A Comparative and Correlational Study of Face-to-Face and Face-to-Screen EFL Students' Speaking Anxiety with Reference to Complex Dynamic Systems Theory

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Abstract

The present study sought to examine if there was a difference in students' speaking skill (sub-skills) in the different learning environments of Face-to-Face versus Face-to-Screen based on foreign language anxiety levels in both environments. To investigate the interactions of the elements influencing students' anxiety, this study used the Complex Dynamic Systems Theory as a lens. The study participants were EFL seniors enrolled in the Faculty of Education at Damietta University. The participants were assigned to one group (N=30) in the academic year 2020/2021. Two scales were administered to the participants: the Online World Languages Anxiety Scale (OWLAS) face-to-screen (F2Screen) during the lockdown of COVID-19 and the Foreign Language Classroom Anxiety Scale (FLCAS) Face-to-Face(F2F) after the lockdown ended. Three hypotheses were formulated. Pearson correlation coefficient and *t-Test* and a were used for statistical analysis. Results revealed that there is a statistically significant difference in anxiety scores as measured by the Foreign Language Classroom Anxiety Scale between two types of learning environments; F2F setting and Face-to-Screen setting, in favour of the F2F setting. Results also indicated that there was no correlation between the participants' mean scores in the FLCAS and the total scores of the three sub-skills of speaking.Additionally, results indicates that there was no correlation between the participants' mean scores in the OWLAS and the total of the three sub-skills of speaking.

Key words: Complex Dynamic Systems Theory, World Languages Anxiety Scale (OWLAS), Foreign Language Classroom Anxiety Scale(FLCAS), English language speaking anxiety.

1. Introduction

Speaking is a form of communication that one might use to interact with others. However, in the EFL context, speaking does not always come naturally and smoothly; some students may experience some sort of anxiety, especially while attempting to speak a foreign language.

Generally speaking, Horwitz (2016) emphasizes that language learning is difficult, long-term, and high stakes for many learners. Oad and Khan (2020) argue that learning a foreign language presents certain challenges for language learners. Moreover, the development and output of foreign languages can be restricted and hampered by anxiety. Arguably, much research has been carried out to identify and examine the elements that affect speaking production in foreign language learning. Many challenges may affect speaking skills; among them is anxiety. Such challenges may be personal attributes. Hulstijn (2020) assumes that personal attributes may be associated with language acquisition in different ways. For example, in Oteir and Al-Otaibi (2019), anxiety has been ranked as a crucial challenge for language learners considering a growing concern devoted to foreign language learning. For them, foreign language anxiety has negative effects on foreign language learning.

Punar and Kurtuldu (2020) argue that language is the primary means of communication and is a complicated phenomenon. This is similar to how difficult it is to learn a language. This process can be greatly influenced by a variety of circumstances, including learner differences, and it may change as a result. In their study, Yan and Liang (2022), after modifying the FLCAS to measure FLA especially in interpretation classes, found obvious inverse connections between FLA and students' achievements, self-perceived interpretation competence, speaking, and listening abilities. These findings showed that FLA had negative effects on interpretation classes. More importantly, this study demonstrated that anxiety levels directly correlated with an increase in students' cognitive burden during class. The four elements "fear of public speaking," "difficulty in listening comprehension," "fear of unfavourable peer judgement," and "apprehension about connecting with native speakers"

were   found   to   have   an   impact   on   the   FLA construct.

2.Rational of the Study

Teaching English language to EFL university students during the COVID-19 outbreak, the researcher observed that students had anxiety while practising their English speaking skill using Face-to-Screen tools. Such anxiety is actually different from the anxiety that took place when practising the English language speaking skill Face-to-Face. Therefore, the researcher investigated the comparative correlation between both types of anxiety.

3.Context of the problem

Speaking is an important skill to have, especially in an EFL university setting.However, it has been noticed that EFL students experience anxiety while uttering and producing the target language. Foreign language teachers should be aware of the difficulties and barriers that their students may encounter. FLSA may be one of these obstacles and barriers.However, the reason may be the environment or the setting in which the student delivers his thoughts and answers. Nugroho, Miftakh & Wahyuna (2021) investigated the speaking anxiety factors of five students in a case study in an online EFL classroom. They concluded that there are many factors that affect EFL students' speaking. For them, in order to lessen the impact of poor teaching practises on students' speaking anxiety, they recommended that teachers should assess their own teaching methods. Additionally, Amouna (2021) asserted that speaking anxiety must be taken into account as a significant component in educational settings.He concluded that it is critical for educators to investigate the FLSA in the context of the classroom.In this regard, Teimouri, Goetze, and Plonsky (2019) argue that is crucial to suggest the direction of the correlation—negative or positive—in order to spark a clarification on the facilitating, incapacitating nature of anxiety. It is not just the direction but also   the   magnitude   of   this   relationship   that matters.

