexts. Thanks to recent improvements in technology, AI-based chatbots provide EFL learners with many speaking opportunities. However, there have been a very restricted number of studies carried out on the impact of AI-based chatbots on speaking anxiety among EFL learners, especially in the Turkish context. Therefore, this study aims at unearthing the possible impacts of chatbots on EFL learners' speaking anxiety. Additionally, it also seeks to investigate Turkish EFL students' anxiety levels and to make a comparison between traditional and AI-based chatbot speaking tasks in terms of speaking anxiety. In this quasi-experimental study, 44 students participated and they were divided equally into experimental and control groups. The experimental group was assigned to conduct speaking tasks through an AI-based chatbot called Call Annie, and the control group was assigned to carry out the speaking tasks with their peers in the classroom. The data was gathered through a background questionnaire, and the Turkish version of the

Foreign Language Classroom Anxiety Scale (FLSCA) by Aydın et al., (2016). The SPSS version 25 was used to analyze the data. The findings revealed that the AI-based chatbot speaking tasks did not significantly reduce learners' anxiety. However, traditional speaking activities with peers in the classroom significantly decreased learners' speaking anxiety. As a result, it is recommended that teachers should not be over-reliant on AI-based chatbots by also being aware of the potential benefits of traditional speaking tasks in the classroom.

Keywords: speaking anxiety, EFL speaking anxiety, EFL learners, AI-based chatbots, traditional speaking tasks

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my thesis supervisor Prof. Dr. Selami Aydın for his great company in my Master of Arts (MA) journey and all the things I have learned from him. I would like to express my sincere gratitude to him for his support, encouragement, and guidance throughout the whole process. Above all, his prompt and insightful feedback has been invaluable for me in shaping my research. Also, I feel grateful to him for the time he has spared so generously for us.

I also would like thank the jury members in my thesis defence for their invaluable feedback. Besides, I would like to express my special gratitude to Asst. Prof. Ferdane Denkci Akkaş, for the fruitful and enjoyable classes that we had with her. I consider myself privileged to have been her student as I benefited from her excellence both as a teacher and as a student. I would also like to thank Lect. Dr. Derya Oruç, and Lect. Dr. Abdullah Yıldız for their precious contributions to my personal and professional growth.

In addition, I would like to express my indebtedness to my colleagues and friends, especially Özge Kübra Yılmaz, who has always provided me with the inspiration and support to reach the finish line.

Further thanks extend to my students who have put all their efforts, time, and energy into completing the procedures of my research. Without them, I would not have completed my study.

I would like to thank TÜBİTAK for supporting me throughout my thesis work within the scope of "TÜBİTAK-BİDEB 2210-A Domestic Master Scholarship Program".

Last but not least, I would like to express my special thanks to my husband, Sezgin Ballıdağ, as he was the one who initiated me to start my Master of Arts (MA) and did

not leave me alone in this challenging process. The unconditional support I have received from him gave me strength and courage in difficult times. I would also like to thank my two sons for their understanding when I had to spare more time on my MA than I did on them. I appreciate the maturity they have displayed throughout the process. I would like to send my special thanks to my mother and father with whom I started my life journey and have reached this day together. Without their belief in me, I would not have had the power to pursue my dreams.

Meltem BALLIDAĞ

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	xv
TABLE OF CONTENTS	xvii
LIST OF TABLES	xxi
LIST OF FIGURES	xxii
LIST OF ABBREVIATIONS	xxiii
1. INTRODUCTION	1
1.1. Background of the Study	1
1.2. Statement of the Problem	4
1.3. Aims of the study	7
1.4. Significance of the Study	7
1.5. Research Questions	8
2. RELATED LITERATURE	9
2.1. Theoretical Background	9
2.1.1. Speaking.....	9
2.1.1.1. Behavioral Theory.....	10
2.1.1.2. Sociocultural Theory.....	11
2.1.1.3. Speech Act Theory.....	12
2.1.1.4. Input Hypothesis.....	13
2.1.1.5. Output Hypothesis.....	13
2.1.2. Anxiety.....	14

2.1.2.1. Trait Anxiety	15
2.1.2.2. State Anxiety	16
2.1.2.3. Situation Specific Anxiety	17
2.1.2.4 Facilitating and Debilitating Anxiety	17
2.1.3. Foreign Language Anxiety (FLA).	19
2.1.3.1. Communication Apprehension.....	20
2.1.3.2. Test Anxiety	21
2.1.3.3. Fear of Negative Evaluation.....	22
2.1.4. Foreign Language Speaking Anxiety (FLSA).	23
2.1.5. Artificial Intelligence (AI).	23
2.1.5.1. Activity Theory	25
2.1.5.2. Self-Determination Theory	26
2.1.5.3. The Technology Acceptance Model	27
2.1.6. Chatbots.	28
2.2. Literature Review	29
2.2.1. Research on Speaking Anxiety	29
2.2.2. Research on the Use of Technology on Anxiety in EFL Speaking	35
2.2.3. Research on the Use of AI-based Chatbots on Anxiety in EFL Speaking	38
2.2.4. Conclusion	41
3. METHODOLOGY.....	42
3.1. Research Context.....	42
3.2. Participants	43
3.3. Data Collection Tools	44

3.4. Procedure	45
3.4.1. Pre-test Administration	47
3.4.2. The Treatment Process.....	48
3.4.3. Post-test Administration	49
3.5. Data Analysis	49
4. FINDINGS	52
4.1. Research Question 1: What is the level of speaking anxiety among Turkish EFL learners?	52
4.1.1. Speaking Anxiety Levels of the Control Group	52
4.1.2. Speaking Anxiety Levels of the Experimental Group	52
4.2. Research Question 2: Does the use of traditional speaking tasks affect EFL speaking anxiety?.....	53
4.3. Research Question 3: Does using AI-based speaking tasks via chatbots affect EFL speaking anxiety?	54
4.4. Research Question 4: Is there a difference between the uses of traditional and AI-based speaking tasks via chatbots regarding the level of speaking anxiety.	56
5. CONCLUSIONS and DISCUSSION	60
5.1. Conclusions	60
5.2. Pedagogical Implications	63
5.3. Practical Recommendations	66
5.4. Limitations.....	68
5.5. Recommendations for Further Research	69

REFERENCES.....	71
Appendix A	90
Appendix B	92
Appendix C	93
Appendix D	95
Appendix E	97
Appendix F.....	99
Özgeçmiş.....	101

LIST OF TABLES

Table 1. Reliability Coefficients of Pre and Post-test	50
Table 2. The Mean Scores of Speaking Anxiety Levels in the Control Group.....	52
Table 3. The Mean Scores of Speaking Anxiety Levels in the Experimental Group	53
Table 4. Comparison of Pre- and Post Tests Scores of the Control Group (Wilcoxon Test)	53
Table 5. The Items with a Significant Change in the Mean Scores in the Wilcoxon Test.....	54
Table 6. Comparison of Pre- and Post Tests Scores of the Experimental Group (Wilcoxon Test)	55
Table 7. The Items with a Significant Change in the Mean Scores in the Wilcoxon Test.....	55
Table 8. Pre-test Scores for the Experimental and Control Groups (Mann Whitney U Test)	56
Table 9. Items with a Significant Difference from the Mann Whitney U Test for the Pre-tests of Experimental and Control Groups	57
Table 10. Post-test Scores for the Experimental and Control Groups (Mann Whitney U Test)	58
Table 11. Items with a Significant Difference from the Mann Whitney U Test for the Post-tests of Experimental and Control Groups.....	58

LIST OF FIGURES

Figure 1. Screenshot of Call Annie on website.....	46
Figure 2. The flowchart of the randomized pretest-posttest control and experimental group design	47

LIST OF ABBREVIATIONS

EFL	: English as a Foreign Language
ESL	: English as a Second Language
AI	: Artificial Intelligence
L2	: Second Language
FL	: Foreign Language
FLA	: Foreign Language Anxiety
CA	: Communication Apprehension
FLSA	: Foreign Language Speaking Anxiety
HCI	: Human- Computer Interaction
SDT	: Self- Determination Theory
TAM	: Technology Acceptance Model
PU	: Perceived Usefulness
PEOU	: Perceived Ease of Use
FLCAS	: Foreign Language Classroom Anxiety Scale
ASR	: Automatic Speech Recognition
ILI	: I Love Indonesia
NOVO	: NovoLearning
VR	: Virtual
TOEIC	: Test of English for International Communication
IELTS	: International English Language Testing System
CEFR	: Common European Framework of Reference
SPSS	: Statistical Package for Social Sciences

1. INTRODUCTION

This section aims to present the rationale behind the study, and it consists of the Background of the study, the statement of the problems, the aims and significance of the study, and the research questions. First, the importance of speaking and anxiety, the roles of technological developments, and Artificial Intelligence are introduced. Then, problems in relation to English as a foreign language (EFL) speaking and anxiety are discussed. After the presentation of the aim and significance of the study, the research questions are presented.

1.1. Background of the Study

Speaking skills are regarded as significant in English as a foreign language learning context for three reasons. First, language acquisition happens through interaction with peers, teachers, and other professionals (Çakıroğlu, 2018). Hence, interaction is crucial for the language acquisition process because it gives learners comprehensible input, feedback on their output, and the chance to produce modified output (C.-C. Liu et al., 2022). Second, learners increase their capacity to apply knowledge of the world, which is also referred to as ‘topical knowledge’ by Bachman and Palmer (1996) or ‘world knowledge’ by Chapelle et al. (1997). EFL learners have knowledge of the world within the boundaries of their world, and the ability to speak in a foreign language displays itself in the learner’s capacity to apply that knowledge of the world. Providing that the learner is actively involved in social interactions, his speaking skills develop, and his capacity to implement knowledge of the world is boosted. Finally, speaking skills greatly influence the learner’s total language improvements, and learners perform better in other language skills if their speaking skills are well-developed (Rahimi & Fathi, 2022). To be specific, speaking skills contribute to their

writing skills as oral and written communication principles are the same. Therefore, if a learner knows how to organize, develop, and summarize her ideas in oral communication, she may also achieve the same competency in written communication. However, speaking skills that need to be developed due to the aforementioned reasons may be deeply affected by the anxiety levels of the learners.

As noted above, anxiety is an important factor in the language learning process, especially for speaking skills, and the importance of it in EFL classes can be discussed with reference to some consequences. To start with, learners are not able to process the input when their anxiety levels are high. As suggested by Krashen (1982), learners' affective filters need to be lowered so as to enable input to lead learning. Another problem which results from anxiety manifests itself in what is called communicative apprehension. Speaking anxiety appears in public speaking or group settings, and listening to someone or expressing oneself may manifest themselves as trouble in speaking skills. Anxiety does not only affect learners' speaking ability but also their cognitive process in understanding messages. Therefore, the processing of information and performance would be hampered by anxiety-related cognition because anxious thoughts may inhibit cognitive resources, resulting in a limited capacity to handle common cognitive demands (He, 2018). To illustrate, the speaking task at hand may be competing for attention with these worrisome thoughts, which will drain cognitive resources from the task and make it challenging to concentrate. The overall processing power available for the work may be decreased due to this interference caused by anxiety. Finally, the capacity to shift between various tasks or mental processes during speaking activities can be negatively impacted by anxiety-related cognition. Without the necessary cognitive flexibility, people may become stuck on worrisome ideas, making it difficult to adjust to shifting cognitive demands. Due to the reasons

mentioned above, anxiety is very important to the language acquisition process, especially for speaking abilities. Over the decades, scholars have searched for ways in which educators could lower students' anxiety levels; however, with its groundbreaking entry into our lives, AI might play a pivotal role in language learning and specifically in decreasing FLA.

Thanks to the recent technological advancements in education, AI-based chatbot technology has started to be utilized in language learning environments, which bears various benefits regarding speaking skills and speaking anxiety. Initially, chatbots offer genuine opportunities for language learners to use the target language by having human-like conversations, which staves off the concern of not being able to interact with native speakers. With this opportunity to interact with virtual partners, learners notice the gap between their interlanguage and partners' target structures in social-like activities (Lee, 2019). While trying to involve learners in these activities, chatbots analyze the learners'/users' abilities and appeal to their interests by engaging them in meaningful language tasks, which enables deeper involvement (Bibauw et al., 2019). Second, chatbots also function as an anxiety alleviator in speaking foreign languages. To be more specific, learners may feel more at ease and less anxious while conversing with a machine rather than a human. This opportunity makes students feel less anxious about learning a new language as chatbots are prepared to go over the same subject repeatedly without getting bored or impatient (N.-Y. Kim, 2016). Finally, by decreasing the anxiety levels of learners, chatbots help students raise their self-confidence in language learning, which results in improved foreign language skills (N. Y. Kim et al., 2019). The more self-confidence they gain, the more willing they may become to participate in speaking tasks, and they can display better speaking performances. To sum up, the application of AI and chatbot technology in language

learning settings has begun, and it seems to have several advantages for speaking anxiety and speaking abilities.

In summary, speaking has been regarded as an important skill in the language learning process as learners learn a language by using it to communicate, as Richards and Rodgers (2014, p.105) state. Moreover, they broaden their world vision and improve their overall language skills. On the other hand, anxiety is considered as a key factor in the language learning process as it has an impact on how willing students are to participate in any speaking tasks, which affects both their engagement and learning outcomes. Given the importance of technology integration within the language learning process, AI platforms such as chatbots can play a facilitative and an anxiety alleviator role in an EFL context. For a deeper understanding of its role in this process, it is important to uncover its effects on language learning, especially on speaking anxiety.

1.2.Statement of the Problem

Speaking is regarded as one of the most difficult skills, and the limited speaking practice opportunities inherent in EFL contexts can be the main reason why speaking skills might be challenging for EFL learners (Fryer & Carpenter, 2006). As a result of these scarce speaking opportunities, language learners in EFL contexts face some linguistic, social, and psychological difficulties. For instance, developing linguistic competence can be arduous for EFL learners. They do not have enough opportunities to internalize grammatical rules they learn in the classroom or increase their lexicon as there is no L2 population outside school boundaries. When they lack the necessary vocabulary and correct grammar, learners fail to communicate effectively; hence, they may have difficulty speaking fluently, but fluency is essential in managing meaningful communication (Hinkel, 2006) Another challenge that EFL learners face in EFL

contexts in terms of developing speaking skills is sociolinguistic competence. Knowing what is expected socially and culturally by the target language users is the key to successful communication in the target language. However, because of little exposure to the target language and contact with native speakers, sociolinguistic competence becomes so hard for EFL learners to acquire because of the variance in cultural rules of speaking as well as the social, cultural, and pragmatic elements that inherently exist in that competence (Ya, 2010) For instance, the use of hands, arms, and fingers is prevalent in a society, whereas head-scratching, finger-joints, and hand-clapping have different meanings from one culture to another (Harmer, 1991). Finally, the affective side of the learner is probably one of the most important influences on language learning success or failure” (Oxford, 1990, p.140) As a final point, the need to speak in foreign language classrooms leads to the highest amount of anxiety among students (Young, 1994).

Anxiety in EFL speaking is a significant factor which affects speaking performance, self-confidence, and attitudes towards speaking skills. First, anxious EFL learners become speechless and cannot articulate even a single word, which impedes the initiation of interaction in a speaking task. Not only may he not find the courage to initiate the conversation, but he may also have some difficulties in his response quality in the process. As a result, he may feel apprehensive about appearing awkward or incompetent before others (Teimouri et al., 2019) The learner’s negative perceptions about his speaking abilities can cause a loss of self-confidence, which can also be viewed as another problem related to anxiety. When the learner does not trust himself in speaking the language, he may not be willing to participate in any speaking tasks (McIntyre, 2004). Finally, unfavorable attitudes towards speaking tasks can stem from anxiety, and they can manifest themselves as reticent behaviors. To be clear,

anxious learners may keep quiet and be unwilling to share their ideas resulting in refraining from participation (Kitano, 2001). Even most reticent learners think it is better to remain silent than risk appearing foolish” (Kelly & Keaten, 2000). Being quite aware of their incapability, they seek to avoid interactions and prefer to be passive in speaking tasks as they are afraid of being mocked by their peers. However, speaking skills can only improve with a diligent effort to talk in the target language, and reticent behaviors may only result in poor speaking skills in the long run. To this end, speaking is influenced by anxiety to a great degree, and it may impede the whole process of EFL speaking. Nonetheless, anxiety can be reduced through different means. One way of decreasing learners’ anxiety is the integration of Artificial Intelligence. This can be attained by using AI chatbots which are powerful tools for the facilitation of language with their conversation partner roles (L. K. Fryer et al., 2020). Considering the limited opportunities to practice the target language, they are indeed a valuable resource for EFL students (L., Fryer & Carpenter, 2006). Moreover, talking to a machine rather than a human being while using chatbots can alleviate their anxiety levels, which is a barrier to effective oral communication in L2.

Among other AI platforms, chatbots may serve as a supportive and encouraging environment for speaking as they engage the learners with meaningful language tasks and enable them to have deeper involvement (Bibauw et al., 2019). In other words, the use of chatbots can be effective in terms of EFL speaking. First, chatbots have provided foreign language students with a means for language practice with the purpose of carrying on a conversation with human beings (Haristiani, 2019). By providing individualized experiences, they enable FL users and learners to self-manage their education in accordance with their own schedule, goals, and pace, integrating learning into daily life without time and place constraints (Zhang & Zou,

2020). Second, they can evaluate learners by making data-driven decisions without criticizing them or pressurizing them with high-stakes reports (Bibauw et al., 2019). This may give the learners comfort and ease, and it can also eliminate feelings of apprehension. An active involvement in speaking tasks can enhance their speaking skills and they may become accurate and fluent speakers of the language. As a result, it is likely to affect their overall language proficiency.

1.3. Aims of the study

Considering that speaking has been accepted as one of the challenging and most anxiety-provoking skills in language learning and that anxiety plays a role in creating problems for learners in EFL speaking, chatbots can be utilized to reduce learners' speaking anxiety. Therefore, this study seeks to determine the level of speaking anxiety among preparatory school EFL learners in Türkiye and examine the effects of AI-based speaking tasks via chatbots on their EFL speaking anxiety. In addition, it also aims to compare the effect of traditional speaking tasks and AI-based speaking tasks via chatbots on EFL speaking anxiety.

1.4. Significance of the Study

This study can be viewed as significant for several reasons. First, it highlights the importance of anxiety for EFL speaking skills, given that speaking skills are perceived as a major cause of anxiety among EFL Turkish students (Öztürk & Gurbuz, 2014). Second, it contributes to the related literature by providing information on chatbots. This is important because with the development of Artificial Intelligence Technologies and especially with the rise of conversational chatbot applications that aid face-to-face speaking classes, there has been an increased demand for Artificial Intelligence-based platforms. Considering that artificial intelligence-based chatbots are a brand-new

concept, research on these applications has been relatively limited, and they are among the least studied applications in Türkiye. Third, it contributes to the related literature not only in global but also in national contexts. In the literature, there have been some studies carried out on the use of chatbots related to speaking skills or competence ; (N.-Y. Kim, 2016), grammar skills (N. Kim, 2019), motivation (Jeon, 2021), fear of speaking English (M.-H. Hsu et al., 2021), anxiety (Han, 2020) (El Shazly, 2021), stress (Meng & Dai, 2021), and communication skills (H.-S. Kim et al., 2021) While most of the studies have been conducted in foreign contexts, very scarce research has been undertaken to examine the impact of chatbots on speaking anxiety in a Turkish context. In one of these limited research studies, Çakmak (2022) sheds light on the effect of newly emerged chatbot applications on speaking anxiety, yet there is a lack of exploring the issue in a broader sense. Therefore, this study aims to contribute to the related literature by investigating the impact of chatbots on EFL speaking anxiety among undergraduate EFL learners at a state university in Türkiye.

1.5. Research Questions

Concerning the problems related to EFL speaking anxiety and the issues such as limited information and studies on chatbots, as mentioned above, there is a need to investigate whether chatbots have an impact on EFL learners' speaking anxiety. Thus, this study aims to answer the following research questions:

1. What is the level of speaking anxiety among Turkish EFL learners?
2. Does the use of traditional speaking tasks affect EFL speaking anxiety?
3. Does using AI-based speaking tasks via chatbots affect EFL speaking anxiety?
4. Is there a difference between the uses of traditional and AI-based speaking tasks via chatbots regarding the level of speaking anxiety?