Based on the previous introduction, the problem is that hardly any studies in the Egyptian context focused their research on foreign language anxiety experienced both Face-to-Face and Face-to Screen regarding EFL university students. To the best of the researcher's knowledge, there have

been no studies that compared the two settings' effects on the speaking skills as a whole and the speaking sub-skills.

4.Pilot study

For further identification of the problem and feasibility of the research design, a preliminary pilot study was conducted. A pilot study was conducted on 28 EFL students in their third year who were not part of the intended group to ensure the feasibility of participant recruitment and study implementation.

Results of the pilot study in F2Screen speaking anxiety revealed the following: When asked to record themselves speaking in a foreign language, nearly 75% of the sample expressed anxiety. Nearly 78.5% of the sample had to write down their answers so they could feel confident in themselves before they could record themselves for class. 82% of the sample was anxious about making mistakes in the online foreign language class when they participated orally. About 71.4% felt confident in answering in written form rather than orally. In their online foreign language class, 71.4% were concerned about the consequences of failing, 33.3% were neutral, and 15.5% were not concerned.

As for speaking anxiety in a F2F environment, 56.2% agree that they trembled when they knew that they were going to be called on in language class. This finding is consistent with the findings of the Ztürk and Gürbüz (2014) study, which found that students perceive speaking ability as an anxiety-inducing factor. Their findings proved that students can experience increased anxiety when responding spontaneously to immediate questioning. About 59.4% could feel their hearts pounding when they are going to be called on in language class. In addition, 46.9% got nervous when they did not understand every word the language teacher said. Moreover, 56.3% were afraid that the other students would laugh at them when they spoke the foreign language. Nearly 81.3% got nervous when the language teacher asked questions that they had not prepared in advance. About 43.8% got nervous and confused when they were speaking in their language class. When language class moves so quickly, 59.4% of students are concerned about falling behind.

The results have many implications for higher levels of anxiety. Here are some examples of the OWLAS and FLCAS results.

For OWLAS, the statement "I have to write down my answers so I feel confident in them before I can record them for class," 71.4% agree, 7.1% strongly agree, and 21% neither agree nor disagree.
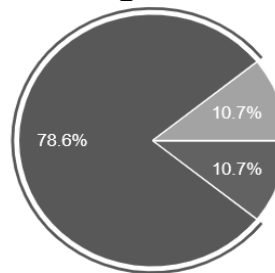
I have to write down my answers so I feel confident in them before I can record them for class.
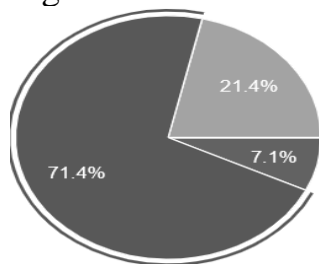
I ask for help from other students when I have questions.
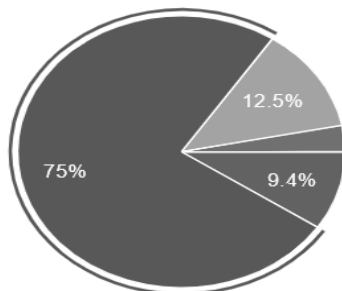
Figure 2

Figure 1

As for the statement, "I ask for help from other students when I have questions." 78.6% agree, 10.7% strongly agree, and 10.7% neither agree nor disagree.
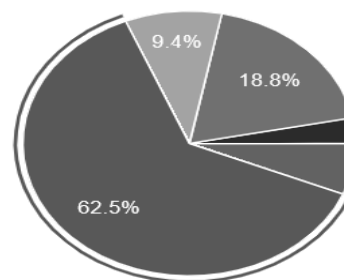
I get upset when I don't understand what the teacher is correcting

I am afraid that my language teacher is ready to correct every mistake I make

Figure 4

Figure 3

As for the FLCAS statement, "I get upset when I don't understand what the teacher is correcting," 75 percent agree, 9.4% strongly agree, and 12.5 percent neither agree nor disagree. Concerning the statement "I am afraid

that my language teacher is ready to correct every mistake I make," 62% agree, 18.8% strongly agree, and 9.4% neither agree nor disagree. Actually, these results proved the study to be feasible. Based on the previous results of the pilot study, the speaking anxiety among EFL university students needed to be investigated. Its design has proven to be feasible.