2. RELATED LITERATURE

This section consists of two parts. The first part thoroughly explains the theoretical framework of the study, including speaking, anxiety, and AI-based chatbots in language learning. The second part presents the related literature on speaking anxiety, the use of Artificial Intelligence, and the use of chatbots in EFL speaking and speaking anxiety.

2.1.Theoretical Background

This subsection introduces a comprehensive theoretical framework of the study. First, speaking as an important skill in learning a language is defined, and the role of EFL speaking among other language skills is presented. Then, some theories and hypotheses related to speaking skills are introduced. Next, anxiety, types of anxiety, and speaking anxiety are described in detail. After that, AI-based chatbots and their role in speaking skills are defined. Finally, the theoretical background for the use of AI-based chatbots in language learning is explained.

2.1.1. *Speaking*

Speaking is a vital component of the social interactions that occur regularly (Güzel & Aydin, 2014) and many definitions exist. To begin with, speaking is “the process of building and sharing meaning through the use of verbal and non-verbal symbols in various contexts(Channey, 1998). In this sense, non-lexical elements such as eye contact, a mimic, or a gesture are as significant as lexical ones since successful communication can only be maintained when both are on the stage. Channey (1998) defines speaking as a multilayered process of a structured meaning consisting of receiving the message and constructing and sharing the message with others. It involves a cognitive process of the message received by the listener, and then through

communication, learners can integrate separate structures into a creative system for expressing meaning (Littlewood, 1984). In addition, speaking is also described as a social and situation-based activity and as an interaction (Thornbury, 2005). Speaking is also viewed as a part of daily life in which people interact with each other, and the situations in speaking contexts determine the nature of oral communication. On the other hand, speaking is also defined as a skill which is an important factor in the shaping of the learner's developing language (Gass & Varonis, 1994). For instance, it was proved that speaking can help the development of reading competence (Hilferty, 2000), the development of writing (as cited in Farabi et al., 2017) as well as the development of listening skills (Regina, 1997). It can be also pointed out that gaining grammatical and structural competence can be achieved by mastering the speaking skill (Ellis, 2012). Likewise, Ur (1996) states that speaking included all other skills of knowing that language. Finally, according to Brown and Yule (as cited in Liao, 2009), speaking is the skill that students will be judged upon most in real-life situations. In a way, speaking clearly and concisely is a vital component of daily communication, and most of the time, it forms the basis of one's initial assessment of another. In the literature, there are several theories that are related to speaking skills, and three main theories are known as behavioral, sociocultural, and speech act theories. In addition to these theories, some hypotheses shed light on the place of speaking in learning a language. These hypotheses can be listed as Input Hypothesis and Output Hypothesis.

2.1.1.1. Behavioral Theory. Behavioral Theory draws a close link between stimuli and response, and environmental factors play a crucial role in the emergence of behavior. The view of behavioral Theory in foreign language learning suggests that a person should be provided with opportunities to practice the language in their

environment. According to Skinner's Behavioral Theory (as cited in Musthofa & Rosyadi, 2020), language is mostly learned by giving much more importance to listening and speaking skills than other skills, providing opportunities to use the language, and creating a language environment where students can listen and interact with native speakers. In a way, more stimulus from the outside may foster students' response behaviors which will manifest itself in speech. The last thing mentioned by behavioral Theory is that students learn the language better if the motivation to speak a foreign language is normalized and supportive environments are created. This Theory highlights that when individuals feel motivated and are consistently supported in practicing and using the language, their learning outcomes tend to be more successful. Through reinforcement and positive experiences in such an environment, individuals are likely to feel more confident and engaged, leading to improved language learning outcomes.

2.1.1.2. Sociocultural Theory. In the Sociocultural Theory of Vygotsky, knowledge of language is not accumulated individually but is developed by using the language in social contexts. Language knowledge is considered a socially constructed concept; in the absence of a social environment, the learner cannot use the language at all. Should the language not be used actively, progress in language can be hindered, so language learners should seize every chance to be involved in social environments. They build and reconstruct the map of the language in their mind each time they communicate with someone in the target language. In a way, social and cultural contacts and influences start the process of growth, leading to more profound and higher levels of brain processes (Vygotsky, 1978). Sociocultural Theory also posits that immersion in genuine communicative contexts, where learners can participate in conversations, debates, and activities that mirror language use in everyday life, is

beneficial for language learners acquiring a second language. Speaking abilities can be considerably improved by having the chance to engage in role-playing, group discussions, interactions with native speakers, and activities that simulate real-world communication situations. Furthermore, sociocultural theory emphasizes the value of scaffolding, which is the process by which learners receive support and direction from more experienced people (teachers, mentors, or peers) as they advance in speaking. In addition to learning language through this interaction and teamwork, students also learn about cultural norms, expressions, and social cues—all of which are crucial for successful speaking skills.

2.1.1.3. Speech Act Theory. The Speech Act theory introduced by Austin (1989, p.8) also stresses the value of speaking in terms of using the language meaningfully and appropriately. To achieve that level of using the language, EFL learners need social interactions in the target language to gain insight into the word choices in specific contexts. Pragmatics defines the goal of learning a language as constructing meaningful and structural sentences. This can only be possible by creating such social environments so that the learner will know how to respond to a sample situation by focusing on the words coming out of the speaker. In this sense, students must be exposed to authentic contexts where language is naturally utilized. Through real-world interactions, students understand what is spoken out loud and the intents, suggested meanings, and proper reactions in various contexts. Through subtleties like tone, gestures, context, and cultural norms, language functions beyond sentence form, and this exposure helps learners understand this. As a result, speaking the target language is a necessity to reach pragmatics objectives, and without pragmatics elements, one cannot attain full development in language and speaking skills.

2.1.1.4. Input Hypothesis. The Input Hypothesis coined by Krashen (as cited in Er, 2001) suggests that listening and reading proceed with speaking, and any comprehensible input provided to the learner may foster the emergence of speaking in this process. Comprehensible input refers to utterances that the learner can comprehend, and the speaker uses the language so that the learner gets the message. According to the Input Hypothesis, only after the learner reaches some level of competence improved by listening and understanding speaking emerges. In the EFL context, the main input that the learner receives is teacher talk and course materials during the class session, and he has scarce input out of the classroom as he lives in a country where the target language is not spoken. Considering the amount of input they receive, EFL learners may take longer to become competent in speaking. And for the sake of comprehensible input, EFL instructors may prefer finely-tuned or roughly-tuned input in the classroom. Krashen and Terrell(1983) distinguish the difference between them by stating that the first one refers to the input targeting one structure at a time and a key component of language learning is the ability of learners to comprehend most linguistic input. The latter suggests an overall language modification so that the learner understands what is said. It exposes students to language that may be a little bit harder or unfamiliar than they are accustomed to. This method pushes students to extend their language skills and encourages active engagement with the language.

2.1.1.5. Output Hypothesis. The Output Hypothesis Swain (1985) developed also has a crucial place in language learning. According to this hypothesis, output embodies speaking and writing. It has three main ideas, yet one of them has a closer relationship with speaking. To explain, when a gap in students' linguistic knowledge occurs, and they cannot say exactly what they need to convey the meaning, they try to

complete the newly discovered gap by looking for that knowledge. They realize that conveying meaning is the essence of communication; if they cannot bridge this gap, they may experience some breakdowns in communication. Actually, this clearly shows the significance of speaking in learning a language. According to the Output Hypothesis, speaking exercises give students the chance to enhance their language skills. People experiment with new vocabulary, sentence structures, and grammatical patterns through speech. Through active participation in speaking exercises, students can consolidate their knowledge, pinpoint areas for growth, and improve their ability to communicate in the target language. When we consider the development of speaking in EFL contexts, practice that may foster communication skills is restricted to the classroom. Hence, this hypothesis suggests that promoting opportunities for output (speaking) in the classroom can trigger the development of speaking skills. As students speak more, they can feel more at ease expressing themselves, which may enhance their pronunciation, intonation, and general communication abilities.

2.1.2. Anxiety

Scovel (1978, p.134) expresses that “anxiety is associated with feelings of uneasiness, frustration, self-doubt, apprehension or worry”. In a similar vein, MacIntyre and Gardner (1994) define anxiety as “the feeling of uneasiness, worry, nervousness and apprehension”. Lewis and Carpendale (2004, p.377) describe it in a more detailed way as “an unpleasant emotion experienced as dread, scare, alarm, fright, trepidation, horror or panic”. On the other hand, Spielberger (1996) links anxiety to the nervous system and states that it is “subjective, consciously perceived feelings of apprehension and tension accompanied by and associated with activation or arousal of the autonomic nervous system.” In a way, it refers to the individual experience of feeling worried or tense, often accompanied by physical arousal like

sweating, palpitation, perspiring, and dryness of the mouth linked to the activation of the body's autonomic nervous system. On the other hand, Powell and Enright (2015, p.23) think that anxiety is a “series of physical, cognitive, and behavioral responses to stress”. Many complex cognitive processes such as attention, shifting from one task to another, and instant detection of errors and their corrections can be inhibited by anxiety. A person suffering from anxiety may have restlessness, avoid threat situations, and pursue safety. He can even freeze and stay motionless; therefore, he may also have difficulty in speaking. Gaudry and Spielberger (1971, p.77) state that the overwhelming weight of the evidence consistently points to the relationship between anxiety and various measures of learning and academic achievement. They may even develop a failure complex, experience inhibition, and shy away from doing things like finishing their homework, taking exams, or even speaking in front of the class for any reason. There are instances where people experience anxiety under certain circumstances or during the entire learning process, and there are several types of anxiety within the specific context of EFL learning.

2.1.2.1. Trait Anxiety. Trait anxiety is one sort of anxiety that is specifically mentioned in the literature and is derived from personality traits. Some people have a persistent and stable tendency to feel worried in any setting; that is to say, it is a personality trait (Brown, 1994). Phillips (1992) also states that some people react anxiously to almost every situation. MacIntyre and Gardner (1991) assert that there are detrimental effects of trait anxiety on people's memory and other cognitive abilities. To put it more clearly, anxious people use cognitive resources since they allocate mental energy to coping with anxiety symptoms. Besides, high anxiety levels can reduce cognitive flexibility, which may hinder effective encoding and retrieval processes necessary for good memory. According to Goldberg (1993), people with

high levels of trait anxiety also lack emotional stability. These people may have trouble controlling their emotions, which can cause them to react to circumstances unpredictably or exaggeratedly. Finally, Spielberger et al. (1983) state that people with high-trait anxiety regard conditions as more threatening than they really are. As a result of heightened vigilance, there occurs an increased focus on threatening cues while disregarding positive information.

2.1.2.2. State Anxiety. Another type of anxiety is state anxiety, which refers to anxiety experienced by a person at a certain time in response to a specific circumstance. This anxiety “varies in intensity and duration and fluctuates over time as a function of the amount of stress that impinges upon an individual and that individual’s interpretation of the stressful situation as personally dangerous or threatening” (Spielberger, 1976, p.5). Spielberg’s concept underscores the idea that state anxiety is dynamic and can fluctuate based on changes in stress levels, coping mechanisms, or personal factors. For instance, an individual may go through phases of increased anxiety during extremely stressful times and decreased anxiety during times that are more bearable. On the other hand, Brown (1994) establishes a link between the state anxiety and stimulus. He explains that this kind of anxiousness gets triggered temporarily by a stimulus. According to Aydın (2001), there is a significant relationship between trait and state anxiety, and those who have trait anxiety are more likely to also have state anxiety. People who have high trait anxiety may see daily stressors as more dangerous, which might set them off in a state of worry. State anxiety is a result of the interplay between their innate trait anxiety and external circumstances. Aydın's observation most likely indicates that because of their innate propensity for anxiety, those with high trait anxiety typically feel state anxiety more frequently or strongly.

2.1.2.3. Situation Specific Anxiety. In the literature, another type of anxiety is situation-specific anxiety, which is stemmed from the conditions of a specific situation (Wang, 1998). Situation-specific anxiety in the context of language acquisition is fear resulting from learners' inadequate language proficiency (MacIntyre & Gardner, 1991). Language learners may experience anxiety when they feel their language skills are inadequate to meet the demands of a given situation, such as a conversation, a presentation, or an assessment. Situation-specific anxiety is crucial in language education as it can impede learners' willingness to engage in language activities, hindering effective language acquisition and proficiency development. Situation-specific anxiety can be seen in a variety of situations, including public speaking, and class participation (Zhanibek, 2001). Speaking in front of others can cause anxiety in some people because they worry about being judged, making mistakes, or not being able to express themselves clearly. The pressure of being the center of attention and the expectation to perform well contribute to this specific anxiety.

2.1.2.4. Facilitating and Debilitating Anxiety. In addition to the trait, state, and situation-specific anxiety, the literature has also made a distinction between facilitating and debilitating anxiety. According to Brown (1994), a learner's ability to complete a task is enhanced by facilitator anxiety. Moreover, he mentions that having a slight anxiety spurs one to carry out the task. In this sense, Scovel (1991) asserts that anxiety that serves as a motivator is considered to be a form of facilitative anxiety. Moderate anxiety can sometimes encourage people to concentrate their energy and attention, which raises their level of arousal and makes them more willing to take on new challenges. People who are in this higher state of arousal may find it easier to focus, be more aware, and be motivated to do well in a task or circumstance. It can even push individuals to reach their peak performance without overwhelming them. In a study by

Liu and Jackson (M. Liu & Jackson, 2008), they found that moderate levels of anxiety among Chinese EFL learners positively correlated with increased attention during speaking tasks. The heightened arousal due to anxiety motivated students to concentrate more on their language production, leading to more accurate and fluent speech. Likewise, a study by MacIntyre and Charos (1996) observed that a moderate level of anxiety was associated with improved performance among EFL learners during speaking assessments. The anxiety acted as a motivator, prompting students to put in extra effort and perform better when speaking in English. Moderate anxiety levels seemed to encourage learners to speak more spontaneously and fluidly, contributing to better overall speaking performance. While facilitator anxiety may help students stay focused and composed, debilitating anxiety is harmful to students' learning and impedes the process of successful language acquisition. Debilitating anxiety is defined as having some negative feelings that prevent a learner from performing a task (Wilson, 2006). It involves strong negative emotions that impede the learner's capacity to perform at their best, such as excessive worry, dread, self-doubt, or thoughts of inadequacy. This fear turns into a major barrier that impairs rather than enhances their language ability. Indeed, this frustration results in failure (Zhanibek, 2001). According to research by Horwitz et al. (1986), language learners experiencing severe anxiety tend to avoid speaking situations. Their severe nervousness prevented them from taking part in class discussions, oral assignments, or presentations, which hindered their practice and opportunities to improve their skills. In a similar vein, learners with high levels of debilitating anxiety in EFL environments were shown to engage in speaking activities less actively in a study by Gregersen (2003). They were less engaged in speaking activities and interactions as a result of their anxiety about making mistakes or receiving a poor evaluation. High levels of

debilitating anxiety might undermine learners' self-efficacy attitudes towards their language ability during speaking assignments. Research such as Cheng's (2004) has shown that extremely anxious students may question their ability to communicate successfully in the language they are learning, which can have a detrimental effect on their self-esteem and confidence.

2.1.3. Foreign Language Anxiety (FLA).

Horwitz et al. (1986) define FLA as a "separate complicated phenomenon of self-perception, beliefs, feelings, and behavior related to classroom language learning arising from the uniqueness of language learning process". According to the definition, it includes their opinions about their capacity to learn languages, their level of confidence, and their general self-evaluation of their language proficiency. Young (1992), describes it as a complex psychological process exclusive to language acquisition. Particularly, FLA is defined by MacIntyre and Gardner (1994) as the anxiety and negative emotional reaction arousal when learning or using a second or foreign language, or the feeling of tension and apprehension specifically associated with second or foreign language contexts, including speaking, listening, and learning (MacIntyre, 1999). Horwitz and Cope (1986) view FLA as a context-specific anxiety triggered by a certain kind of situation or event (MacIntyre & Gardner, 1991). Horwitz & Young (1991) introduce two approaches for foreign language anxiety. One of them is a unique approach, in which proficiency in a foreign language is connected with FLA but not with other forms of anxiety. The other one is the transfer approach, in which FLA is seen as a symptom of other forms of anxiety. Besides these approaches to identify FLA, Tobias (1986) introduced two models of FLA. While the interference retrieval model links anxiety to preventing the recall of previously learned content at the output stage, the interference model refers to the deficiency of the skills. It is related

to poor study habits or ignorance that arise throughout the intake and processing phases of learning. Finally, Horwitz et al. (1986) establish three different components of FLA: communication apprehension, test anxiety, and fear of negative evaluation.

2.1.3.1. Communication Apprehension (CA). According to McCrosky et al. (1987), communication apprehension is a kind of anxiety that occurs in situations involving interpersonal communication in which students have little control over the conversation. According to Daly (1991), it is known as "situational apprehension", and it is brought on by "many aspects of anxiety-provoking situations", including evaluation, novelty, ambiguity, conspicuousness, and prior history" (p. 10). According to Daly (1991), this emotion causes some people to have a "tendency to avoid and fear when it comes to communicating verbally." Horwitz et al. (1986, p. 127) describe communication apprehension as a general tendency to feel uneasy or afraid when interacting with people. The specific manifestation of this timidity during conversation is called communication apprehension and shyness as a personality trait can be considered as one of the basic causes of communication apprehension. In terms of foreign language learning contexts, learners' communication apprehension is elevated by their peers and teachers' control of their work (Horwitz & Young, 1991). This can happen when students feel that their peers are evaluating them based only on their language proficiency. When teachers correct errors or evaluate students' language skills in an excessively harsh or critical manner, students may become more nervous. Anxiety over speaking in a foreign language might rise in a stressful learning environment that is brought on by unforgiving grading, unsupportive feedback, or constant observation. To sum up, communication anxiety is a crucial part of learning a language. A learner may experience severe oral communication difficulties if they

would rather remain silent. During class, students must speak in the target foreign language; or else, communication anxiety could arise (Cicek, 2014).

2.1.3.2. Test Anxiety. The second component of foreign language anxiety is test anxiety, which is described as a type of anxiety-inducing disruption during assessment in an academic environment by Horwitz and Young (1991). MacIntyre and Gardner (1989) also define test anxiety as an anxiety related to academic evaluation. In a broader sense, Zeidner (Zeidner, 2007, p. 166), test anxiety is defined as the combination of mental, emotional, and behavioral reactions that follow concern about potential adverse effects or poor performance on exams or similar evaluative situations. The interference hypothesis suggests that test anxiety hinders effective task processing and information recall during an exam (Eysenck et al., 2007). Students who are test-anxious worry about their knowledge gaps or the possible negative effects of failing throughout the exam (Zeidner, 2007). Working memory abilities that would otherwise be accessible for carrying out the task (Ng & Lee, 2015) or the retrieval of information from long-term memory (Unsworth et al., 2013) are occupied by these task-irrelevant thoughts, which also cause concentration disturbances. As a result, academic achievement may be harmed by test-anxious students' task-irrelevant thinking, which can impede effective task processing and information retrieval during an exam. Finally, a test anxiety model with three components is introduced by Wren and Benson (2004). They are identified as thoughts, off-task behaviors, autonomic reactions, and. Worrying and irrelevant thoughts are closely related to the cognitive aspect of test anxiety. These thoughts frequently center on performance anxiety, fear of failing, oversimplifying possible outcomes, or having intrusive ideas that make it difficult to focus. The second one is related to the behavioral dimension of test anxiety, and off-task behaviors could include (a) manipulating oneself by swinging or fiddling

with clothing or hair; (b) manipulating objects by chewing or playing with pencils; and (c) engaging in inattentive or distracted conduct (glancing around the room, not paying attention to the test) (Fleege et al., 1992). The last component which is autonomic reactions refers to the physical manifestations of test anxiety, including elevated heart rate, perspiration, tense muscles, and other autonomic nervous system reactions brought on by the psychological anguish connected to testing environments.