5. Aim of the study

The current study sought to:

Examine whether there was a difference in students' speaking skills (sub-skills) across learning environments: Face-to-Face versus Face-to-Screen based on foreign language anxiety levels in both environments.

6. Questions of the study

The present study attempted to answer the following questions:

- Is the difference between the students' mean scores of speaking sub-skills in the Face-to-Face versus Face-to-Screen settings and the total significant?
- Is the correlation between the scores of the research sample on the FLCAS dimensions and the total score for those dimensions significant?
- Is the correlation between the scores of the research sample on the OWLAS dimensions and the total score for dimensions significant?

7. Hypotheses of the study

- There is no statistically significant difference between the students' mean scores of speaking sub-skills in the face-to-face versus face-to-screen settings and the total.
- There is no significant correlation between the scores of the research sample on the FLCAS dimensions and the total score of the dimensions.
- There is no significant correlation between the scores of the research sample on the OWLAS dimensions and the total score of the dimensions.

8. Significance of the study

The research was supposed to be significant for the following reasons:

1. EFL university students can identify anxiety triggers in their learning and speaking processes.
2. EFL university students can implement non-threatening techniques to enhance their students' speaking skills.

9. Delimitations of the study

The research was delimited to:

1. A sample of (30) EFL senior university students, Faculty of Education.
2. Some speaking sub-skills such as fluency and coherence (cohesion and flow, pronunciation, and accent); paralinguistic (delivery "manner of speaking," smoothness, pace, expression, and volume); lexical resource (discourse markers, vocabulary, grammar, details).
3. During the COVID-19 pandemic, the second semester of 2020 was confined to Face-to-Screen treatment. Additionally, the first semester of 2020/2021 was confined to Face-to-Face treatment.

10. Instruments of the study

1. The World Languages Anxiety Scale (OWLAS) was given to participants in the COVID-19 pandemic phase.

2Foreign Language Classroom Anxiety Scale (FLCAS), administered to the same participants in the period after the pandemic.

2. An EFL speaking sub-skills scoring rubric.

11. Definition of terms

Speaking anxiety

Procedurally, speaking anxiety is the subjective feeling of tension, apprehension, nervousness, and worry that EFL senior university students experience when required to speak either face-to-face or using any online tools and applications in the English language, as measured by the two scales FLCAS and OWLAS.

12. Review of literature

12.1. Foreign language anxiety:

For many years, scholars have considered the anxiety-provoking potential of learning a foreign language. Koka, Islam, and Osman (2019)

assert that the study of foreign languages is a branch of applied linguistics that has significant connections to human psychology. Among the affective factors that can seriously hinder the process of learning a foreign language is anxiety. Hence, its effects on foreign language learning have been the subject of numerous research investigations during the last quarter of the 1970s and the first quarter of the 1980s. Jiang and Dewaele (2018) argue that foreign language anxiety is related to how positively learners perceive themselves and others, as well as how positively they perceive themselves.

In the classroom or university setting, when studying a foreign language, anxiety has been considered a key factor that influences language learning (Yan & Liang, 2022). Bollinger (2017) states that foreign language anxiety, however, as a unique type of anxiety, was not defined until the mid-1980s.

Foreign language anxiety was conceptualised by Horwitz et al. (1986) as a situation-specific anxiety rather than a trait-specific anxiety. Three distinct types of anxiety were identified: trait, situation-specific, and state anxiety. For them, trait anxiety refers to a stable predisposition to become nervous in wide range of situations or many things. For them, "trait anxiety" refers to a stable predisposition to become nervous in a wide range of situations or over many things. Anxiety that is situation-specific only relates to a certain context or circumstance and remains constant across time. Anxiety that is not constant and, particularly in a school setting, is likely to wax and wane during individual class sessions (Horwitz et al., 1986, as cited in Horwitz, Tallon, and Luo, 2010). Similarly, they referred to three related anxieties: communication apprehension, fear of negative evaluation, and test anxiety. The construct of communication apprehension is highly pertinent to the conceptualization of foreign language anxiety since it places a strong emphasis on interpersonal interactions. Additionally, "communication anxiety is a form of shyness.". p.96.