2.1.3.3. Fear of Negative Evaluation. Fear of negative evaluation is the anticipation that one will always receive a negative evaluation from others (Wörde, 2003). According to Watson and Friend (1969), fear of negative evaluation is characterized by anxiety about other people's opinions of oneself, anguish over their unfavorable opinions of oneself, avoidance of circumstances that need evaluation, and the expectation that other people will feel adversely about themselves. The Cognitive Theory suggests that fear of negative evaluation is the process of information in a biased way, especially when something frightening is about to happen (Clark & McManus, 2002). Learners who have a fear of negative evaluation may perceive events as more serious or scary than they are because they are more sensitive to possible threats or unfavorable comments. On the other hand, Rapee and Spence (2004) link social anxiety and fear of negative evaluation in their influential model. They suggest that social anxiety can be conceptualized as existing on a continuum, with the highest end representing extreme fear and avoidance of social situations and interactions, the middle end reflecting an intense desire to be constructively evaluated, and the lower end reflecting a complete lack of social anxiety. This suggests that learners with low social anxiety do not suffer from being negatively evaluated as they are generally at ease in social situations.

2.1.4. Foreign Language Speaking Anxiety (FLSA).

In the current literature, several definitions of foreign language speaking anxiety can be found. To start with, Wilson (2006) defines speaking anxiety as the biggest anxiety for many language learners in EFL contexts. Horwitz et al. (1986) also describe it as the top anxiety-provoking skill among other skills. Finally, Dörnyei and Csizer (1998) view speaking anxiety as one of the components of language anxiety which depicts the tense and uneasy sensations that are particularly connected to situations involving second languages. Several theories and hypotheses have been developed to explain the construct of FLSA. One of them is the affective filter hypothesis proposed by Stephen Krashen (1985). This hypothesis states that worry, including anxiety related to speaking a foreign language, can function as a "filter" to keep language input from getting to the area of the brain responsible for language acquisition. It underlines the fact that the more anxious the learner is when speaking a foreign language, the more difficult it may become for him to process the input. The other one is the Self-Efficacy Theory introduced by Albert Bandura (Bandura, 1977). This theory states that while people with lower self-efficacy views may feel more anxious, people with higher self-efficacy beliefs are more inclined to undertake language learning assignments with confidence. When it comes to a speaking task that requires the learners to use the language as a medium to fulfill the task, the ones with low self-esteem may feel a kind of apprehension and may not have the willingness to communicate in the target language.

2.1.5. Artificial Intelligence (AI).

Several definitions for Artificial Intelligence have been made by scholars so far, and the definitions mainly refer to human-like machines performing tasks to achieve goals. To start with, AI refers to the branch of computer science study that tries to

integrate human intelligence into computer systems, allowing computers to think like humans, perform human tasks, and form opinions by creating computer programs that behave like humans (Kok et al., 2009). In a similar vein, Duan et al. (2019) define AI as a computer's capacity to carry out tasks by mimicking intelligent human behavior. In a way, Artificial Intelligence is the study of creating or developing machines to perform tasks that human minds can do (Broadbent, 1993). Whitby (2009) also considers AI as the investigation of “intelligent behavior”, and the search for methods to manufacture similar behavior into any kind of artifact. Besides, Mehrotra (2019) defines Artificial Intelligence (AI) as a computer science technique that investigates the development and investigation of intelligent devices and applications and he also labels AI a “Machine Intelligence”. According to Kaur and Gill (2019), AI is described as a digital endeavor to attain human-level intellect through the utilization of various machine calculations. On the other hand, the term artificial intelligence refers to a system's capacity to accurately understand outside input, learn from it, and use what it has learned to accomplish particular tasks and goals through adaptable change (Haenlein et al., 2019,p.17). To explain, AI systems are made to process data, pictures, and text from the outside environment, and have the ability to interpret and evaluate input. This entails identifying trends, deriving significant conclusions, and learning from the data. An AI system can use the knowledge it has gained from the input to carry out particular activities or accomplish objectives. The phrase "adaptable change" in the definition refers to the ability of AI systems to modify and enhance their operation in response to fresh data or evolving conditions. Finally, these basic ideas and frameworks that guide the creation and comprehension of intelligent systems are examined in the theoretical foundations for artificial intelligence. Some theories and

models which are relevant to AI are within the scope of this study. They are namely Activity Theory, Self-Determination Theory, and the Technology Acceptance Model.

2.1.5.1. Activity Theory. Activity theory is a theory based on Vygotsky's (1978) idea that mental processes that evolve as a result of actions are carried out outside the mind. This theory holds the view that people act to accomplish a purpose. From this perspective, an activity is a collection of coordinated acts aimed at fulfilling a need. Every action has meaning since it is carried out for a purpose or motivation. Early in the 1990s, the HCI (Human-Computer Interaction) community was introduced to the framework of activity theory, which was created by psychologists Vygotsky and Leont'ev to study how people interact with surroundings and artifacts. Activity Theory is considered a post cognitivist theory in HCI, similar to cognitive distribution and actor-network theory. It highlights the cultural-historical context of human action in addition to the social aspects of human activity. The focus of an Activity Theory analysis is on the fundamental function that activity plays in mediating relationships between people and their environments and in the mental development of individuals. Three layers make up an activity (Cumin, 2018); an activity with the object as its drive; an activity with actions directly aimed at goals; and each action to be achieved under some conditions. Certain activities can develop into operations when the subject learns and does them repeatedly. This process is called automatization. All three levels of human activity can be traced in AI. First, people engage in technology (Kaptelinin, 1996) and technology stands as a mediator in human activities on these platforms (Waycott et al., 2014). In this sense, technology is framed in the context of society and culture through deliberate actions (Kaptelinin & Nardi, 2018). Within the domains of human-computer interaction, According to Wertsch (1998), tools, which are another significant element of Activity Theory, are the cornerstone of socially organized labor

activity and new digital tools have the power to change, amplify, and reshape both labor and human behavior. AI technology can serve as a tool for the users to conduct the activity to reach their goals. Besides, the activities fulfilled by AI technology can develop into an operation which may provoke the process of automatization for the users. In the context of explaining AI, AI is ingrained in people's exterior environments, and humans need explanations to make sense of this complicated outside world. In this sense, the process of explanation in the Activity Theory can be linked to Artificial Intelligence.

2.1.5.2. Self-Determination Theory. Self-determination theory (Deci & Ryan, 1985) examines the causes and effects of relatively autonomous and regulated motivations for engagement, focusing on the "reason" of conduct. What is fundamental in Self-Determination Theory is "basic psychological needs" (Deci & Ryan, 2000). Autonomy, competence, and relatedness are essential psychological necessities. According to SDT, higher levels of need fulfillment will lead to more autonomous effort and optimum performance (i.e., engaging in activity since one enjoys it for its reason and/or individually appreciates the advantages of the activity). Reduced or deliberately suppressed fundamental needs are associated with more constrained motivations for participation (such as doing the activity for external incentives or under pressure from guilt feelings) and the participants' impaired welfare (Deci & Ryan, 2000). At this point, social factors related to the contexts have a close link with these outcomes and the social structure that the person is involved in can either be autonomy-supportive or controlling. In this sense, AI can provide people with autonomy-supportive environments. AI systems that prioritize autonomy support take into account the needs, preferences, and decision-making processes of the user. With the help of the design, users should be able to make wise decisions and engage with AI

systems in a way that advances their objectives. Moreover, users can receive personalized recommendations, services, or material that corresponds to their particular interests in AI, which may create autonomous environments.

2.1.5.3. The Technology Acceptance Model. A popular theoretical paradigm for explaining how people come to embrace and use technology is called the Technology Acceptance Model (TAM). The two key components of TAM are “perceived usefulness and perceived ease of use.” (Davis, 1989). To comprehend and forecast user acceptance and uptake of artificial intelligence (AI) technologies, the Technology Acceptance Model (TAM) can be used in the field of AI. The above-mentioned two components - “perceived usefulness (PU), and perceived ease of use (PEOU)” - are particularly relatable to AI. First, Davis (Davis, 1989) describes PU as a person's degree of belief that using a specific system would improve their performance at work. In his further studies, Davis (Davis, 1993) describes PU also as a person's belief that using new technologies will enhance their performance. Similarly, Mathwich et. al. (2001) define PU as the extent to which an individual is expected to improve job performance through the usage of a certain technology. Each of these concepts aligns with the definition of "useful," which is the capacity to be applied to one's advantage. In the context of AI, people using AI technology have the expectation of boosting their performance and receiving benefits from the system. Second, according to Rogers (1962), the word PEOU denotes the degree to which a person finds an innovation simple to comprehend, pick up, and apply. PEOU is the degree to which a user believes that using a particular system is simple (Davis, 1989). The second TAM factor, or PEOU, states that a user is more likely to adopt a technical application if he believes it can be used easily or with little effort. Should the user feel at ease with the connection to the AI applications, he will accept the technology and be prone to use it.

Perceived ease of use for AI applications can be greatly influenced by the intricacy of algorithms and the user's comprehension and interaction with AI-driven interfaces.

2.1.6. Chatbots.

As we explore the field of artificial intelligence theories and models, it's important to shift our attention to real-world applications of these theories. This is especially true in the intriguing area of AI-based chatbots, where theoretical concepts are brought to life in the engaging interactions between users and machines. According to Bibauw et al. (2019) and Luckin and Holmes (2016), chatbots that use artificial intelligence are a particular type of computer-assisted language learning system. Smutny and Schreiberova (2020) define chatbots as software tools that use speech and text to engage users in realistic, conversational conversations. According to Bansal and Khan (2018), these chatbots are basically both artificial intelligence algorithms and Human-Computer Interaction (HCI) models, and they are a crucial part of current technology. Known as "chatbots", these computer programs are created for conversational services (Brennan, 2006). Furthermore, conversational agents—also called conversational AI—are intelligent software applications that change as a result of user interactions. Conversational agents, sometimes known as conversational AI, are intelligent software applications that grow through user dialogue. Chatbots are also labeled as virtual assistants, and they are simple artificial intelligence (AI) systems that simulate human speech and provide consumers with additional instantaneous interaction choices (Dahiya, 2017). Building on this, Brennan(2006) further defines chatbots as "mechanical structures created to communicate with humans using natural speech as input and output". It becomes clear that chatbots are a type of technological structures which use an advanced dialogue mechanism. According to Belda-Medina and Calvo-Ferrer (2022), this structure combines words, images, virtual motions, and physically

assisted gestures to reply to tasks or texts efficiently. This development from Brennan's (2006) original definition highlights how complex chatbot communication is, using a variety of modalities to improve the interaction's richness. Through interactive methods and user-friendly interfaces, AI-based chatbots are a type of technology application that offer a variety of knowledge and information, and they can also be defined as tools for personal consultation, which means that users can ask questions and receive information that is specifically customized for their needs (Yamada et al., 2016).

2.2. Literature Review

First, this part investigates the related literature on speaking anxiety in the EFL context. Then, research on the use of technology on speaking anxiety is scrutinized. Finally, studies on the use of AI-based chatbots on EFL speaking anxiety are presented.

2.2.1. Research on Speaking Anxiety

Speaking anxiety plays a significant role in EFL speaking, and the related literature indicates that speaking anxiety is substantially affected by different factors such as language proficiency, preparedness, fear of mistakes and evaluation, peer pressure and peer comparison, performance pressure, and psychological concerns. For instance, Ay (2010) aimed to investigate the foreign language anxiety of 160 Turkish EFL young adolescent students at Ankara University Development Foundation Primary School. The research also uncovered the possible causes of speaking anxiety from students' perspectives. Quantitative method was used and the data was obtained through Horwitz's Foreign Language Classroom Anxiety Scale. It was found that students' anxiety emerged most when they were "forced to speak without having had time to

prepare". From this respect, lack of preparation in advance caused students to feel anxious in speaking skills. The findings of this study seem to be confirmed by the results of some research. For example, Tuan and Mai (2015) examined the speaking problems of 203 students in the third grade at Le Thanh Hien High School and looked into the factors related to their speaking performance. They concluded that students who lacked current knowledge about the material were unable to deliver speaking satisfactory performances. In a similar vein, Hidayati et al. 's (2023) study revealed that being less prepared in material or English led students to feel anxious since they feared that the teacher would ask them about the material. Intending to determine the possible causes of foreign language speaking anxiety from students' perspectives, the researcher conducted the research among 34 students in the first grade of SMK AL-Huda Jati Agung in Indonesia. He used a descriptive qualitative method and the data was obtained by questionnaires and interviews. Three factors affecting FLSA were determined as a result of this research. The first one was related to preparedness. The second finding was linked to the anxiety occurring when the students felt they fell behind the class. The last thing concluded from the research was learners' lack of language proficiency as students mentioned difficulties they had in spelling, pronunciation, and vocabulary. Expanding on the findings of language learners' deficiency in language skills, it is imperative to investigate related research that sheds more light on the different aspects and causative elements of spelling, pronunciation, grammar, and vocabulary problems that students face. Liu (2016) analyzed the anxiety levels of Chinese undergraduate non-English major students from 3 different levels and she also tackled the reasons lying behind speaking apprehension. By conducting a survey, observations, reflective journals, and interviews, Liu concluded that students with higher language proficiency levels had lower levels of anxiety. This finding

suggests that there is a positive correlation between language competency and emotional well-being. A year later, a study from Türkiye confirmed this hypothesis as the research by Batumlu and Erden (2007) revealed that more accomplished students displayed less anxiety. 150 students from A, B, and C levels who were enrolled in the Basic English Department Prep Classes at Yıldız Technical University's School of Foreign Languages made up the study's sample. A survey was applied to measure students' anxiety levels and the average of the students' first and second midterm grades was used to calculate their accomplishment level. The most unsuccessful students turned out to be the students experiencing the most speaking anxiety. Another study from Türkiye which was carried out by Kayaoğlu and Sağlamel (2013) made it obvious that one of the biggest factors for students' speaking anxiety was the linguistic difficulties that they were experiencing. The purpose of this study was to investigate how students at a state institution in northeastern Türkiye perceived their level of language anxiety during speaking lessons. Thirty students with varying skill levels were interviewed using a purposive sample technique. The results of the semi-structured interviews were examined in relation to how students consider learning English. Grammar, vocabulary, and pronunciation issues were among the most often provided answers when it came to linguistic difficulties. Students remarked how difficult it was for them to speak with proper grammar patterns. Outstanding vocabulary knowledge and the ability to recall it when necessary were two different factors contributing to students' anxiety. Another difficulty they faced was appropriately pronouncing words, even when they were using proper grammatical structures and lexis. Tien's (2018) research outcomes also revealed that students were quite worried about their usage of grammar, their vocabulary, their pronunciation, and other aspects of their learning. With the purpose of understanding the relationship

between variables and anxiety related to speaking English, 658 voluntary student participants at Taiwanese universities, specifically for English and non-English majors were gathered from eight different southern Taiwanese institutions. The methodology employed for data gathering was mixed-method and the data indicated that having adequate language proficiency to speak English made students feel more comfortable and confident. On the other hand, Rajitha and Alamelu (2020) brought a broader perspective to the factors leading to speaking anxiety in that they also pointed out factors like stage fear, lack of confidence, shyness, and peer factor as well as language competency. The research examined many causes of speaking anxiety among college students majoring in arts and sciences and coming from diverse backgrounds. To determine the primary elements of speaking anxiety as well as the variables generating speaking anxiety during the English-speaking class, the data was analyzed and described using the qualitative technique. An open-ended questionnaire was used to gather data for this study from 50 final-year undergraduate, graduate, and science students across a range of academic programs. A questionnaire and one-on-one conversations with the students were used to collect the data. As for peer factor, the students reported their apprehension over the possibility of their friends' reactions towards their inappropriate use of English. Stage fear was associated with performance anxiety which arises in the case of performance made in front of the whole class and some students even stated that they forgot what to say on stage. Lack of confidence was another crucial factor for speaking anxiety in the study. Students openly stated that they did not have enough confidence in speaking English. Shyness was concluded as a final factor related to speaking anxiety and students were reported to be feeling shy while interacting with people even though they thought that they knew English. Surprisingly, shyness was found as the highest factor affecting speaking anxiety in

Gusti's (2021) study and shyness was embedded in performance factors as well as worry, nervous, and afraid of making mistakes. The purpose of this study was to learn how students perceived their level of nervousness in speaking classes. Five kids from a private junior high school in Bogor participated in this study, which employed a qualitative research design. The three primary instruments employed by the researcher in this study to gather data were the questionnaire, the interview, and observation. The study's conclusions showed that performance variables (100%), cognitive factors (80%), and affective factors (80%) had the greatest effects on students' anxiety. As for performance variables, the fear of making mistakes is another factor causing anxiety for students besides shyness. The majority of participants in the study expressed concern in English classes about making mistakes in front of others and about their habit of nervously touching objects when speaking. In Türkiye, a study by Öztürk and Gürbüz (2014) also focused on the fear of making mistakes as the major cause of speaking anxiety. The researchers aimed to identify the causes of anxiety related to speaking a foreign language. The study included 383 pre-intermediate students from a public university's English preparatory program. The information about the degree of EFL speaking anxiety was gathered via a questionnaire, and participants who were chosen at random were interviewed to obtain detailed information on speaking anxiety. 10 participants stated that they were especially afraid of making pronunciation mistakes. They also added that they would not even want to speak if they were not sure about the pronunciation of the word and this finding clearly shows the extension of the anxiety they feel over speaking skills. While experiencing all these unfavorable conditions in their attempts to speak English, they can not help comparing themselves with their friends and evaluating themselves. This is one of the factors that provoke anxiety for the students and this factor was given as one of the key factors in some

studies. To illustrate, Yan and Horwitz (2008) used interviews to conduct a study on twenty-one Chinese university students to understand why students felt anxious about speaking a foreign language from their viewpoints. Students said they were a little taken aback by the fact that most other students at the university could speak English when they initially arrived. They became nervous by evaluating their language abilities, aptitude, and competency against those of other students. In this sense, Tulgar's (2018) research results are consistent with Yan and Horwitz's (2008) study findings. Tulgar (2018) conducted this research on 383 pre-intermediate students of an English preparatory program at a state university to find out what causes speaking anxiety among Turkish EFL students. The data was obtained through face-to-face interviews and a questionnaire. They reported that they experienced high levels of anxiety when speaking in the target language throughout the early going, particularly in the first few weeks, as they were adjusting to the new surroundings. Their speaking nervousness was primarily caused by the anxiety of making mistakes and receiving a poor grade from language natives. One of the participants said that she was making more mistakes than usual in her home country during the first few weeks since she was feeling so nervous when speaking with her teachers or native speakers. At this stage, fear of negative evaluation can proceed fear of making mistakes and these two factors were both emphasized for speaking anxiety in Tulgar's (2018) study. Another study that highlights the significance of negative evaluation fear is the research carried out by Toubot et. al (2017). The study indicates that a significant worry of receiving a poor evaluation plagues the participants. Three hundred fourth-year English department students from three Libyan institutions comprised the study's sample and they were given a questionnaire to get data for the research. A majority of students (%78.7) feared that they would not give the correct answer and they would receive negative

evaluation if the teacher asked questions which they were not prepared for. In Nuridzdzati and Akhiriyah's (2023) study, it was discovered that even high-achiever students experienced anxiety as a result of negative evaluation apprehension. In this study, eight SMK Negeri 5 Surabaya high achievers served as the research subjects. Focus groups were used to interview each of them to learn more about their speaking anxiety and how it affected them. They learned that fear of receiving a poor grade resulted in less active participation in speaking tasks and more doubt about their accuracy in comprehending the ideas during speaking performance.