In this respect, the anxiety associated with learning a foreign language is distinct from the anxiety associated with other academic disciplines because "no other field of study implicates self-concept and self-expression to the degree that language studies do." (Bollinger (2017), as

cited in Horwitz et al. (1986). Punar and Kurtuldu (2020) add that speaking anxiety is one of the challenges in language learning. Anxiety makes it challenging for students to talk in the target language, especially in face-to-face classroom settings. As a result, Horwitz et al. (1986) created the Foreign Language Classroom Anxiety Scale (FLCAS), a self-report instrument designed to assess communication anxiety, test anxiety, and the fear of negative evaluation associated with language anxiety.

Furthermore, Zheng and Cheng (2018) distinguish three types of anxiety: trait anxiety, situational anxiety, and state anxiety, which are widely recognised as three types of anxiety that range from stability to transient incidences of anxiety arousal. Class anxiety, test confidence, and test anxiety were three connected constructs that Zheng and Cheng (2018) identified in their study. Their findings confirmed a negative association between class anxiety and test confidence as well as between test anxiety and test confidence. Cognitive test anxiety is a strong negative predictor for test confidence, and both types of anxiety are closely associated. Regardless of their self-reported language proficiency, the interview results showed that the majority of students did not perceive themselves to be seriously anxious in their university settings, either in English courses or in English test situations. These students also believed that they were competent and experienced test-takers.

According to Horwitz et al. (1986), certain individuals may experience a particular anxiety when learning or using a foreign or a second language; when engaged in contemplating foreign or second language tasks, even though they would not typically feel anxious in their everyday lives (p. 933).

A propensity to feel anxious in a certain situation is known as specific anxiety. As a result, even though they wouldn't typically feel worried in their day-to-day lives, people with a special anxiety about language learning would be predicted to feel anxious when performing or considering activities in a foreign language (Horwitz, 2016). Additionally, she explains that language anxiety is distinct from other anxieties, such as trait anxiety, communication anxiety, test anxiety, and anxiety about receiving a poor evaluation.

12.2. Speaking anxiety and foreign language anxiety

Horwitz and Horwitz (1986) conceptualise "anxiety as the subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the autonomic nervous system, which prevents some people from performing successfully in classroom situations." In line with this definition, Amengual-Pizarro (2018) explores the degree of foreign language anxiety among EFL undergraduate university students in the English for Specific Purposes (ESP) course. The results show that most students had anxiety levels that ranged from average to high. According to his findings, participants' FLA was caused primarily by communication apprehension, followed by test anxiety and fear of a negative evaluation. Finally, correlation analyses revealed significant negative associations between participants' self-perceived English proficiency and their FLA levels associated with listening and speaking skills.

Accordingly, Koka, Islam, and Osman (2019) define anxiety as the state of experiencing feelings of nervousness, unease, worry, and apprehension while learning or demonstrating a skill when the learner is asked to read, write, listen, or speak in public.

Anxiety experienced in an EFL speaking setting can negatively influence EFL students' interactions and hinder achieving their educational goals. This notion has been asserted through much research. For example, Öztürk and Gürbüz (2014) concluded their study by stating that most students regard speaking ability as an anxiety-inducing factor, and that EFL speaking anxiety can result in low self-confidence and speaking avoidance in a classroom setting. Students become anxious in foreign language classroom settings, according to Horwitz et al. (1986), when they must speak in the target language in front of peers and teachers, when they have tests or an oral exercise, and when they overstudy but do not improve their grades (pp. 126-127).Anxiety based on the language environment would be associated with language learning, whereas other types of anxiety would not.Other types of anxiety would not consistently correlate with performance, while anxiety rooted in the linguistic environment would be associated with language learning (MacIntyre & Gardner, 1989).

When dealing with anxious students, language teachers should attempt some techniques. Zheng and Cheng (2018) proposed some of them: First, they can teach the students coping skills for the anxiety-provoking

condition that already exists, and second, they can make the learning environment less stressful. Individualized instruction and appropriate accommodations for learning and assessment should be offered whenever necessary to provide quality language education. To enable the second choice, instructional materials may be modified to reflect the findings of language anxiety research. To encourage kids' language learning at the highest possible level, meaningful yet less tense content should be used.

12.3. Complex Dynamic Systems Theory and speaking anxiety

The current study is positioned within the theoretical framework of Complex Dynamic Systems Theory (CDST). The whole study goes through the lens of this theory. Verspoor and Lowie (2021) mention that Complex Dynamic Systems Theory was initially presented to the field of second and foreign language by Larsen Freeman (1997), who was then followed by De Bot et al. (2007). They add that the CDST framework is currently recognised as a potent tool for researching the real developmental processes that second language learners go through. According to CDST theory, the development of a second or foreign language does not occur in the mind but rather evolves as a person interacts with others in their surroundings.

In this regard, Hiver, Al-Hoorie, and Evans (2022) confirm that CDST was initially brought to the study of language learning nearly thirty years ago, and many fields of applied linguistics research have been influenced by its viewpoints and methods. The primary objectives of CDST are to: represent and comprehend distinct complex systems at various scales of description; recognise and fully grasp dynamic patterns of change, emergent system outcomes, and behaviour in the environment; trace, comprehend, and, where possible, model the complex mechanisms and processes by which these patterns arise; and capture, comprehend, and apply the pertinent parameters for influencing the behaviour of the systems.

Hulstijn (2020) conceptualizes CDST as the most comprehensive ultimate metatheory for language use, language acquisition and language change. As referred to in their book by Larsen-Freeman and Cameron, the entire purpose of complex systems is that several factors interact in various, occasionally even unanticipated ways. The researchers evaluate

the system after the fact to try to make sense of what has already happened, as opposed to forecasting what would happen because of an experimental modification. The components of a "simple" system are coupled in predictable and stable ways, are relatively few, and are similar to one another which is known as retrodiction, according to the authors (Murphy,2009). That is to say, the use of CDST in various facets of language learning and instruction would be advantageous in further research or applicable situations (Xiang, Chang, and Yu ,2022).

This conceptualization of this theory may be obvious in many research and studies that manipulate speaking anxiety and its causes and effects. For example, Han, Li, and Haider (2022) conducted a study to investigate the mediating effects of emotional intelligence communication and the moderating effects of an EFL Chinese university student's classroom environment, as well as the effects of FLCA on academic success during the COVID-19 pandemic. The findings showed that FLCA had a considerable negative impact on students' academic achievement. Furthermore, the association between Foreign Language Classroom Anxiety and academic success is strong. The findings also show that emotional intelligence can assist students in feeling less anxious about learning a foreign language.

Similarly, Oteir and Al-Otaibi (2019) clarify some significant causes that provoke foreign language anxiety; primary causes such as the learner, the educator, and instructional practice. Second, some major causes include: interpersonal and personal anxiety, fear of speaking a foreign language, low self-perceived foreign language proficiency, low self-esteem, learners' beliefs about learning a foreign language, classroom procedures, employing a teacher-centered method, teachers' beliefs about language teaching, and language examination.

Öztürk and Gürbüz (2014) used a questionnaire and conducted interviews in their study to assess Turkish university students' levels of EFL speaking anxiety in the context of intensive language acquisition.Their findings identify three factors affecting EFL speaking anxiety: individual, environmental, and educational. Individual factors include lack of proficiency in the target language, low self-esteem, and fear of making mistakes, which are more prevalent than the others.

In this respect, almost all speakers experience public speaking anxiety as a momentary psychological condition that fades after the speaking event ends, while some speakers experience persistent public speaking anxiety that persists through numerous public speaking situations. These people may experience public speaking anxiety even if there are no organised speaking events (Westwick & Haleta, 2015). Horwitz, Tallon, and Luo (2010) suggest some tips and steps for reducing language anxiety. For them, teachers can help their students reduce their anxiety levels by focusing both on the individual characteristics associated with anxiety and on instructional factors that contribute to increased anxiety.

Anxious students may particularly benefit from some form of supplemental instruction, such as individual tutoring or joining a language club or support group. More exposure to the language outside of the classroom may also help anxious students.

In their study, Weda and Sakti (2018) explore influential factors affecting EFL university students' anxiety. This study included sixty-four English learners as participants.Their study findings identified some contributing factors to students' anxiety, such as students' self-confidence, lecturers' roles and ways of explaining language in the classroom,   and   students'   beliefs   about   the material.