2.2.2. Research on the Use of Technology on Anxiety in EFL Speaking

Recent advancements have made technology essential for language learning because of its affordability and practicality. As a result, numerous online learning systems have been used and studied to see how they affect speaking anxiety. According to research, using these platforms significantly affects EFL learners' speaking anxiety. Initially, Hamzaoğlu and Koçoğlu (2016) investigated the use of podcasting to reduce Turkish EFL learners' speaking anxiety. They collected the data through an experimental method, and they used the anxiety questionnaire, which included 24 items about general foreign language class anxiety and in-class activities. It was distributed to the students in two ninth-grade courses at the subject school. Among these pupils, a total of thirty were selected based on their level of anxiousness. These students' oral performances were assessed using the Test of Spoken English, and they also participated in interviews regarding their oral performances and speaking anxiety. The experimental group produced podcasts as well as following the course book and doing the speaking exercises for a duration of 12 weeks, whereas the control group studied the course book. The study's findings demonstrated that students who listened to podcasts performed better in oral presentations and experienced less anxiety

while speaking in front of an audience. The examination of the podcast interviews showed that the students thought podcasts made them feel more confident and less nervous. All in all, they claimed that podcasting relieved them of stress since they produced their podcasts in a calm and pleasant environment at home. The majority of students cited podcasts as a way to reduce their tension and anxiety as they helped them become accustomed to speaking in English. In another experimental study, Punar and Uzun (2019) conducted an inquiry into the impact of Skype conference calls on English speaking anxiety. The goal of the study was to compare the foreign language speaking anxiety levels of students taking Skype TM Conference Call lessons to those taking traditional speaking lessons. The study involved twenty-one adult English language learners at the B1–B2 level, and an actual experimental methodology was employed. It was concluded that Skype TM lowered the anxiety levels of learners in the experimental group and this suggested that it had an effect on the speaking anxiety of foreign language learners. Flipgrid application is another tool utilized for discovering any possible effects of technology on speaking anxiety in the literature and Tuyet and Khang (2020) looked into the matter of decreasing speaking anxiety utilizing the Flipgrid application. With the participation of sixty EFL tenth graders at a Mekong Delta high school, the study combined a quasi-experimental approach with a mixed technique. The modified Foreign Language Classroom Anxiety Scale (FLCAS), a questionnaire, and interviews were the three research instruments used in this study. The results proved that after using Flipgrid, EFL high school students' anxiety levels over learning to speak English decreased. Additionally, the vast majority of students expressed their favorable opinions about using Flipgrid to practice speaking English. The literature also mentioned video blogs in terms of their favorable effects on speaking anxiety. Madzlan et. al (2020) intended to analyze the impacts of using video

blogs by using a mixed-method approach. Groups of tertiary-level ESL students were administered a series of questionnaires and semi-structured interviews. Data analysis using both quantitative and qualitative methods was done, and the findings showed that using video blogs to help ESL learners with their public speaking anxiety had a considerable positive impact. Results showed that students in the treatment group reported a significant decrease in their anxiety related to public speaking in comparison to the control group which did not engage in any video blogging activities. Additionally, treatment group participants reported feeling less nervous when speaking on this online forum. After a few tries, several participants were able to grow more at ease in this less intrusive setting even though they had initially been anxious and camera-conscious. In 2021, Automatic Speech Recognition (ASR)-based websites drew some researcher's attention and Bashori et. al (2021) looked into how students' speaking anxiety was affected by two websites that use Automatic Speech Recognition (ASR): I Love Indonesia (ILI) and NovoLearning (NOVO). 232 Indonesian secondary school students took part in their quasi-experimental research. They were split up into three groups: a control group went to regular classes, and the other two experimental groups got ASR-based interventions (ILI, NOVO). The results showed that the students in the two experimental groups—ILI and NOVO—performed far better than the students in the control group and both websites helped the students' speaking anxiety. Another striking conclusion made in the study was that NOVO was beset by fewer technical errors, which probably made the students feel less nervous during the learning process. A year later, Bashori et. al. (2022) did the same research by using the same websites in a different context targeting 573 Indonesian vocational high school students. Different from their previous study, they conducted interviews with five English professors and eleven of the students who took part in these online activities.

The findings demonstrated that students assessed the learning websites favorably and thought that web-based language learning could help them with their speaking anxiety. According to the interviews, speaking in front of the ASR-based websites caused students to feel less nervous than speaking in front of peers or other people. Eleven students who took part in both web experiments were interviewed, and the results showed that speaking to computers or websites caused them less anxiety than chatting to friends or other people. Even more, one participant said: "Talking to people increases my anxiety. Speaking to the computer (website) makes me feel less awkward". With the rapid development of technology regarding Artificial Intelligence, researchers have shifted their attention to AI-based technology to help learners overcome their anxiety about speaking English. In this sense, Chen (2022) tried to uncover if technology-enhanced instruction can lower speaking anxiety in EFL students by applying a website ([virtualspeech.com](https://www.virtualspeech.com)) and a virtual reality application (Orai). For four weeks, thirty-three university students were split into three groups, and they were given instructions that were either lecture-based, mobile-assisted, or virtual reality-facilitated. All three groups' perceived speaking anxiety levels decreased after receiving the appropriate instruction. The results indicated that the instructional feedback produced by AI reduced the participants' speaking anxiety. Moreover, the combination of AI and Automatic Speech Recognition functions produced instructional feedback in a non-threatening manner, which was likely to reduce fear and anxiety in the study.

2.2.3. Research on the use of AI-based Chatbots on Anxiety in EFL Speaking

Despite this interest in AI-based Technologies, not more than a few studies, to the best of our knowledge, have studied the impact of AI-based chatbots on EFL speaking anxiety. Some preliminary work on the impact of chatbots on speaking anxiety was

conducted by Hanna (2022) in the South Korean context with 30 EFL college students. The purpose of the study was to determine the impacts of virtuality-based English learning on EFL learners' speaking abilities and the study findings also provided the readers with some implications for the role of chatbots on speaking anxiety. An experimental research design was pursued and participants were randomized into three groups: the control group, the human-to-human interaction in the VR world group, and the human-to-AI chatbot interaction in the VR world group. According to the results of the study, virtual reality-based English-speaking instruction often raised study participants' interest and decreased their anxiety when speaking the language. Learners stated that conversing in English in a virtual reality setting where their true identities were concealed boosted their motivation to get better at the language and gave them less pressure to speak English, which indirectly implied that their speaking anxiety levels were lowered accordingly. The second and most recent empirical research done on the related issue was the one by Hsu et. al (2023). The objective of this research was to provide an interactive chatbot system for EFL learners called TPBOT, or "TOEIC Practice Chatbot," to help them overcome their phobia of speaking English and give children access to online chatbots so they may practice speaking English whenever they want. An experimental research design was employed and Taiwanese students with oral TOEIC® (Test of English for International Communication) test scores below 100 were divided into an experimental and a control group in this project. The conclusions derived from the study were that EFL students could overcome their ingrained fear of speaking English by using TPBOT to practice oral English. Additionally, TPBOT was viewed as an excellent instrument for assisting students with their self-learning to help reduce their concerns regarding conversing in foreign languages with visitors. However, another recent study carried out by El Shazyl (2021)

found contrary results compared to the results of the aforementioned studies. This study investigated the significance of artificial intelligence applications in this context. In an EFL class in Egypt, 48 undergraduate participants participated in speaking practice for FLA management. A 33-item FLA questionnaire was used in a quasi-experimental pretest-posttest design spanning eight weeks to assess learner anxiety levels. Through roleplaying, their oral skill was evaluated using an interactive public version of the IELTS (International English Language Testing System) speaking evaluation rubric. The results indicated that learners' FLA increased when conversationally improved AI chatbots were used in interactive exercises. In a similar vein, Çakmak (2022) tried to unveil the impacts of chatbots on EFL speaking anxiety. A mixed method was used and the chatbot of Replika was utilized as a tool to gather the data. Ninety EFL students from a Turkish public institution took part in the current study. For twelve weeks, outside of class, they practiced specific subjects using the Replika program. Every pupil was evaluated using the L2 speaking anxiety measure prior to and following the intervention. In addition, an open-ended survey was used to find out how they felt about practicing their L2 speaking with chatbots. The conversations with the chatbot were recorded for a speaking task on wellbeing that was selected at random. It was discovered that attitudes and views regarding the chatbot interaction were unfavorable. Pupils stated that they had trouble being understood exactly, which may have led to increased apprehension when speaking in a second language. The researcher made the conclusion that while interacting with chatbots is a creative way for students to practice speaking, it may not always be a dependable way to reduce their nervousness while speaking a second language.

2.2.4. Conclusion

The analysis of the relevant literature reveals the essential role of speaking anxiety as one of the obstacles in language learning, and studies demonstrate that plenty of factors play a role in speaking anxiety. These are language proficiency, preparedness, fear of mistakes and evaluation, peer pressure and peer comparison, performance pressure, and psychological concerns. Research also manifests a negative correlation between speaking anxiety and speaking skills. In other words, learners who have a high level of speaking anxiety tend to have worse speaking skills. Besides, they tend to be less willing to participate in speaking activities. Numerous studies on the subject of the role of technology in language learning demonstrate its indisputable influence on students' speaking anxiety. Online platforms such as podcasts, video blogs, Skype, ASR-based websites, and applications help learners reduce their speaking anxiety as they view these platforms as non-threatening and comfortable. Additionally, they develop positive attitudes towards speaking activities and they get accustomed to speaking English. Besides all these technological platforms, the development of AI technology is creating a new dimension to language learning and learners are getting familiar with different AI-based chatbots. However, there is little information on the use of AI-based chatbots in lessening speaking anxiety, and the research shows contradictory results. While some studies indicate that AI-based chatbots are beneficial tools in elevating speaking motivation and performance and also in decreasing speaking anxiety, some research points out that chatbots increase learners' speaking anxiety. Moreover, learners state unfavorable opinions about chatbots. Therefore, it is vital to advance the research on the effects of AI-based chatbots on speaking anxiety and find out whether they have a role in speaking anxiety.

3. METHODOLOGY

This section introduces the methodology. First, the research design is outlined. Subsequently, the study participants are presented. Then, the tools for gathering data are introduced. Thereafter, the procedures of the research are given. Finally, an explanation of data analysis is provided.

3.1. Research Context

This study explores the impact of AI-based chatbots on the speaking anxiety of learners. It is analytical because it makes an effort to break down the facts into manageable chunks and then connects them to create a coherent picture of the whole speaking anxiety phenomenon. Moreover, the study has a deductive goal as it starts with the inquiry of whether chatbots are useful in reducing speaking anxiety, which is founded on the hypothesis that technology may offer some advantages for English learning. To this end, the methodological approach taken in this study is a quasi-experimental research design. A quasi-experimental method is called a scientific interventional study that uses randomized assignment to evaluate the causal impact of an intervention on a target population. A quasi-experimental methodology was adopted for this study as quasi-experimental designs are built using real-world scenarios, making them more likely to mirror the circumstances seen in educational settings (Campbell & Stanley, 1963). While seeking varied degrees of rigor, to establish a causal relationship between the intervention and the outcome variable, quasi-experimental methods provide greater flexibility than actual studies (Eliopoulos et al., 2004). Moreover, these designs are easier to conduct research on as it is simpler to reach access to subject communities and they are less disturbing and invasive than others (Campbell & Stanley, 1963). Certain practical and ethical problems with real-

life experiments can be mitigated by quasi-experimental methods, especially with regard to random assignment and selection (Grant & Wall, 2009). For all these reasons, quasi-experimental research design is used in this research.

3.2. Participants

The study was conducted with 44 students from the Department of Foreign Languages at a state university in Kocaeli, Türkiye. They were EFL students at the intermediate level, or B1 according to the CEFR. Of the participants, 24 of them were males (% 54.5) and 20 of them were females (% 44.5). The mean score for their age was 19.02. Considering the university departments where the participants were from, most of them were engineering faculties. 30 participants were from engineering (% 68.2), seven participants were from architecture (% 15.9), six participants were from science (% 13.6) and only one student was from Aerospace Engineering (%2.3).

The participants were the students at a preparatory school that provided intense language education to the students. They started their actual departments at the university after passing the proficiency exam at the beginning of the semester. To pass the proficiency exam, they needed to get a minimum score of 60. Students were placed into their classes as a result of their placement test results at the very beginning of the semester. Within the context of this study, students had 24 hours of English lessons at all proficiency levels per week. Two different courses were offered by the Department of Foreign Languages; main course, and reading and writing. The course book embodied all language skills such as reading, writing, grammar, listening, speaking, and vocabulary. Additionally, the students had reading and writing classes in which they followed a book. The course load of each class was shared by two instructors and each instructor had two classes. In this sense, convenience sampling was used in this study to choose two pre-existing courses that were available for the investigation.

Additionally, to identify and investigate possible explanations for the outcomes of the analysis, focus group research was required. Five people were selected at random from each group, and each group had a 20-minute meeting. Five of the participants were male and five of them were female. The age of the participants ranged from 18 to 23. The mean score for their age was 19.

3.3. Data Collection Tools

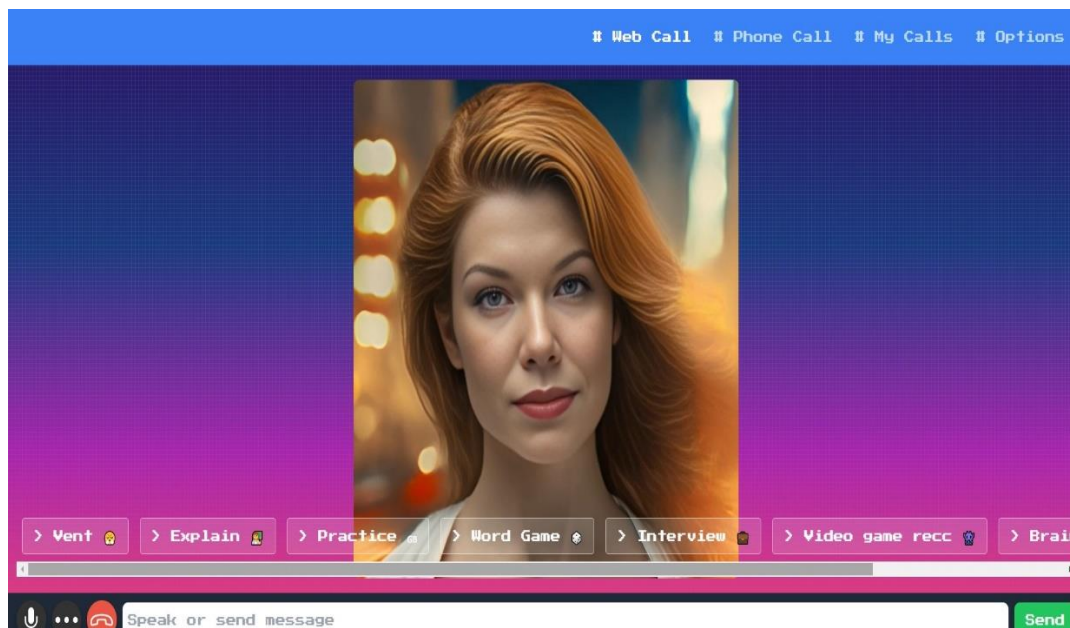
In the study, the data was collected by two scales which aimed to obtain information about participants' demographic information and speaking anxiety (See Appendix A) and a focus group interview was conducted with five participants from each group. The first part of the scale entailed the background questionnaire which asked for demographic information such as age, gender, and departments. The second part included the FLCAS (Foreign Language Classroom Anxiety Scale) developed by Horwitz et al. (1986b). The FLCAS is a five-point Likert scale which included 33 items and three sub-constructs as communication apprehension, test anxiety, and fear of negative evaluation. In the current study, the Turkish version of the scale adapted by Aydin et al. (2016) was used to prevent any misinterpretation of the statements and increase the reliability of the scale. For each statement in the survey, students were required to indicate their agreements with the items as 1= I don't agree at all, 2= I don't agree, 3= I neither agree nor disagree, 4= I agree, 5= I totally agree. Cronbach's Alpha for the Turkish version was found to be 0.86. In this research, only 18 items of the scale were selected as they had a direct relation with foreign language speaking anxiety. This relationship was also confirmed in previous studies in the literature (Saltan, 2003; Öztürk & Gürbüz, 2014). For this reason, these items were utilized to uncover whether the participants had speaking anxiety and what the level of their speaking anxiety was. Finally, a focus group interview was carried out with five

participants from the control group and five participants from the experimental group. The aim was to gain a deeper understanding of the results of the study and also the factors lying behind the differences in learners' speaking anxiety. A separate face-to-face interview was conducted with each group to guarantee that the opinions were unfiltered and unique and it lasted roughly 20 minutes each. Three questions were prepared and the responses of the participants were written down by the researcher. The personal information of the participants was kept confidential and utilized anonymously in the research.

3.4. Procedure

Upon receiving the ethical committee's essential consent from the Faculty of Educational Sciences at Istanbul Medeniyet University (See Appendix B), the administration of the university where the research was to be carried out was notified to get permission. Next, the researcher informed the participants about the purpose, significance, and procedure of the study in a detailed way. Besides, the confidentiality of the data and the voluntary nature of the participation were assured to the participants. They were also told that they could stop at any moment and they were not required to finish the procedures. For this reason, a Google Forms approval section was included to obtain the participants' consent at the start of the questionnaire.

The AI chatbot utilized in this research is called Call Annie, an application that enabled users to make video calls and practice English. It also served as an always-available-friend for its users as they could talk to the chatbot at any time and any place. There were two ways to have access to the application. First, it could be reached through its website (callannie.ai/call) by either making a phone call or video call. The screenshot of Call Annie on the website can be seen in Figure 1.

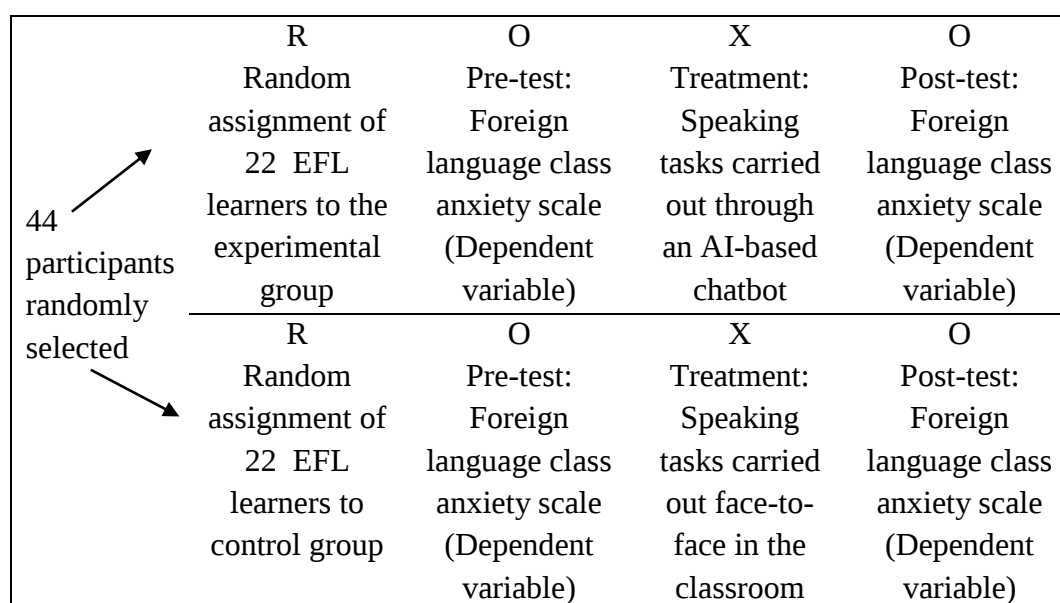
Figure 1*Screenshot of Call Annie on the Website*

The users could benefit from the basic features of Call Annie on the website without paying any money whereas they had to pay to take advantage of the advanced features of Call Annie. They could access the application with a Google e-mail address. When they signed in, they were welcomed by Annie who was the main speaking partner in the application yet users could choose from numerous characters, each with different names, traits, accents, and styles. Once they selected the character that they wanted to converse with, they could click the video call button to start the conversation. Thereafter, a dialogue between the user and the AI character was maintained. Second, the application was accessible through mobile phones which the users could download from Google Play or Apple Store. However, they could use it if they paid for it. In this study, participants were instructed to use the application (with its basic features) on the website so that they would not have to pay.

The research took place in the Spring Semester of 2023-2024, and it lasted for six weeks. Figure 2 demonstrates the whole procedure of the study.

Figure 2

The flowchart of the randomized pretest-posttest control and experimental group design (Fraenkel et al., 2012).



First, two pre-existing classes of the researcher were picked for the study and they were designated as the experimental and control groups at random. Then both classes took the pre-test. Afterwards, the experimental group was assigned to have speaking sessions with the AI-based chatbot which was called Call Annie. On the other hand, the control group completed the speaking sessions face-to-face with their peers. Finally, they took the post-test. After the post-tests, a focus group interview comprising three questions was held with five participants from each group. The interview was conducted face-to-face and the total duration for the interview was 40 minutes.

3.4.1. Pre-test Administration

At the beginning of the study, the Turkish version of the FLCAS adapted by Aydin et al. (2016) was filled out by the participants. The participants were expected to give a response to 18 items scrutinizing their foreign language speaking anxiety and it took roughly 10 minutes. The survey also included a background questionnaire

investigating the participants' age, gender, and department. The questionnaire was given in Turkish to get more reliable data as the participants' level of English proficiency at the time was not sufficient enough to comprehend each statement and provide an appropriate response.