To better understand the complexity of EFL reading anxiety and how it affects other EFL accomplishments (Hamada & Takaki, 2021), which clearly separate cognitive, metacognitive, and classroom anxiety, the results showed that the multidimensionality of EFL reading anxiety is possible. The findings revealed that the three anxiety dimensions had a proportional impact on EFL reading ability, as well as a partial effect of reading ability mediating between reading anxiety and course achievement.

12.4. Online/ face-to-screen speaking anxiety

In a longitudinal survey study by Liu and Yuan (2021) examined how Foreign Language Classroom Anxiety (FLCA) and foreign language listening anxiety (FLLA) changed over the course of a semester and how they affected Chinese EFL first-year undergraduate students' competency

in English according to the COVID-19. The findings demonstrated that FLCA and FLLA were highly positively correlated. FLCA and FLLA significantly predicted students' self-rated proficiency in listening and speaking English, as well as confidence in using English, and students had high levels of FLCA and FLLA at the start and end of the semester, with neither changing significantly during the semester.

Punar and Kurtuldu's (2020) study sought to investigate the effects of Google Meet on speaking anxiety and whether accent played a role. The findings demonstrated that students' speaking anxiety in Google Meet was low to moderate compared to their overall English-speaking anxiety, and the accent was not found to be significantly associated with it.

13.Design of the experiment

The current study, which is non-experimental empirical with a correlative comparative design, was to examine if there was a statistically significant difference between students' speaking skill (sub-skills) and speaking language anxiety based on their foreign language anxiety levels and their learning environment Face-to-Face and Face-to-Screen in Faculty of Education, Damietta University.

14. Participants of the study

Thirty male and female students of senior year enrolled in Faculty of Education, Damietta University. They are one group students.

15. Variables of the study

-The independent variable is:
a. Two scales were administered to the participants: Online World Languages Anxiety Scale (OWLAS) in Face-to-Screen (F2Screen).
 b. Foreign Language Classroom Anxiety Scale (FLCAS).
 -The dependent variable is:
EFL speaking sub-skills.

16. Instruments of the study

The following instruments were used to collect the necessary quantitative and qualitative data:

1. The Online World Language Anxiety Scale (OWLAS) was administered to the participants in the COVID-19 pandemic phase. It was sent to the participant via a link after using Google Forms to implement

2. The Foreign Language Classroom Anxiety Scale (FLCAS) was administered to the same participants in the period after the pandemic. Similarly, it was sent to the participant via a link after using Google Forms for its implementation.

a. Foreign Language Classroom Anxiety Scale FLCAS.

It is a 5-point Likert scale devised by Horwitz et al. (1986) that measures the levels of anxiety as shown by negative attitudes, subjective feelings, beliefs, and feelings toward foreign language classes (Oteir & Al-Otaibi, 2019). The anxiety score of each subject is found by summing up the item weights of all thirty-three items.

This scale's theoretical score range was 33 to 165. The higher the total anxiety scores, the more anxious the students were. For each item, the respondents were required to answer questions on a scale ranging from strongly agree (5 points), agree (4 points), neither agree nor disagree (3 points), disagree (2 points), and strongly disagree (1 point). However, items 2, 5, 8, 11, 14, 18, 22, 28, and 32 were to be scored in a reversed format. Ever since the Foreign Language Classroom Anxiety Scale (FLCAS), which was developed by Horwitz, Horwitz, and Cope in 1986, has been widely used as a self-report tool to gauge the level of anxiety that second and foreign language learners encounter in the classroom (Lee & Ye, 2023).

b. Online World Language Anxiety Scale (OWLAS).

Chametzky (2019) asserts that Horwitz, Horwitz, and Cope's measure (1986) served as the foundation for the Online World Languages Anxiety Scale (OWLAS). The questions used in the OWLAS study are different from those presented by Horwitz, Horwitz, and Cope (1986). Four questions concerning demographics were found. As a result, authorization was obtained for such alterations and granted. Similarly, OWLAS participants responded via a 5-point Likert-scale: strongly

agree, agree, neither agree nor disagree, disagree, and strongly disagree, ranked from 5 to 1.