3.4.2. The Treatment Process

At the very beginning of the treatment process, the researcher provided the participants in the experiment group with basic information about the use of Call Annie, and thereafter, the students were asked to test it in the classroom to check if they encountered any problems. The students were also asked to write and save the prompts that the researcher told them before they started to engage in the chatbot. The prompts were as follows: a. ask one question each time but I can ask many questions., b. always use simple, pre-intermediate level vocabulary., c. ask one short question after my response to keep the conversation going., d. when you answer a question, ask follow-up questions to me., e. do not give answers with more than one sentence each time. Upon having completed the orientation process, the participants were given instructions about the process. They were told to engage in 10-minute video calls once a week for the whole duration of the process. This comprised of six chat sessions totally, with the topics relevant to the ones covered in the curriculum's textbooks and the participants' daily lives. The chatbot sessions were generally conducted as topic-based speaking activities and a list of speaking topics was provided to the participants each week. These suggested topics in the list aligned with the topic of their curriculum textbooks which were covered that week in the classroom. The participants recorded the chat sessions outside the classroom and submitted them to the researcher of the study via Microsoft Teams at the end of each week. The recordings were saved by the researcher to verify the completion of the video calls. The participants were assured

that the recordings would not be shared with anybody and would not be evaluated. The control group was assigned six speaking sessions with their peers in the classroom within six weeks of the research duration. This meant having one speaking session per week which lasted for 10 minutes. The speaking topics were parallel to the ones covered in the curriculum's textbooks. In this sense, the suggested speaking topics that were shared with the experiment group on a weekly basis was also shared with the control group, meaning that both groups talked about the same topics each week. The participants in the control group were monitored by the instructor during the speaking activities to make sure they were on task.

3.4.3. *Post-test Administration*

At the last stage of the study, the Turkish version of the FLCAS, which scrutinizes the level of the participants' foreign language speaking anxiety, was conducted again to reveal any changes considering students' English speaking anxiety after the six weeks of treatment process.

3.5. Data Analysis

The data analysis for the study was conducted using The Statistical Package for Social Sciences (IBM SPSS Statistics 25.0 software). In the first place, numbers and percentages of the participants' departments and genders were measured, and the mean score for their age was reported. Finally, Cronbach's Alpha was utilized to calculate the reliability coefficients.

As Table 1 illustrates, the reliability of the scale with 18 items was computed, and .87 was found to be the reliability coefficient value of the pre-tests and it was found to be .91 for the post-tests. The percentage of variance for the pre-tests was found to be

123.16, and it was 139.98 for the post-tests. The values given in the table below demonstrated a satisfactorily high level of validity and reliability of the data.

Table 1

Reliability Coefficients of Pre and Post-test

	Reliability Coefficients (Cronbach's Alpha)	% of Variance
Pre-test	.87	71.38
Post-test	.91	73.59

Because of the small number of participants, it was not possible to assume a normal distribution, hence non-parametric approaches were employed to further examine and compare the data. To ascertain each group's degree of speaking anxiety before and after the test, a descriptive analysis was first conducted to disclose the mean scores of the pre and post-tests. After that, the Wilcoxon analysis was done to see if the implementation had caused any notable changes in participants' speaking anxiety scores between the pre-tests and post-tests.

To find out about the speaking anxiety of the participants, 18 items from the Foreign Language Classroom Anxiety Scale (FLCAS) were used in this study. Some components were reverse-coded to make sure that they were all aligned with the measure's construct in the same direction. In reverse coding, the scoring is modified so that higher scores consistently correspond to higher construct levels. The reliability of the scale is guaranteed by this procedure, which also helps to prevent response bias. The following items were reverse-coded: 2, 14, and 18. Participants responded on a 5-point Likert scale: 1 (Strongly Disagree), 2 (Disagree), 3 (Neither Agree nor Disagree), 4 (Agree), 5 (Strongly Agree). After reverse coding, response 1 was recoded to 5, 2 to 4, 3 remained 3, response 5 was recoded to 1, and finally response 4 was recoded to 2.

Besides other analyses conducted in the study, the researcher held a focus group interview and the data obtained from the interview was investigated. Three questions in total were directed to five participants from each group and lasted approximately 40 minutes in total. The responses of the participants were written down and then scrutinized by the researcher. The process of analysis targeted gaining a broader perspective on participants' opinions and detecting the differences between the control and experimental groups. The findings gathered in this process will be discussed in the following parts of the study.

4. FINDINGS

In this part, the results acquired from the analysis are presented regarding the research questions. First, the effects of traditional speaking tasks on speaking anxiety are presented. Second, the effects of AI-based chatbot speaking tasks on speaking anxiety are displayed. Finally, the results of the control and experimental groups are compared to uncover whether there is any significant difference in their level of speaking anxiety.

4.1. Research Question 1: What is the level of speaking anxiety among Turkish EFL learners?

4.1.1. Speaking Anxiety Levels of the Control Group

The first research question of the study sought to find out the speaking anxiety levels of the participants and to investigate it, descriptive statistics were run. As can be seen from Table 2, the mean scores of the participants decreased to 2.34 from 2.50, indicating a decrease in their speaking anxiety levels after the intervention.

Table 2

The Mean Scores of Speaking Anxiety Levels in the Control Group

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Pre-test	22	2.50	.13	.60
Post-test	22	2.34	.13	.61

4.1.2. Speaking Anxiety Levels of the Experimental Group

The findings revealed that the experimental group had high speaking anxiety levels both before and after the implementation. Table 3 displays the mean scores, standard error mean, and standard deviation of pre and post-test scores of the experimental

group. As the table demonstrates, there was a decrease in the mean scores of the participants from 2.73 to 2.69, indicating a decrease in their anxiety levels.

Table 3

The Mean Scores of Speaking Anxiety Levels in the Experimental Group

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Pre-test	22	2.73	.13	.63
Post-test	22	2.69	.15	.68

4.2. Research Question 2: Does the use of traditional speaking tasks affect

EFL speaking anxiety?

The second research question of the study sought to explore the impact of traditional speaking tasks on their speaking anxiety. To investigate if the difference in the participants' mean scores from pre- and post-tests was significant, a Wilcoxon test was computed (Table 4). The analysis revealed that the post-test scores of 14 participants were lower than their pre-tests with a mean rank of 12.39, indicating that the anxiety level of the 14 participants decreased after the intervention. The analysis also showed that this decrease was significant as the significance value was found to be .04.

Table 4

Comparison of Pre- and Post Tests Scores of the Control Group (Wilcoxon Test)

		N	Mean Rank	Sum of Ranks	Asymp. Sig. (2-tailed)
Post-test – Negative		14	12.39	173.50	.04
Pre-test Ranks					
	Positive Ranks	7	8.21	57.50	
	Ties	1			
	Total	22			

The analysis also showed that the anxiety level of the participants decreased only in one of the items with a significance value of lower than .05 (See Appendix C).

According to the Wilcoxon test, the significance level of the item “It frightens me when I don’t understand what the teacher is saying in English language” was found to be .04, indicating a significant difference in the pre- and post-test scores (Table 5). This finding showed that the participants in the control group began not to feel frightened of understanding their teachers when their teacher spoke in English at a significant level.

Table 5

The Items with a Significant Change in the Mean Scores in the Wilcoxon Test.

		N	Mean Rank	Sum of Ranks	Asymp. Sig. (2-tailed)
Item 4. It frightens me when I don’t understand what the teacher is saying in English language	Negative Ranks	10	6.30	63.00	.04
	Positive Ranks	2	7.50	15.00	
	Ties	10			
	Total	22			

4.3. Research Question 3: Does using AI-based speaking tasks via chatbots affect EFL speaking anxiety?

To investigate if there was a significant change in the anxiety levels of the participants before and after the intervention, a Wilcoxon Test was run (See Appendix D). Table 6 shows that based on the comparison of the paired pre- and post-test items, the significance level was .78, and post-test scores of 11 participants were lower than their pre-test scores with a mean rank of 11.23. Given these results, even though the speaking anxiety of the participants decreased slightly after the intervention, there was no statistically significant difference in the anxiety level of the participants before and after talking to an AI-based Chatbot.

Table 6

Comparison of Pre- and Post Tests Scores of the Experimental Group (Wilcoxon Test)

		N	Mean Rank	Sum of Ranks	Asymp. Sig. (2-tailed)
Post-test – Pre-test	Negative Ranks	11	11.23	123.50	.78
	Positive Ranks	10	10.75	107.50	
	Ties	1			
	Total	22			

The findings further revealed that the change in the anxiety levels of the participants was significant only for one item with a significance value of lower than .05 (Table 7). Namely, the significance value for the item “I never feel quite sure of myself when I am speaking in English” was found to be .01, indicating a significant decrease in the participants' anxiety levels for this item. This significant difference indicated that the participants in the experimental group started to feel significantly less anxious while they were talking in English in the classroom after the intervention with an AI-based chatbot.

Table 7

The Items with a Significant Change in the Mean Scores in the Wilcoxon Test.

		N	Mean Rank	Sum of Ranks	Asymp. Sig. (2-tailed)
Item 1. I never feel quite sure of myself when I am speaking in English.	Negative Ranks	8	4.50	36.00	.01
	Positive Ranks	0	.00	.00	
	Ties	14			
	Total	22			

4.4. Research Question 4: Is there a difference between the uses of traditional and AI-based speaking tasks via chatbots regarding the level of speaking anxiety?

A Mann-Whitney U test was performed to compare the anxiety levels of participants in the experimental and control groups before the intervention. As can be seen from Table 8, the mean rank was found to be 24.32 for the experimental group while it was 20.68 for the control group. Even though the mean rank for the experimental group was found to be higher than the control group, the significance value was .35, which meant that the difference in the anxiety levels between these two groups was not statistically significant as the significance value was greater than .05.

Table 8

Pre-test Scores for the Experimental and Control Groups (Mann Whitney U Test)

	Group	Mean Rank	Sum of Ranks	Asymp. Sig. (2-tailed)
Pre-test	Experimental Group	24.32	535.00	.35
	Control Group	20.68	455.00	

To investigate if there was a statistically significant difference in the individual items in the pre-test scores for the two groups, another Mann-Whitney U test was performed (Appendix E). The analysis displayed that the difference between the control and experimental group was significant only for items 1 and 23 (Table 9).

Table 9

Items with a Significant Difference from the Mann Whitney U Test for the Pre-tests of Experimental and Control Groups

	Group	N	Mean Rank	Sum of Ranks	Asymp. Sig. (2-tailed)
Item 1. I never feel quite sure of myself when I am speaking in English.	Experimental Group	22	27.34	601.50	.01
	Control Group	22	17.66	388.50	
	Total	44			
Item 23. I always feel that the other students speak the English language better than I do.	Experimental Group	22	26.39	580.50	.03
	Control Group	22	18.61	409.50	
	Total	44			

As can be seen from table 9, for item 1, the mean rank was higher (27.34) for the experimental group while it was 17.66 for the control group. The significance value was .01, which indicated that there was a significant difference between these two groups. For item 23, the mean rank for the control group was 26.39 while it was found to be 18.61 for the control group. As the significance value was below .05, the difference between the two groups was significant for item 23, as well.

Finally, to compare the speaking anxiety levels of the participants in experimental and control groups after the intervention, the Mann-Whitney U test was computed (Table 10). The analysis showed that the mean rank was 25.36 for the experimental group whereas it was 19.64 for the control group. However, even though the mean rank was higher with the experimental group, no statistically significant difference was found between the post-test scores of the participants with the significance value of .14.

Table 10

Post-test Scores for the Experimental and Control Groups (Mann Whitney U Test)

	Group	Mean Rank	Sum of Ranks	Asymp. Sig. (2-tailed)
Post-test	Experimental Group	25.36	558.00	.14
	Control Group	19.64	432.00	

Furthermore, to find out if there was a significant correlation between the post-test results for the experimental and control groups, the Mann-Whitney U test was performed for the individual items (See Appendix F). The analysis showed that there was a statistically significant difference between the post-test scores of the participants in the experimental and control groups for items 1, 3, and 23 (Table 11).

Table 11

Items with a Significant Difference from the Mann Whitney U Test for the Post-tests of Experimental and Control Groups

Items	Group	N	Mean Rank	Sum of Ranks	Asymp. Sig. (2-tailed)
Item 1. I never feel quite sure of myself when I am speaking in English.	Experimental	22	26.41	581.00	.04
	Control	22	18.59	409.00	
	Total	44			
Item 3. I tremble when I know that I am going to be called on in a language class.	Experimental	22	26.59	585.00	.03
	Control	22	18.41	405.00	
	Total	44			
Item 23. I always feel that the other students speak the English language better than I do.	Experimental	22	26.25	577.50	.04
	Control	22	18.75	412.50	
	Total	44			

As can be seen from Table 11, the mean ranks for these three items were higher in the experimental group than in the control group, indicating higher anxiety levels for the experimental group for these individual items after the implementation. To

begin with, the participants in the control group felt more sure of themselves than the ones in the experimental group. The mean rank for the experimental group was found to be 26.41 while it was 18.59 for the control group, and this difference between the two groups was found to be statistically significant with a significance level of .04, meaning that after the intervention, the students in the experimental group had statistically significantly more speaking anxiety than the participants in the control group. Secondly, the analysis for item 3 regarding their anxiety when they are nominated in the classroom displayed that the students in the experimental groups were significantly more anxious than the ones in the control group. The mean rank of the experimental group was 26.59 while it was 18.41 for the control group, and the difference was significant with a value of .03. Finally, feeling that the other students speak better in language classes was another item which was found to differ significantly between the two groups in the post-test. The analysis showed that the mean rank for the experimental group was 26.25 whereas it was 18.75 for the control group. Furthermore, it was found that this difference was statistically significant as the significance value was .04.

5. CONCLUSIONS and DISCUSSION

This section gives the conclusions of the study and discussion considering the impacts of AI-based chatbots on EFL learners' speaking anxiety. Formerly, the conclusions of the study are introduced. Then, the findings of the research are compared to the former studies in the literature. After that, practical recommendations are suggested to the teachers, syllabus designers, and institutions. Finally, recommendations for further studies and limitations of the study are given.

5.1. Conclusions

In the study that aims to unveil the impacts of AI-based chatbots on EFL learners' speaking anxiety, three conclusions can be drawn regarding the findings gathered. First, Turkish EFL learners in the study are anxious to speak English before and after the implementation. At the beginning of the research, the participants assigned to use an AI-based chatbot outside the classroom have higher anxiety levels compared to the ones engaged in traditional speaking tasks with their peers in the classroom. Second, the study demonstrates that AI-based chatbot speaking tasks slightly reduce EFL learners' speaking anxiety levels but not at a significant level. However, traditional speaking tasks decrease EFL learners' speaking anxiety levels significantly. Third, both implementations lead to some positive changes in participants' speaking anxiety at the end of the study. To illustrate, they become more sure of themselves when speaking in English after conducting speaking tasks through the AI-based chatbot. This implies increased self-confidence and less hesitation in speaking English, which has a close relationship with speaking anxiety. The non-judgmental speaking environment they get involved in with the AI-based chatbot helps them trust their capabilities with more confidence and reduce their speaking anxiety. On the other hand, learners

engaging in traditional speaking activities start to feel less frightened when they do not understand the teacher's English. This manifests in improved self-confidence and coping strategies which help them decrease their speaking anxiety. They are exposed to a range of language barriers in these tasks and the tasks teach them to persevere through challenges related to comprehension. As they learn how to tackle comprehension problems, they start to feel less anxious about speaking English. Moreover, traditional speaking tasks with peers in the classroom cause EFL learners to have anxious concerns about social comparisons less than the participants who practice with AI-based chatbots, meaning that they are less worried about how their language skills are compared to those of their peers. Based on this finding, it can be suggested that less focus on social comparison results in higher self-confidence, which automatically causes lower speaking anxiety levels. Besides, traditional speaking tasks help learners regulate their emotions while speaking English. To explain, EFL learners may sometimes display emotional responses of anxiety such as trembling when they speak English. However, learners engaging in speaking tasks via AI-based chatbots display these responses more than the ones engaging in traditional face-to-face pair work speaking activities. This shows a positive and motivating shift, indicating that the learners in the traditional group feel more at ease and confident. Consequently, it is seen that both methods help learners lessen their speaking anxiety at different levels and it is essential to benefit from the advantages of both methods with a sense of balance. Therefore, it can be asserted that tasks in foreign language speaking have important effects on EFL learners' speaking anxiety. The findings from the study also demonstrate that both tasks carried out with AI- based chatbots and traditional classroom settings help learners mitigate their speaking anxiety. However, the speaking tasks in the classroom setting have more positive impacts on easing the

learners' speaking anxiety. These findings manifest various dynamics that should be considered in the implementation of speaking tasks in the foreign language learning process. Particularly, balancing the impacts of both traditional speaking tasks and AI-based chatbots on learners' speaking anxiety may contribute to a more efficient learning environment.

The results of focus group interviews pinpoint that the conclusions mentioned above can relate to several factors. First, the interlocutor effect is one of the factors that impact how comfortable learners feel when engaging in traditional speaking tasks in the classroom. They state that it is important for them to talk to someone who is at the same language proficiency level as themselves. This also refers to an environment free from "social comparison" which is also mentioned by learners as an important alleviating factor in learners' speaking anxiety. Second, a low affective filter is another factor that makes learners feel less anxious about making mistakes and this indicates a relaxed state of mind which is essential for speaking skills. Finally, collaborative learning is the last alleviating factor in learners' speaking anxiety. Learners state that the constructive feedback they receive from their friends while speaking provides them with positive reinforcement and reduces their speaking anxiety. They also state that it would make them feel uncomfortable if they received too much feedback. On the other hand, participants receiving AI-based chatbot treatment state that psychological safety is one of the factors that decreases their speaking anxiety. Learners mention that the low-pressure environment away from judgments, criticisms, and negative reactions while talking to the chatbot makes them feel relaxed and they would even prefer it to talking in front of people. Finally, human-like interaction is the last factor that mitigates learners' speaking anxiety. The participants state that the chatbot proceeds the video call sessions based on the previous video call, meaning that each session is

connected to the previous one and these personalized interactions with the chatbot help learners feel relaxed. Besides, the participants also mention the factors that they believe increase their speaking anxiety. The technological limitations of the chatbot are one of the key factors in increasing their anxiety. They state that the chatbot does not recognize the attempt to move on to a new topic they introduce when they wish to move to another topic. Instead, it keeps talking about the previous topic no matter how hard they try to diverge the direction of the topic. They add that the video calls are sometimes interrupted by either a low internet connection or subscription payment options, and when they click on the “Maybe later” button to postpone the subscription, it does not continue the conversation. When they feel that it is out of their control, they feel nervous.

5.2. Pedagogical Implications

Based on the results of this study and earlier research, some pedagogical conclusions on the impact of AI-based chatbots on EFL speaking anxiety might be drawn. Initially, the findings demonstrated that AI-based chatbot reduces learners’ speaking anxiety slightly but it is not at a significant level. These findings contradict some studies in literature examining the effects of AI-based chatbots on speaking anxiety (Çakmak, 2022; El Shazly, 2021) which revealed that learners’ speaking anxiety levels increased significantly upon using AI- based chatbots. On the other hand, these findings are in line with some studies that analyzed the effects of AI-based chatbots in EFL speaking classes (Bao, 2019; Hanna, 2022 Hsu et al., 2023). The findings bear resemblances in terms of concluding that AI-based chatbots decrease EFL learners’ speaking anxiety; however, the results differ in that the previous studies found a significant decrease in anxiety levels. The reason for no significant decrease in speaking anxiety can be linked to two factors such as the novelty of the AI-based

chatbot for the participant students (Ayedoun et al., 2019; Çakmak, 2022; Fryer et al., 2019) and technological limitations (Yang & Zapata-Rivera, 2010). First, the term "novelty effect" describes how a technology's novelty to students fades as they get more accustomed to it. This initial unfamiliarity can have led to anxiety among the participants since they were not sure about the chatbot's capabilities and overall interaction process. They might have even believed that these applications were incomprehensible to them, or that they were incomprehensible to the applications (Dizon, 2017). Furthermore, considering the short duration of the AI-based chatbot intervention in the study, it is likely that learners were not able to become familiar with the chatbot system as they had only 6 weeks in the study. Adaptation to the system itself may require a longer period of time with regular interaction. Another important thing is that the participants might not have felt comfortable as they were also expected to record the video calls while trying to get used to the system. Although the participants were told to record the video calls for the sake of the reliability of the study, this situation may have created anxiety for them. Second, the limitations of the chatbot can have been another factor for the insignificant decrease in the anxiety levels of the participants. For instance, the chatbot used in the study is unable to identify new subjects that the learner brings up. That is, the limited artificial intelligence chatbots are unable to understand student input that is outside of their scope (Yang & Zapata-Rivera, 2010). To be more specific, when they sometimes try to change the topic as conversations progress, the chatbot used in the study usually persists in talking about the current topic. Communication breakdowns may occur in such a case; therefore, it can cause anxiety for the learners. L2 learners need to be in a positive emotional state to manage English speaking anxiety, and this positive emotional state results from an effective interaction (with few breakdowns and misunderstandings), feeling

understood and being able to comprehend the other person (Çakmak, 2022). In the current study, these breakdowns in communication not only result from the chatbot's poor sense of identifying the desire to alter the topic but also stem from the subscription payment options which pop up very frequently during the conversation. Moreover, in the free version, the chatbot sometimes stops talking and students may restart the conversation. These frequent breakdowns during the conversations may have affected learners' anxiety unfavorably.

On the other hand, the findings from the study unearthed that there is a significant difference between traditional and AI-based chatbot speaking tasks in terms of their impact on the levels of speaking anxiety of the students. The findings revealed that the speaking anxiety levels of the participants engaged in traditional speaking tasks were significantly lower than the ones engaged in AI-based chatbots. This finding does not correspond with the results of a similar study recently conducted by Hsu et al. (2023) which emphasize the efficiency of the use of AI-based chatbots on speaking anxiety. In their study, 30 EFL learners from a college in South Korea were randomly assigned to three groups: human-to-human interaction in the VR world, human-to-AI chatbot interaction in VR world, and the control group. The study found that the group which had human-to-AI chatbot interaction displayed a significant improvement in speaking English ability and a reduction in speaking anxiety. However, in the current study, face-to-face pair work speaking activities reduced speaking anxiety significantly. In this sense, the findings of the study are in line with several studies (Ataş, 2014; Campbell & Ortiz, 1991; Kılıç, 2014; Suwantarathip & Wichadee, 2010; Rianti et al., 2022; Tabatabaei et al., 2015; Young, 1998) which found out the lowering impact of pair work speaking activities on speaking anxiety levels. It is evident in the literature that a cooperative learning environment and interaction with peers create a supportive

learning environment for the learners (Suwantarathip & Wichadee, 2010), which helps them build self-confidence (Liu, 2007). In this way, students improve their learning outcomes by gaining new views, addressing misconceptions, and clarifying their understanding through the act of expressing and discussing their ideas with a partner (Topping & Ehly, 1998). While interacting with their peers, students can get fruitful feedback from each other during or after the activity and improved comprehension of certain linguistic patterns as a result of the feedback can build up self-confidence and eliminate apprehension in speaking anxiety. Moreover, speaking activities with peers develop communication and interpersonal skills (Prichard & Bizo, 2000). When the learners have good interpersonal and communication skills, they are more likely to feel confident and prepared when speaking. Being able to communicate well and navigate social situations with ease might make the learners feel more confident and less anxious.

All in all, it is vital to note that there is a lot more to learn about the relationship between speaking anxiety and AI-based chatbots, and this study sought to reveal the impact of AI-based chatbots on speaking anxiety, and how it differed from face-to-face activities. The results show that the use of AI-based chatbots are not as effective as anticipated in alleviating learners' speaking anxiety, yet this research still provides a perspective into the use of AI-based chatbots to reduce EFL speaking anxiety. It also revealed that the traditional, face-to-face tasks led to a more significant reduction of the anxiety levels of the participants than the ones interacting with chatbots.

5.3. Practical Recommendations

Based on the results of the current study, several practical recommendations can be suggested. Primarily, EFL teachers should be aware of the potentially positive impacts and limitations of the AI-based chatbots in EFL contexts. Considering the

positive impacts of the chatbot, teachers can use this platform outside the classroom as a supplementary tool for enhancing speaking skills. Despite the use of chatbots may not have an impact more significant than traditional speaking activities in the classroom, as the findings of the study revealed, it is essential to emphasize that effective speaking practices outside of the classroom help learners lower their anxiety levels. At this point, teachers should also be cautious about the limitations of the chatbot used in the study and they should take some actions to handle it. First, teachers can alleviate the “novelty” effect of the chatbot by prolonging the duration of the implementation. The more they get familiar with the chatbot, the less apprehensive they may feel; therefore, it is recommended that teachers use it for more than the time allocated for it in the study. Prolonging the orientation process prior to the study can also be helpful. This can make the learners feel ready for the study and readiness plays a key role in the affective states of the learners. Second, teachers should search for other chatbot alternatives as well and make comparisons; thereafter introduce them to the students. Teachers should act as leaders to determine the most effective way to use chatbots to support learning outcomes. The institutions should cooperate with the teachers to create new environments for students to practice English outside the classroom. In this sense, they should arrange seminars and workshops for teachers on the integration of AI and AI-based chatbots into the language learning process which will enable them to keep up with the latest technological developments in EFL teaching. In these seminars and workshops, teachers can share and discuss their ideas and construct the information shared there. The limitations of the implementations can even be discussed and the suggestions proposed by teachers may even help the teachers carry out the process in a more effective way. This will enhance collaboration among teachers and better outcomes in EFL teaching can only be achieved with mutual

sharing. On the other hand, as the findings suggested, traditional speaking activities with peers in the classroom bring about favorable outcomes. In this sense, teachers should integrate these activities into the classroom as much as they can and help learners manage their speaking anxiety. Teachers should motivate the learners to communicate in the target language and give constructive feedback to the students showing their appreciation for their efforts. However, teachers should avoid giving too much feedback on students' linguistic mistakes as this may demotivate and increase the anxiety levels of the students, as the results of the interviews with the focus group suggested. Not only the teachers but also the syllabus designers play a significant role in shaping the instructional designs of the classes. It could be better if syllabus designers integrate a lot of speaking activities that can make students engage in pair and group works into the curriculum especially when the course material does not include any speaking activities. By providing these speaking activities to the students in the classroom, they will promote collaboration and enhance communication and language skills. Most importantly, they will cause students to have a low affective filter in speaking skills. All in all, all the recommendations mentioned above aim at increasing the number of confident EFL learners in speaking skills.

5.4. Limitations

Several limitations should be acknowledged in this study. First, this study includes only a total of 44 university students studying at the preparatory classes of the foreign language department at a state university in Kocaeli. It comprises 22 students in the experimental group and 22 students in the control group. Therefore, it would not be right to make generalizations in terms of place, time, participants, and process. Second, the duration for the implementation is restricted to six weeks. A longer period of implementation can bring about different results. Third, the study pursues a quasi-

experimental research design as it was impossible to pick students randomly owing to school regulations. For this reason, a true experiment could not be conducted. Fourth, it is only limited to students at B1 level of language proficiency so the research does not provide any information about learners at different language levels. Fifth, the study only offers insights about the role of AI-based chatbots in reducing speaking anxiety. It does not suggest any ideas about its role in learners' speaking abilities. Finally, only one type of AI-based chatbot is utilized in the study and it restricts the perspectives to be developed on the topic. Consequently, the study bears some limitations and researchers should take all these into consideration while tackling this topic in their study.

5.5. Recommendations for Further Research

Based on the findings of the study, several recommendations can be made for further research. First, the use of AI and AI-based chatbots in EFL teaching context has not been widespread and we do not have enough evidence of whether AI-based chatbots are useful for EFL learners. Therefore, more studies should be conducted in order to establish the impact of AI-based chatbots on language learning and also on the reduction of speaking anxiety levels. Second, to increase the reliability, the diversity of the study should be diverted to a greater number of participants from different universities and different language proficiency levels. Another thing that should be done to increase both the validity and reliability of the study is to prolong the duration of the implementation. Considering that it takes some time for learners to get accustomed to the AI-based implementation, learners should engage in it as long as they can since this will have a crucial impact on their affective filters. On the researcher's side, this will allow him to monitor the long-term effects, providing him with a more comprehensive perception of the topic. The results obtained across a long

period of time will create consistency in itself. Third, the effects of AI-based chatbots on different domains of affective filters can be sought in further research. This will add a variety to the variables, giving us a broader vision of the impacts of AI-based chatbots. Fourth, equivalent chatbots can be examined and compared in terms of their effectiveness in reducing the levels of speaking anxiety of learners. Finally, very few studies focused on teachers' perceptions of the use of chatbots. Further research could uncover their thoughts about chatbots after the implementations. Different teachers from different universities can be selected to gather the data. Exploring the chatbots through teachers' eyes can be very facilitative in building a mindset on the issue.

REFERENCES

- Austin, J. L. (1989). *How to do things with words* (J. O. Urmson & M. Sbisà, Eds.). Oxford University Press.
- Ataş, M. (2014). *The reduction of speaking anxiety in EFL learners through drama techniques*. Çağ University.
- Ay, S. (2010). Young adolescent students' foreign language anxiety in relation to language skills at different levels. *The Journal of International Social Research*, 3(11), 83–92.
- Aydın, B. (2001). *A study of sources of foreign language classroom anxiety in speaking and writing classes* [Unpublished doctoral dissertation]. Anadolu University.
- Aydın, S., Harputlu, L., Güzel, S., & Genç, D. (2016). A Turkish version of Foreign Language Anxiety Scale: Reliability and validity. *Procedia-Social and Behavioral Sciences*, 232, 250–256.
- Ayedoun, E., Hayashi, Y., & Seta, K. (2019). Adding communicative and affective strategies to an embodied conversational agent to enhance second language learners' willingness to communicate. *International Journal of Artificial Intelligence in Education*, 29(1), 29–57. <https://doi.org/10.1007/s40593-018-0171-6>
- Bachman, L. F., & Palmer, A. S. (1996). *Language testing in practice: Designing and developing useful language tests* (Vol. 1). Oxford University Press.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191–215.

- Bansal, H., & Khan, R. (2018). A review paper on human computer interaction. *International Journal of Advanced Research in Computer Science and Software Engineering*, 8(4), 53. <https://doi.org/10.23956/ijarcsse.v8i4.630>
- Bao, M. (2019). Can home use of speech-enabled artificial intelligence mitigate foreign language anxiety – Investigation of a concept. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3431734>
- Bashori, M., Van Hout, R., Strik, H., & Cucchiarini, C. (2021). Effects of ASR-based websites on EFL learners' vocabulary, speaking anxiety, and language enjoyment. *System*, 99. <https://doi.org/10.1016/j.system.2021.102496>
- Bashori, M., Van Hout, R., Strik, H., & Cucchiarini, C. (2022). Web-based language learning and speaking anxiety. *Computer Assisted Language Learning*, 35(5–6), 1058–1089. <https://doi.org/10.1080/09588221.2020.1770293>
- Batumlu, D. Z., & Erden, M. (2007). The relationship between foreign language anxiety and English achievement of Yıldız Technical University School of Foreign Languages preparatory students. *Journal of Theory and Practice in Education*, 3(1), 24–38.
- Belda-Medina, J., & Calvo-Ferrer, J. R. (2022). Preservice teachers' knowledge and attitudes toward digital-game-based language learning. *Education Sciences*, 12(3). <https://doi.org/10.3390/educsci12030182>
- Bibauw, S., François, T., & Desmet, P. (2019). Discussing with a computer to practice a foreign language: Research synthesis and conceptual framework of dialogue-based CALL. *Computer Assisted Language Learning*, 32(3), 1–51. <https://doi.org/10.1080/09588221.2018.1535508>
- Brennan, K. (2006). The managed teacher: Emotional labour, education, and technology. *Educational Insights*, 10(2), 55–65.

- Broadbent, D. (1993). The simulation of human intelligence. In D. E. Broadbent (Ed.), *Comparison with human experiments* (pp. 198–217). Blackwell Publishing.
- Brown, H. D. (1994). *Principles of language learning and teaching*. Prentice Hall Regents.
- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Rand McNally&Company.
- Campbell, C. M., & Ortiz, J. (1991). Language anxiety from theory and research to classroom implications. In E. K. Horwitz & D. J. Young (Eds.), 1991. Prentice Hall.
- Channey, A. L. (1998). *Teaching oral communication in grades K-8*. Allyn & Bacon.
- Chapelle, C., Grabe, W., & Berns, M. S. (1997). *Communicative language proficiency: Definition and Implications for TOEFL 2000*. Princeton, N.J.: Educational Testing Service Princeton.
- Chen, Y. (2022). Effects of technology-enhanced language learning on reducing EFL learners' public speaking anxiety. *Computer Assisted Language Learning*. <https://doi.org/10.1080/09588221.2022.2055083>
- Cheng, Y. S. (2004). A measure of second language writing anxiety: Scale development and preliminary validation. *Journal of Second Language Writing*, 13, 317–331.
- Cicek, L. (2014). *Language anxiety-causes and consequences* [Graduation Thesis]. University of Zagreb.
- Clark, D. M., & McManus, F. (2002). Information processing in social phobia. *Biological Psychiatry*, 51(1), 92–100. [https://doi.org/10.1016/S0006-3223\(01\)01296-3](https://doi.org/10.1016/S0006-3223(01)01296-3)

- Çakıroğlu, A. (2018). The language acquisition approaches and the development of literacy skills in children. *International Electronic Journal of Elementary Education*, 11(2), 201–206. <https://doi.org/10.26822/iejee.2019248600>
- Çakmak, F. (2022). Chatbot-human interaction and Its effects on EFL students' L2 speaking performance and anxiety. *Novitas-Royal Research on Youth and Language*, 16(2), 113–131.
- Dahiya, M. (2017). A tool of conversation: Chatbot. *International Journal of Computer Sciences and Engineering*, 5(5), 158–161.
- Daly, J. (1991). Understanding communication apprehension: An introduction for language educators. In E. K. Horwitz & D. J. Young (Eds.), *Language anxiety: From theory and research to classroom implications* (pp. 3–13). Prentice Hall.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of technology. *MIS Quarterly*, 13(3), 319–340.
- Davis, F. D. (1993). User acceptance of information technology: System characteristics, user perceptions and behavioral impacts. *International Journal of Man-Machine Studies*, 38(3), 475–487. <https://doi.org/10.1006/imms.1993.1022>
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Plenum Press.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- Dizon, G. (2017). Using intelligent personal assistants for second language learning: A case study of Alexa. *TESOL Journal*, 8(4), 811–830.

- Dörnyei, Z., & Csizér, K. (1998). Ten commandments for motivating language learners: Results of an empirical study. *Language Teaching Research*, 2(3), 203–229. <https://doi.org/10.1177/136216889800200303>
- Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2019). Artificial intelligence for decision making in the era of Big Data – evolution, challenges and research agenda. *International Journal of Information Management*, 48, 63–71. <https://doi.org/10.1016/j.ijinfomgt.2019.01.021>
- El Shazly, R. (2021). Effects of artificial intelligence on English speaking anxiety and speaking performance: A case study. *Expert Systems*, 38(3). <https://doi.org/10.1111/exsy.12667>
- Eliopoulos, G. M., Harris, A. D., Bradham, D. D., Baumgarten, M., Zuckerman, I. H., Fink, J. C., & Perencevich, E. N. (2004). The use and interpretation of quasi-experimental studies in infectious diseases. *Clinical Infectious Diseases*, 38(11).
- Ellis, R. (2012). *Second language acquisition*. Oxford University Press.
- Er, G. (2001). The input hypothesis and second language acquisition theory. *Ondokuz Mayıs University Journal of Education Faculty*, 13(1), 25–36.
- Eysenck, M. W., Derakshan, N., Santos, R., & Calvo, M. G. (2007). Anxiety and cognitive performance: Attentional control theory. *Emotion*, 7(2), 336–353. <https://doi.org/10.1037/1528-3542.7.2.336>
- Farabi, M., Hassanvand, S., & Gorjian, B. (2017). Using guided oral presentation in teaching English language learners' speaking skills. *Journal of Applied Linguistics and Language Learning*, 2017(1), 17–24. <https://doi.org/10.5923/j.jalll.20170301.03>

- Fleege, P. O., Charlesworth, R., Burts, D. C., & Hart, C. H. (1992). Stress begins in kindergarten: A look at behavior during standardized testing. *Journal of Research in Childhood Education*, 7, 20–26.
- Fraenkel J., Wallen, N. & Hyun, H. (2012). How to design and evaluate research in education. Mc Graw-Hill.
- Fryer, L., & Carpenter, R. (2006). Bots as language learning tools. *Language Learning & Technology*, 10(3), 8–14.
- Fryer, L. K., Nakao, K., & Thompson, A. (2019). Chatbot learning partners: Connecting learning experiences, interest and competence. *Computers in Human Behavior*, 93, 279–289. <https://doi.org/10.1016/j.chb.2018.12.023>
- Fryer, L. K., Thompson, A., Nakao, K., Howarth, M., & Gallacher, A. (2020). Supporting self-efficacy beliefs and interest as educational inputs and outcomes: Framing AI and Human partnered task experiences. *Learning and Individual Differences*, 80, 101850. <https://doi.org/10.1016/j.lindif.2020.101850>
- Gass, S., & Varonis, E. (1994). Input, interaction and second language production. *Studies in Second Language Acquisition*, 16(3), 283–302.
- Gaudry, E., & C. D. Spielberger. (1971). *Anxiety and Educational Achievement*. John Wiley.
- Goldberg, L. R. (1993). The structure of phenotypic personality traits. *American Psychologist*, 48(1), 26–34. <https://doi.org/10.1037/0003-066X.48.1.26>
- Grant, A. M., & Wall, T. D. (2009). The neglected science and art of quasi-experimentation: Why-to, when-to, and how-to advice for organizational researchers. *Organizational Research Methods*, 12(4), 653–686.
- Gregersen, T. S. (2003). To err is human: A reminder to teachers of language- anxious students. *Foreign Language Annals*, 36(1), 25–32.

- Gusti, M. A. (2021). The 3rd Bogor English Student and Teacher (BEST) Conference. *An Investigation of Students' Anxiety in Speaking Classroom*.
- Güzel, S., & Aydin, S. (2014). A review of research on the effects of Second Life on speaking anxiety. *18(3)*, 233–242.
<https://www.researchgate.net/publication/271075334>
- Haenlein, M., Kaplan, A., Tan, C., & Zhang, P. (2019). Artificial intelligence (AI) and management analytics. *Journal of Management Analytics*, 6(4), 341–343.
<https://doi.org/10.1080/23270012.2019.1699876>
- Hamzaoglu, H., & Koçoğlu, Z. (2016). The application of podcasting as an instructional tool to improve Turkish EFL learners' speaking anxiety. *Educational Media International*, 53(4), 313–326.
<https://doi.org/10.1080/09523987.2016.1254889>
- Han, D. E. (2020). The effects of voice-based AI chatbots on Korean EFL middle school students' speaking competence and affective domains. *Asia-Pacific Journal of Convergent Research Interchange*, 6, 71–80.
- Hanna, P. (2022). Effects of virtual reality-based English learning on Korean University students' speaking Ability. *Multimedia-Assisted Language Learning*, 25(4), 93–119.
http://journal.kamall.or.kr/wp-content/uploads/2022/12/Park_25_4_04.pdf
- Haristiani, N. (2019). Artificial Intelligence (AI) chatbot as language learning medium: An inquiry. *Journal of Physics: Conference Series*, 1387(1), 012020.
<https://doi.org/10.1088/1742-6596/1387/1/012020>
- Harmer, J. (1991). *The Practice of English Language Teaching*. Longman.
- He, D. (2018). *Foreign language learning anxiety in China*. Springer Singapore.
<https://doi.org/10.1007/978-981-10-7662-6>

- Hidayati, S., Oktaviani, L., & Aminatun, D. (2023). EFL students' speaking anxiety: A case study at the first grade of SMA Al Huda Jati Agung. In *Journal of English Language Teaching and Learning (JELTL)* (Vol. 4, Issue 1). <http://jim.teknokrat.ac.id/index.php/english-language-teaching/index>
- Hilferty, A. (2000). The relationship between reading and speaking skills. *Focus on Basics*, 4(A).
- Hinkel, E. (2006). Current perspectives on teaching the four skills. *TESOL Quarterly*, 40(1), 109–131. <https://doi.org/10.2307/40264513>
- Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986a). Foreign language classroom anxiety. *The Modern Language Journal*, 70(2), 125–132.
- Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986b). Foreign language classroom anxiety . *The Model Language Journal*, 70(2), 125–132.
- Horwitz, E. K., & Young, D. J. (1991). *Language anxiety: From theory and research to classroom implications*. Prentice Hall.
- Hsu, M. H., Chen, P. S., & Yu, C. S. (2023). Proposing a task-oriented chatbot system for EFL learners speaking practice. *Interactive Learning Environments*, 31(7), 4297–4308. <https://doi.org/10.1080/10494820.2021.1960864>
- Hsu, M.-H., Chen, P.-S., & Yu, C.-S. (2021). Proposing a task-oriented chatbot system for EFL learners speaking practice. *Interactive Learning Environments*, 31(7), 1–12. <https://doi.org/10.1080/10494820.2021.1960864>
- Jeon, J. (2021). Chatbot-assisted dynamic assessment (CA-DA) for L2 vocabulary learning and diagnosis. *Computer Assisted Language Learning*, 36(7), 1338–1364. <https://doi.org/10.1080/09588221.2021.1987272>

- Kaptelinin, V. (1996). Activity theory: Implications for human-computer interaction. In B. Nardi (Ed.), *Context and consciousness: Activity theory and human-computer interaction* (pp. 103–116). MIT Press.
- Kaptelinin, V., & Nardi, B. (2018). Activity theory as a framework for human-technology interaction research. *Mind, Culture, and Activity*, 25(1), 3–5. <https://doi.org/10.1080/10749039.2017.1393089>
- Kaur, D. J., & Gill, N. S. (2019). *Artificial intelligence and deep learning for decisionmakers: A growth hacker's guide to cutting edge technologies*. BPB Publications.
- Kayaoğlu, M. N., & Sağlamel, H. (2013). Students' perceptions of language anxiety in speaking classes. *Journal of History Culture and Art Research*, 2(2). <https://doi.org/10.7596/taksad.v2i2.245>
- Kelly, L., & Keaten, J. A. (2000). Treating communication anxiety: Implications of the communibiological paradigm. *Communication Education*, 49(1), 45–57. <https://doi.org/10.1080/03634520009379192>
- Kılıç, N. (2014). *A case study on collaborative group activities to reduce EFL learners' foreign language speaking anxiety in a university context*. Çağ University.
- Kim, H.-S., Cha, Y., & Kim, N. Y. (2021). Effects of AI chatbots on EFL students' communication skills. *Korean Journal of English Language and Linguistics*, 21, 712–734.
- Kim, N. (2019). A study on the use of Artificial Intelligence chatbots for improving English grammar skills. *Journal of Digital Convergence*, 17, 37–46.
- Kim, N. Y., Cha, Y., & Kim, H. S. (2019). Future English learning: Chatbots and artificial intelligence. *Multimedia-Assisted Language Learning*, 22(3), 32–53.

- Kim, N.-Y. (2016). Effects of voice chat on EFL learners' speaking ability according to proficiency levels. *Multimedia-Assisted Language Learning*, 19(4), 63–88.
- Kitano, K. (2001). Anxiety in the college Japanese language classroom. *The Modern Language Journal*, 85(4), 549–566. <https://doi.org/10.1111/0026-7902.00125>
- Kok, J. N., Boers, E. J., Kosters, W. A., Van Der Putten, P., & Poel, M. (2009). Artificial intelligence: Definition, trends, techniques, and cases. *Artificial Intelligence*, 1, 270–299.
- Krashen, S. (1982). *Principles and practice in second language acquisition*. Pergamon Press Inc. .
- Krashen, S. D. (1985). *The input hypothesis: Issues and implications*. Longman.
- Krashen, S. D., & Terrell, T. D. (1983). *The Natural Approach. Language Acquisition in the Classroom*. Pergamon Press.
- Lee, S.-M. (2019). A systematic review of context-aware technology use in foreign language learning. *Computer Assisted Language Learning*, 35(3), 294–318. <https://doi.org/10.1080/09588221.2019.1688836>
- Lewis, C., & Carpendale, J. (2004). Social cognition. In P. K. Smith & C. H. Hart (Eds.), *Handbook of childhood social development* (pp. 375–393). MA: Blackwell.
- Liao, G. (2009). Improvement of Speaking Ability through Interrelated Skills. *English Language Teaching*, 2(3), 11.
- Littlewood, W. (1984). *Foreign and second language learning: Language acquisition research and its implications for the classroom*. Cambridge University Press.

- Liu, C.-C., Liao, M.-G., Chang, C.-H., & Lin, H.-M. (2022). An analysis of children's interaction with an AI chatbot and its impact on their interest in reading. *Computers & Education*, 189(C).
<https://doi.org/10.1016/j.compedu.2022.104576>
- Liu, M. (2007). Anxiety in oral English classrooms: A case study in China. *Indonesian JELT*, 3(1), 119–137.
- Liu, M. (2016). 7 Changes, causes and consequences of English speaking anxiety: A cohort study with Chinese University EFL learners. *The European Journal of Applied Linguistics and TEFL*, 5(2).
- Liu, M., & Jackson, J. (2008). An exploration of Chinese EFL learners' unwillingness to communicate and foreign language anxiety. *The Modern Language Journal*, 92(1), 71–86. <https://doi.org/10.1111/j.1540-4781.2008.00687.x>
- Luckin, R., & Holmes, W. (2016). *Intelligence unleashed: An argument for AI in education*. Pearson.
- MacIntyre, P. D. (1999). Language anxiety: A review of the research for language teachers. In D. J. Young (Ed.), *Affect in foreign language and second language learning: A practical guide to creating a low-anxiety classroom atmosphere* (pp. 24–45). McGraw-Hill.
- MacIntyre, P. D., & Charos, C. (1996). Personality, Attitudes, and Affect as Predictors of Second Language Communication. *Journal of Language and Social Psychology*, 15(1), 3–26. <https://doi.org/10.1177/0261927X960151001>
- MacIntyre, P. D., & Gardner, R. C. (1989). Anxiety and language learning: Towards a theoretical clarification. *Language Learning*, 39(2), 253.

- MacIntyre, P. D., & Gardner, R. C. (1991). Language anxiety: Its relationship to other anxieties and to processing in native and second languages. *Language Learning*, 41(4), 513–534.
- MacIntyre, P. D., & Gardner, R. C. (1994). The subtle effects of language anxiety on cognitive processing in the second language. *Language Learning*, 44(2), 283–305.
- Madzlan, N. A., Seng, G. H., & Kesevan, H. V. (2020). Use of video blogs in alleviating public speaking anxiety among ESL learners. *Journal of Education and E-Learning Research*, 7(1), 93–99. <https://doi.org/10.20448/journal.509.2020.71.93.99>
- Mathwick, C., Malhotra, N. K., & Rigdon, E. (2001). The effect of dynamic retail experiences on experiential perceptions of value: an internet and catalog comparison. *Journal of Retailing*, 78(1), 51–60. [https://doi.org/10.1016/S0022-4359\(01\)00066-5](https://doi.org/10.1016/S0022-4359(01)00066-5)
- McCroskey, I. C., & Richmond, V. P. (1987). Willingness to communicate. In J. C. McCroskey & J. A. Daly (Eds.), *Personality and interpersonal communication* (pp. 129–156). Sage.
- McIntyre, D. (2004). Point of view in drama: A socio-pragmatic analysis of Dennis Potter's *Brimstone and Treacle*. *Language and Literature: International Journal of Stylistics*, 13(2), 139–160. <https://doi.org/10.1177/0963947004041972>
- Mehrotra, A. (2019). Artificial intelligence in financial services – Need to blend automation with human touch. *2019 International Conference on Automation, Computational and Technology Management (ICACTM)*, 342–347. <https://doi.org/10.1109/ICACTM.2019.8776741>

- Meng, J., & Dai, Y. (2021). Emotional support from AI chatbots: Should a supportive partner self-disclose or not? *Journal of Computer-Mediated Communication*, 26(4), 207–222.
- Musthofa, T., & Rosyadi, F. I. (2020). Actualization of behavioral theory in learning Arabic speaking skills at the Madrasah Aliyah Level. *Universal Journal of Educational Research*, 8(12A), 7343–7349.
<https://doi.org/10.13189/ujer.2020.082518>
- Ng, E., & Lee, K. (2015). Effects of trait test anxiety and state anxiety on children's working memory task performance. *Learning and Individual Differences*, 40, 141–148. <https://doi.org/10.1016/j.lindif.2015.04.007>
- Nuridzdzati, R. Y., & Akhiriyah, S. (2023). Exploring students' speaking anxiety: A case of high achiever students. *Journal of English Language Teaching and Literature (JELITA)*, 4(2), 2721–1916.
- Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. Newbury House Publishers.
- Öztürk, G., & Gurbuz, N. (2014). Speaking anxiety among Turkish EFL learners: The case at a state university. *Journal of Language and Linguistic Studies*, 10(101), 1–17.
- Phillips, E. M. (1992). The effects of language anxiety on students' oral test performance and attitudes. *The Modern Language Journal*, 76(1), 14–26.
- Powell, T. J., & Enright, S. J. (2015). *Anxiety and stress management*. Routledge.
- Prichard, J. S., & Bizo, L. A. (2000). *The Think-Aloud Strategy: A practical guide to modelling cognitive processes*. Psychology Press.

- Punar, N., & Uzun, L. (2019). The effect of the Skype TM conference call on English speaking anxiety. *International Online Journal of Education and Teaching (IOJET)*, 6(2), 393–403. <http://iojet.org/index.php/IOJET/article/view/559>
- Rahimi, M., & Fathi, J. (2022). Employing e-tandem language learning method to enhance speaking skills and willingness to communicate: The case of EFL learners. *Computer Assisted Language Learning*. <https://doi.org/https://doi.org/10.1080/09588221.2022.2064512>
- Rajitha, K., & Alamelu, C. (2020). A study of factors affecting and causing speaking anxiety. *Procedia Computer Science*, 172, 1053–1058. <https://doi.org/10.1016/j.procs.2020.05.154>
- Rapee, R. M., & Spence, S. H. (2004). The etiology of social phobia: Empirical evidence and an initial model. *Clinical Psychology Review*, 24(7), 737–767. <https://doi.org/10.1016/j.cpr.2004.06.004>
- Regina, S. (1997). *English Language Arts: A curriculum guide for the middle level (Grades 6-9)*. Saskatchewan Education.
- Rianti, R., Syahid, A., & Qamariah, Z. (2022). The effectiveness of pair work activities on students' speaking anxiety and speaking ability. *Jurnal Educatio FKIP UNMA*, 8(4), 1471–1477. <https://doi.org/10.31949/educatio.v8i4.3760>
- Richards, J. C., & Rodgers, T. S. (2014). *Approaches and methods in language teaching* (3rd ed.). Cambridge University Press.
- Scovel, T. (1978). The effect of affect on foreign language learning: A review of the anxiety research. *Language Learning*, 28(1), 129–142.
- Scovel, T. (1991). Language anxiety: From theory and research to classroom implications. In E. K. Horwitz & D. J. Young (Eds.), *The effect of affect on*

foreign language learning: A review of the anxiety research (pp. 15–23). Prentice Hall.

Smutny, P., & Schreiberova, P. (2020). Chatbots for learning: A review of educational chatbots for the Facebook Messenger. *Computers and Education*, 151, 103862. <https://doi.org/10.1016/j.compedu.2020.103862>

Spielberger, C. D. (1976). The nature and measurement of anxiety. In C. D. Spielberger & R. Diaz- Guerrero (Eds.), *Cross-cultural anxiety* (pp. 3–12). Hemisphere Publishing Corporation.

Spielberger, C. D. (1996). *State-trait anger expression inventory: Professional manual*. . Psychological Assessment Resources, Inc.

Spielberger, C. D., Gorsuch, R., Lushene, R. E., Vagg, P., & Jacobs, G. A. (1983). *Manual for the state-trait anxiety inventory (Form Y1 – Y2)* (C. D. Spielberger, R. Gorsuch, R. E. Lushene, P. Vagg, & G. A. Jacobs, Eds.). Consulting Psychologists Press.

Suwantarathip, O., & Wichadee, S. (2010). The impacts of cooperative learning on anxiety and proficiency in an EFL class. *Journal of College Teaching & Learning (TLC)*, 7(11). <https://doi.org/10.19030/tlc.v7i11.252>

Swain, M. (1985). Communicative competence: Some roles of comprehensible input and comprehensible output in its development. In S. Gass & C. Madden (Eds.), *Input in second language acquisition* (pp. 235–253). Newbury House.

Tabatabaei, O., Afzali, M., & Mehrabi, M. (2015). The effect of collaborative work on improving speaking ability and decreasing stress of Iranian EFL learners. *Mediterranean Journal of Social Sciences*. <https://doi.org/10.5901/mjss.2015.v6n4s1p274>

- Takkaç Tulgar, A. (2018). Speaking anxiety of foreign learners of Turkish in target context. *International Online Journal of Education and Teaching (IOJET)*, 5(2), 313–332.
- Teimouri, Y., Goetze, J., & Plonsky, L. (2019). Second language anxiety and achievement. *Studies in Second Language Acquisition*, 41(2), 363–387. <https://doi.org/10.1017/S0272263118000311>
- Thornbury, S. (2005). *How to teach speaking*. Pearson.
- Tien, C. (2018). English speaking anxiety in EFL university classrooms in Taiwan. *European Journal of English Studies*, 4(2), 21–34.
- Tobias, S. (1986). Anxiety and cognitive processing of instruction. In R. Schwarzer (Ed.), *Self-related cognition in anxiety and motivation* (pp. 35–54). Erlbaum.
- Topping, K. J., & Ehly, S. (1998). *Peer-assisted learning* (K. J. Topping & S. Ehly, Eds.). Routledge.
- Toubot, A. M., Seng, G. H., & Abdullah, A. B. A. (2017). Overview of speaking anxiety among EFL students. *Medwell Journals*, 12(11), 1938–1947.
- Tuan, N. H., & Mai, T. N. (2015). Factors affecting students' speaking performance at Le Thanh Hien High School. *Asian Journal of Educational Research*, 3, 8–23.
- Tuyet, T. T. B., & Khang, N. D. (2020). The influences of the Flipgrid App on Vietnamese EFL High School learners' speaking anxiety. *European Journal of Foreign Language Teaching*, 5(1). <https://doi.org/10.46827/ejfl.v5i1.3264>
- Unsworth, N., Brewer, G. A., & Spillers, G. J. (2013). Working memory capacity and retrieval from long-term memory: The role of controlled search. *Memory & Cognition*, 41(2), 242–254. <https://doi.org/10.3758/s13421-012-0261-x>
- Ur, P. (1996). *A course in language teaching, practice and theory*. Cambridge University Press.

- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Wang, N. (1998). *Beliefs about language learning and foreign language anxiety: A study of university students learning English as a foreign language in Mainland China*. [Unpublished master's thesis]. University of Victoria.
- Watson, D., & Friend, R. (1969). Measurement of social-evaluative anxiety. *Journal of Consulting and Clinical Psychology*, 33(4), 448–457.
<https://doi.org/10.1037/h0027806>
- Waycott, J., Scheepers, R., Davis, H., Howard, S., & Sonenberg, L. (2014). The individual in multiple interacting activity systems: IT-supported diabetes management. *Information Technology & People*, 27(4), 463–481.
<https://doi.org/10.1108/ITP-11-2013-0195>
- Wertsch, J. V. (1998). *Mind as action*. Oxford University Press.
- Whitby, B. (2009). *Artificial Intelligence*. The Rosen Publishing Group.
- Wilson, J. T. S. (2006). *Anxiety in learning English as a foreign language: Its associations with student variables, with overall proficiency, and with performance on an oral test* [Thesis Doctoral]. Editorial de la Universidad de Granada.
- Wörde, V. R. (2003). Students' perspectives on foreign language anxiety. *Inquiry*, 8(1), 27–44.
- Wren, D. G., & Benson, J. (2004). Measuring test anxiety in children: Scale development and internal construct validation. *Anxiety, Stress, and Coping*, 17(3), 227–240.
- Ya, L. I. U. (2010). A study of language teaching from a sociolinguistic perspective of communicative competence. *Canadian Social Science*, 4(3), 80–86.

- Yamada, M., Goda, Y., Matsukawa, H., Hata, K., & Yasunami, S. (2016). A computer-supported collaborative learning design for quality interaction. *IEEE MultiMedia*, 23(1), 48–59. <https://doi.org/10.1109/MMUL.2015.95>
- Yan, J. X., & Horwitz, E. K. (2008). Learners' perceptions of how anxiety interacts with personal and instructional factors to influence their achievement in English: A qualitative analysis of EFL learners in China. *Language Learning*, 58(1), 151–183. <https://doi.org/10.1111/j.1467-9922.2007.00437.x>
- Yang, H., & Zapata-Rivera, D. (2010). Interlanguage pragmatics with a pedagogical agent: The request game. *Computer Assisted Language Learning*, 23(5), 395–412. <https://doi.org/10.1080/09588221.2010.520274>
- Young, D. J. (1992). Language anxiety from the foreign language specialist's perspective: Interviews with Krashen, Omaggio Hadley, Terrell, and Rardin. *Foreign Language Annals*, 25(2), 157–172.
- Young, D. J. (1994). Faces in a crowd: The individual learner in multisection courses. In C.A. Klee (Ed.), *New directions in language anxiety research* (pp. 3–46). Heinle & Hein.
- Young, D. J. (1998). *Affect in the foreign language and second language learning: A practical guide to creating a low-anxiety classroom atmosphere*. The McGraw-Hill.
- Zeidner, M. (2007). Test Anxiety in Educational Contexts. In *Emotion in Education* (pp. 165–184). Elsevier. <https://doi.org/10.1016/B978-012372545-5/50011-3>
- Zhang, R., & Zou, D. (2020). Types, purposes, and effectiveness of state-of-the-art technologies for second and foreign language learning. *Computer Assisted Language Learning*. *Computer Assisted Language Learning*, 35(4), 696–742. <https://doi.org/https://doi.org/10.1080/09588221.2020.1744666>

Zhanibek, A. (2001). *The relationship between language anxiety and students' participation in foreign language classes* [Unpublished master's thesis]. Bilkent University.

Appendix A

Background and Foreign Language Class Anxiety Scale

Değerli katılımcı,

“Yapay Zekâ Tabanlı Sohbet Robotlarının İngilizceyi Yabancı Dil Olarak Öğrenenlerdeki Konuşma Kaygısına Etkisi“ başlıklı çalışma, İstanbul Medeniyet Üniversitesi akademik personelinin gerçekleştirmekte olduğu bir araştırmadır. Bu araştırma yapay zekâ tabanlı sohbet robotlarının İngilizceyi yabancı dil olarak öğrenenlerdeki konuşma kaygısına etkisini ortaya çıkarmak amacıyla planlanmıştır. Ankete katılmak tamamen gönüllülük esasına dayanmaktadır. Araştırma raporunda anketlerle ilgili genel sonuçlar verilecek olup kişisel bilgileriniz tamamen gizli tutulacaktır. Ankete katılmayı kabul ettiğiniz için çok teşekkür ederim.

Meltem Ballıdağ

Kişisel Bilgiler

Yaşınız _____	Cinsiyetiniz	Kadın ()	Erkek ()
Bölümünüz _____			

Yabancı Dil Sınıfı Kaygı Ölçeği

		Hiç katılmıyorum	Katılmıyorum	Ne katılıyorum, ne de katılmıyorum	Katılıyorum	Tamamen
1	Yabancı dil derslerinde konuşurken kendimden asla emin olamıyorum	(1)	(2)	(3)	(4)	(5)
2	Yabancı dil derslerinde hata yapmak beni endişelendirmiyor.	(1)	(2)	(3)	(4)	(5)
3	Yabancı dil derslerinde bana söz verileceği zaman titriyorum	(1)	(2)	(3)	(4)	(5)
4	Öğretmenin yabancı dilde söylediklerini anlamamak beni korkutuyor.	(1)	(2)	(3)	(4)	(5)
9	Yabancı dil derslerinde hazırlıksız konuşmam gerektiğinde panik olmaya başlıyorum.	(1)	(2)	(3)	(4)	(5)
13	Yabancı dil derslerinde parmak kaldırmaya utanıyorum.	(1)	(2)	(3)	(4)	(5)
14	Yabancı dilimi ana dili olarak kullanan biriyle konuşurken gerilmezdim.	(1)	(2)	(3)	(4)	(5)
15	Öğretmenimin yaptığı düzeltmeyi anlamadığımda üzülüyorum.	(1)	(2)	(3)	(4)	(5)

18	Yabancı dil derslerinde konuşurken kendime güveniyorum.	(1)	(2)	(3)	(4)	(5)
19	Yabancı dil öğretmenim yaptığım her hatayı düzeltecek diye korkuyorum.	(1)	(2)	(3)	(4)	(5)
20	Yabancı dil derslerinde bana seslenildiği zaman kalbimin çarptığını hissedebiliyorum.	(1)	(2)	(3)	(4)	(5)
23	Diğer öğrencilerin yabancı dili benden daha iyi konuştuklarını her zaman hissediyorum.	(1)	(2)	(3)	(4)	(5)
24	Diğer öğrencilerin önünde yabancı dilde konuşurken çok sıkıldığımı hissediyorum.	(1)	(2)	(3)	(4)	(5)
27	Yabancı dil dersinde konuşurken sinirleniyorum ve kafam karışıyor.	(1)	(2)	(3)	(4)	(5)
29	Yabancı dil öğretmenimin söylediklerini kelimesi kelimesine anlayamayınca sinirleniyorum.	(1)	(2)	(3)	(4)	(5)
30	Yabancı dili konuşmak için öğrenmem gereken kuralların sayısı beni boğuyor.	(1)	(2)	(3)	(4)	(5)
31	Yabancı dilde konuşurken diğer öğrencilerin bana güleceklerinden korkuyorum.	(1)	(2)	(3)	(4)	(5)
33	Yabancı dil öğretmeni hazırlanmadığım yerlerden sorular sorduğunda sinirleniyorum.	(1)	(2)	(3)	(4)	(5)

Appendix B

The Ethics Committee Approval



T.C.
İSTANBUL MEDENİYET ÜNİVERSİTESİ REKTÖRLÜĞÜ
Rektörlük



Sayı : E-38510686-050.04-2400017257
Konu : Meltem Ballıdağ'ın Başvurusu

08.03.2024

İlgili Makama,

İMÜ Sosyal ve Beşeri Bilimler Etik Kurulu'nun 2024/2 sayılı ve 27.02.2024 tarihli kararıyla, İMÜ Lisansüstü Eğitim Enstitüsü (İngiliz Dili Eğitimi) yüksek lisans öğrencisi **Meltem Ballıdağ**'ın "Yapay Zeka Tabanlı Sohbet Robotlarının İngilizceyi Yabancı Dil Olarak Öğrenenlerdeki Konuşma Kaygısına Etkisi" başlıklı YL tezi kapsamında (dan. Prof. Dr. Selami Aydın) veri toplanmasına yönelik araştırma dosyası görüşülmüş, içerik bakımından etik bir sorun bulunmadığı sonucuna varılarak izin talebi uygun bulunmuştur.

Prof. Dr. Tuncay BAŞOĞLU
Kurul Başkanı

Appendix C
The Wilcoxon Test for the Control Group

		N	Mean Rank	Sum of Ranks	Asymp. Sig. (2-tailed)
1. Yabancı dil derslerinde konuşurken kendimden asla emin olamıyorum.	Negative Ranks	6	4.67	28.00	.13
	Positive Ranks	2	4.00	8.00	
	Ties	14			
	Total	22			
2. Yabancı dil derslerinde hata yapmak beni endişelendirmiyor.	Negative Ranks	5	3.90	19.50	.83
	Positive Ranks	3	5.50	16.50	
	Ties	14			
	Total	22			
3. Yabancı dil derslerinde bana söz verileceği zaman titriyorum.	Negative Ranks	5	4.20	21.00	.21
	Positive Ranks	2	3.50	7.00	
	Ties	15			
	Total	22			
4. Öğretmenin yabancı dilde söylediklerini anlamamak beni korkutuyor.	Negative Ranks	10	6.30	63.00	.04
	Positive Ranks	2	7.50	15.00	
	Ties	10			
	Total	22			
9. Yabancı dil derslerinde hazırlıksız konuşmam gerektiğinde panik olmaya başlıyorum.	Negative Ranks	6	4.17	25.00	.31
	Positive Ranks	2	5.50	11.00	
	Ties	14			
	Total	22			
13. Yabancı dil derslerinde parmak kaldırmaya utanıyorum.	Negative Ranks	5	5.40	27.00	.56
	Positive Ranks	4	4.50	18.00	
	Ties	13			
	Total	22			
14. Yabancı dilimi ana dili olarak kullanan biriyle konuşurken gerilmezdim.	Negative Ranks	7	6.86	48.00	.16
	Positive Ranks	4	4.50	18.00	
	Ties	11			
	Total	22			
15. Öğretmenimin yaptığı düzeltmeyi anlamadığımda üzülüyorum.	Negative Ranks	6	5.33	32.00	.64
	Positive Ranks	4	5.75	23.00	
	Ties	12			
	Total	22			
18. Yabancı dil derslerinde konuşurken kendime güveniyorum.	Negative Ranks	5	4.00	20.00	.26
	Positive Ranks	2	4.00	8.00	
	Ties	15			
	Total	22			

19. Yabancı dil öğretmenim yaptığım her hatayı düzeltecek diye korkuyorum.	Negative Ranks	8	5.50	44.00	.29
	Positive Ranks	3	7.33	22.00	
	Ties	11			
	Total	22			
20. Yabancı dil derslerinde bana seslenildiği zaman kalbimin çarptığını hissedebiliyorum.	Negative Ranks	5	5.10	25.50	.71
	Positive Ranks	4	4.88	19.50	
	Ties	13			
	Total	22			
23. Diğer öğrencilerin yabancı dili benden daha iyi konuştuklarını her zaman hissediyorum.	Negative Ranks	5	4.50	22.50	.59
	Positive Ranks	5	6.50	32.50	
	Ties	12			
	Total	22			
24. Diğer öğrencilerin önünde yabancı dilde konuşurken çok sıkıldığımı hissediyorum.	Negative Ranks	6	7.33	44.00	.57
	Positive Ranks	8	7.63	61.00	
	Ties	8			
	Total	22			
27. Yabancı dil dersinde konuşurken sinirleniyorum ve kafam karışıyor.	Negative Ranks	7	4.71	33.00	.20
	Positive Ranks	2	6.00	12.00	
	Ties	13			
	Total	22			
29. Yabancı dil öğretmenimin söylediklerini kelimesi kelimesine anlayamayınca sinirleniyorum.	Negative Ranks	10	8.50	85.00	.14
	Positive Ranks	5	7.00	35.00	
	Ties	7			
	Total	22			
30. Yabancı dili konuşmak için öğrenmem gereken kuralların sayısı beni boğuyor.	Negative Ranks	10	7.15	71.50	.50
	Positive Ranks	5	9.70	48.50	
	Ties	7			
	Total	22			
31. Yabancı dilde konuşurken diğer öğrencilerin bana güleceklerinden korkuyorum.	Negative Ranks	7	4.00	28.00	.14
	Positive Ranks	1	8.00	8.00	
	Ties	14			
	Total	22			
33. Yabancı dil öğretmeni hazırlanmadığım yerlerden sorular sorduğunda sinirleniyorum.	Negative Ranks	8	6.94	55.50	.85
	Positive Ranks	6	8.25	49.50	
	Ties	8			
	Total	22			

Appendix D

The Wilcoxon Test for the Experimental Group

		N	Mean Rank	Sum of Ranks	Asymp. Sig. (2-tailed)
1. Yabancı dil derslerinde konuşurken kendimden asla emin olamıyorum.	Negative Ranks	8	4.50	36.00	.01
	Positive Ranks	0	.00	.00	
	Ties	14			
	Total	22			
2. Yabancı dil derslerinde hata yapmak beni endişelendirmiyor.	Negative Ranks	6	6.67	40.00	.58
	Positive Ranks	5	5.20	26.00	
	Ties	11			
	Total	22			
3. Yabancı dil derslerinde bana söz verileceği zaman titriyorum.	Negative Ranks	6	6.58	39.50	.23
	Positive Ranks	9	8.94	80.50	
	Ties	7			
	Total	22			
4. Öğretmenin yabancı dilde söylediklerini anlamamak beni korkutuyor.	Negative Ranks	8	8.00	64.00	.81
	Positive Ranks	7	8.00	56.00	
	Ties	7			
	Total	22			
9. Yabancı dil derslerinde hazırlıksız konuşmam gerektiğinde panik olmaya başlıyorum.	Negative Ranks	7	7.57	53.00	.25
	Positive Ranks	5	5.00	25.00	
	Ties	10			
	Total	22			
13. Yabancı dil derslerinde parmak kaldırmaya utaniyorum.	Negative Ranks	7	7.64	53.50	.44
	Positive Ranks	9	9.17	82.50	
	Ties	6			
	Total	22			
14. Yabancı dilimi ana dili olarak kullanan biriyle konuşurken gerilmezdim.	Negative Ranks	7s	8.14	57.00	.86
	Positive Ranks	8	7.88	63.00	
	Ties	7			
	Total	22			
15. Öğretmenimin yaptığı düzeltmeyi anlamadığımda üzülüyorum.	Negative Ranks	9	7.61	68.50	.29
	Positive Ranks	5	7.30	36.50	
	Ties	8			
	Total	22			
18. Yabancı dil derslerinde konuşurken kendime güveniyorum.	Negative Ranks	9	8.39	75.50	.69
	Positive Ranks	7	8.64	60.50	
	Ties	6			
	Total	22			
19. Yabancı dil öğretmenim yaptığım her hatayı düzeltecek diye korkuyorum.	Negative Ranks	5	6.10	30.50	.82
	Positive Ranks	6	5.92	35.50	
	Ties	11			
	Total	22			
20. Yabancı dil derslerinde bana seslenildiği zaman kalbimin çarptığını hissedebiliyorum.	Negative Ranks	6	6.33	38.00	.27
	Positive Ranks	4	4.25	17.00	
	Ties	12			
	Total	22			

23. Diğer öğrencilerin yabancı dili benden daha iyi konuştuklarını her zaman hissediyorum.	Negative Ranks	5	6.50	32.50	.56
	Positive Ranks	7	6.50	45.50	
	Ties	10			
	Total	22			
24. Diğer öğrencilerin önünde yabancı dilde konuşurken çok sıkıldığımı hissediyorum.	Negative Ranks	6	8.67	52.00	.64
	Positive Ranks	7	5.57	39.00	
	Ties	9			
	Total	22			
27. Yabancı dil dersinde konuşurken sinirleniyorum ve kafam karışıyor.	Negative Ranks	6	7.17	43.00	.86
	Positive Ranks	7	6.86	48.00	
	Ties	9			
	Total	22			
29. Yabancı dil öğretmenimin söylediklerini kelimesi kelimesine anlayamayınca sinirleniyorum.	Negative Ranks	6	7.08	42.50	.51
	Positive Ranks	8	7.81	62.50	
	Ties	8			
	Total	22			
30. Yabancı dili konuşmak için öğrenmem gereken kuralların sayısı beni boğuyor.	Negative Ranks	6	4.92	29.50	.44
	Positive Ranks	6	8.08	48.50	
	Ties	10			
	Total	22			
31. Yabancı dilde konuşurken diğer öğrencilerin bana güleceklerinden korkuyorum.	Negative Ranks	5	8.40	42.00	.50
	Positive Ranks	9	7.00	63.00	
	Ties	8			
	Total	22			
33. Yabancı dil öğretmeni hazırlanmadığım yerlerden sorular sorduğunda sinirleniyorum.	Negative Ranks	5	4.90	24.50	.75
	Positive Ranks	5	6.10	30.50	
	Ties	12			
	Total	22			

Appendix E

Mann Whitney U Test for the Pre-tests

	Group	N	Mean Rank	Sum of Ranks	Asymp. Sig. (2-tailed)
1. Yabancı dil derslerinde konuşurken kendimden asla emin olamıyorum.	Experimental	22	27.34	601.50	.01
	Control	22	17.66	388.50	
	Total	44			
2. Yabancı dil derslerinde hata yapmak beni endişelendirmiyor.	Experimental	22	25.52	561.50	.10
	Control	22	19.48	428.50	
	Total	44			
3. Yabancı dil derslerinde bana söz verileceği zaman titriyorum.	Experimental	22	23.14	509.00	.73
	Control	22	21.86	481.00	
	Total	44			
4. Öğretmenin yabancı dilde söylediklerini anlamamak beni korkutuyor.	Experimental	22	22.89	503.50	.84
	Control	22	22.11	486.50	
	Total	44			
9. Yabancı dil derslerinde hazırlıksız konuşmam gerektiğinde panik olmaya başlıyorum.	Experimental	22	24.98	549.50	.19
	Control	22	20.02	440.50	
	Total	44			
13. Yabancı dil derslerinde parmak kaldırmaya utanıyorum.	Experimental	22	20.43	449.50	.27
	Control	22	24.57	540.50	
	Total	44			
14. Yabancı dilimi ana dili olarak kullanan biriyle konuşurken gerilmezdim.	Experimental	23	23,77	523,00	.50
	Control	22	21,23	467,00	
	Total	44			
15. Öğretmenimin yaptığı düzeltmeyi anlamadığımda üzülüyorum.	Experimental	22	23.41	515.00	.63
	Control	22	21.59	475.00	
	Total	44			
18. Yabancı dil derslerinde konuşurken kendime güveniyorum.	Experimental	22	25.11	552.50	.16
	Control	22	19.89	437.50	
	Total	44			
19. Yabancı dil öğretmenim yaptığım her hatayı düzeltecek diye korkuyorum.	Experimental	22	23.75	522.50	.47
	Control	22	21.25	467.50	
	Total	44			
20. Yabancı dil derslerinde bana seslenildiği zaman kalbimin çarptığını hissedebiliyorum.	Experimental	22	23.70	521.50	.51
	Control	22	21.30	468.50	
	Total	44			

23. Diğer öğrencilerin yabancı dili benden daha iyi konuştuklarını her zaman hissediyorum.	Experimental	22	26.39	580.50	.03
	Control	22	18.61	409.50	
	Total	44			
24. Diğer öğrencilerin önünde yabancı dilde konuşurken çok sıkıldığımı hissediyorum.	Experimental	22	25.82	568.00	.06
	Control	22	19.18	422.00	
	Total	44			
27. Yabancı dil dersinde konuşurken sinirleniyorum ve kafam karışıyor.	Experimental	22	23.02	506.50	.78
	Control	22	21.98	483.50	
	Total	44			
29. Yabancı dil öğretmenimin söylediklerini kelimesi kelimesine anlayamayınca sinirleniyorum.	Experimental	22	22.16	487.50	.85
	Control	22	22.84	502.50	
	Total	44			
30. Yabancı dili konuşmak için öğrenmem gereken kuralların sayısı beni boğuyor.	Experimental	22	20.50	451.00	.29
	Control	22	24.50	539.00	
	Total	44			
31. Yabancı dilde konuşurken diğer öğrencilerin bana güleceklerinden korkuyorum.	Experimental	22	22.45	494.00	.98
	Control	22	22.55	496.00	
	Total	44			
33. Yabancı dil öğretmeni hazırlanmadığım yerlerden sorular sorduğunda sinirleniyorum.	Experimental	22	20.32	447.00	.22
	Control	22	24.68	543.00	
	Total	44			

Appendix F
Mann Whitney U test for the Post-tests

	Experimental_Co ntrol	N	Mean Rank	Sum of Ranks	Asymp. Sig. (2- tailed)
1. Yabancı dil derslerinde konuşurken kendimden asla emin olamıyorum.	Experimental	22	26.41	581.00	.04
	Control	22	18.59	409.00	
	Total	44			
2. Yabancı dil derslerinde hata yapmak beni endişelendirmiyor.	Experimental	22	24.66	542.50	.25
	Control	22	20.34	447.50	
	Total	44			
3. Yabancı dil derslerinde bana söz verileceği zaman titriyorum.	Experimental	22	26.59	585.00	.03
	Control	22	18.41	405.00	
	Total	44			
4. Öğretmenin yabancı dilde söylediklerini anlamamak beni korkutuyor.	Experimental	22	25.50	561.00	.10
	Control	22	19.50	429.00	
	Total	44			
9. Yabancı dil derslerinde hazırlıksız konuşmam gerektiğinde panik olmaya başlıyorum.	Experimental	22	24.45	538.00	.29
	Control	22	20.55	452.00	
	Total	44			
13. Yabancı dil derslerinde parmak kaldırmaya utaniyorum.	Experimental	22	21.75	478.50	.68
	Control	22	23.25	511.50	
	Total	44			
14. Yabancı dilimi ana dili olarak kullanan biriyle konuşurken gerilmezdim.	Experimental	22	25.80	567.50	.07
	Control	22	19.20	422.50	
	Total	44			
15. Öğretmenimin yaptığı düzeltmeyi anlamadığımda üzülüyorum.	Experimental	22	22.45	494.00	.98
	Control	22	22.55	496.00	
	Total	44			
18. Yabancı dil derslerinde konuşurken kendime güveniyorum.	Experimental	22	24.30	534.50	.33
	Control	22	20.70	455.50	
	Total	44			
19. Yabancı dil öğretmenim yaptığım her hatayı düzeltecek diye korkuyorum.	Experimental	22	25.59	563.00	.08
	Control	22	19.41	427.00	
	Total	44			
20. Yabancı dil derslerinde bana seslenildiği zaman kalbimin çarptığını hissedebiliyorum.	Experimental	22	22.64	498.00	.94
	Control	22	22.36	492.00	
	Total	44			

23. Diğer öğrencilerin yabancı dili benden daha iyi konuştuklarını her zaman hissediyorum.	Experimental	22	26.25	577.50	.04
	Control	22	18.75	412.50	
	Total	44			
24. Diğer öğrencilerin önünde yabancı dilde konuşurken çok sıkıldığımı hissediyorum.	Experimental	22	24.95	549.00	.18
	Control	22	20.05	441.00	
	Total	44			
27. Yabancı dil dersinde konuşurken sinirleniyorum ve kafam karışıyor.	Experimental	22	25.45	560.00	.10
	Control	22	19.55	430.00	
	Total	44			
29. Yabancı dil öğretmenimin söylediklerini kelimesi kelimesine anlayamayınca sinirleniyorum.	Experimental	22	25.57	562.50	.10
	Control	22	19.43	427.50	
	Total	44			
30. Yabancı dili konuşmak için öğrenmem gereken kuralların sayısı beni boğuyor.	Experimental	22	22.23	489.00	.88
	Control	22	22.77	501.00	
	Total	44			
31. Yabancı dilde konuşurken diğer öğrencilerin bana güleceklerinden korkuyorum.	Experimental	22	25.39	558.50	.10
	Control	22	19.61	431.50	
	Total	44			
33. Yabancı dil öğretmeni hazırlanmadığım yerlerden sorular sorduğunda sinirleniyorum.	Experimental	22	22.25	489.50	.89
	Control	22	22.75	500.50	
	Total	44			

Özgeçmiş

KİŞİSEL BİLGİLER

Adı Soyadı: Meltem Ballıdağ

Uyruğu: T.C.

EĞİTİM

Derece	Kurum	Mezuniyet Yılı
Lisans	Ankara Üniversitesi, Dil ve Tarih-Coğrafya Fakültesi, İngiliz Dili ve Edebiyatı Bölümü	2005
Yüksek Lisans	Hoca Ahmet Yesevi Uluslararası Türk-Kazak Üniversitesi Filoloji Fakültesi İngiliz Dili Eğitimi Bölümü	2016
Yüksek Lisans	İstanbul Medeniyet Üniversitesi, Lisansüstü Eğitim Enstitüsü, İngiliz Dili Eğitimi	Devam ediyor

İŞ TECRÜBESİ

Tarih	Kurum	Görev
2006- Halen	Gebze Teknik Üniversitesi, Yabancı Diller Bölümü	Öğretim Görevlisi

YABANCI DİLLER

İngilizce- İleri düzey

Almanca- Başlangıç seviyesi