Chametzky (2019) divides the 33 OWLAS questions into 12 categories after modifying them to reflect online foreign language learning:1) consolation; 2) embarrassment; 3) worry, fear, and overwhelm; 4) assistance; 5) linguistic obstruction; 6) listening; 7) inadequacies; 8) oral production; 9) the need to practise speaking or writing before submission; 10) optimistic thinking; 11) self-deprecation; and 12) demographics.

c. Facebook page and WhatsApp application group

Using both the Facebook page, created specifically for the sample, and the WhatsApp group, the researcher selected some videos and sent them to the sample, asking them to summarise them orally in an audible track. She chose those tools because we were in the midst of a pandemic, and the university approved of them as a platform for communication with students. Hence, they were so available, common, and accessible for both the instructor/researcher and all the students. Many studies, including one by Eiadeh et al. (2016), have recommended using Facebook and WhatsApp to develop EFL speaking skills in the Arab context.

d. Speaking sub-skills list

The speaking sub-skills list's main aim was to determine the most crucial speaking sub-skills appropriate for assessing the EFL senior students' speaking anxiety. In their initial form, the speaking sub-skills were designed in the form of a questionnaire with four levels of importance: highly required, required, less required, and not required, including four skills with twelve sub-skills. It was submitted to some jurors for validation in order to rate its importance and appropriateness for the research participants. The final list included three skills with ten subskills based on the jurors' modifications and comments: fluency and coherence (cohesion and flow, pronunciation, and accent); paralinguistics (delivery "manner of speaking," smoothness, pace, expression, and volume); and lexical resources (discourse markers, vocabulary, grammar, and details).

17. Procedures of the study

The purpose of this non-experimental, correlative comparative research was to examine if there was a statistically significant difference between students' speaking skills (sub-skills) and speaking language anxiety based on their foreign language anxiety levels and their learning environment Face-to-Face and Face-to-Screen in Faculty of Education, Damietta University.

As COVID-19 strikes the globe; resulting in a lockdown period, the whole educational system—from pre-kindergarten to higher education—has been forced to switch from face-to-face instruction to searching for other alternatives, not just in Egypt but globally. Since March 2020, there have been widespread quarantines and stay-at-home orders due to the lockdown condition of the emergency protocol. Because Facebook and WhatsApp applications were permitted as a quick intervention for delivering the entire learning process, the instructor and researcher introduced them to the sample, which initially consisted of 50 junior high school students, by taking the following steps:

18.Treatment

- In the second semester of the academic year (2020), two hours of online meetings per week were implemented. The researcher sent authentic videos or podcasts, which were audio files related to the subject matter, to the students via a specific Facebook page and a WhatsApp group. Authentic videos and integrated instructional movies have been recommended to facilitate learning and allow content to be consumed smoothly and without anxiety (Abd-Al-Haq, 2018).
- Participants were asked to watch videos and summarise what they hear in audio tracks, then sent their tracks to the WhatsApp group.
- Each track should be listened to individually by the instructor or researcher, who should then provide appropriate feedback.As the participants' speeches were choppy and fragmented, with frequent pauses and lots of hesitations, a clear tendency to use L1 rather than the target language, misconnected ideas, and many mistakes, the instructor/researcher gave them some solutions.
- She provided them with certain beneficial links to authentic sites that might help improve their skills. For example, *How to Pronounce: Online Multilingual Pronunciation Dictionary*. In fact,

such channels provide authentic language situations, assisting students in learning both the pronunciation and use of words in real-life situations. *YouGlish* corrects mispronounced words.

- YouGlish (https://youglish.com), which helped them check difficult words by listening to native speakers in either an American or British accent, Fu and Yang (2019) refer to YouGlish in their study as an online-video pronunciation dictionary that uses a lexical approach to learners' speaking skills, including pronunciation, intonation, word usage, and strategies that learners used while using YouGlish, as well as their reactions to it. Fu and Yang (2019) concluded their study by asserting that with using YouGlish, students turned into active learners and knowledge generators and could determine pertinent and irrelevant information with their search processes when internalising optimal word usage, intonation, and pronunciation then supported students' self-directed learning.

Figure1

A snapshot of YouGlish interface
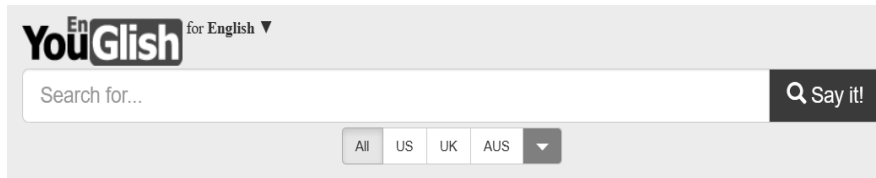
Use YouTube to improve your English pronunciation. With more than 100M tracks, YouGlish gives you fast, unbiased answers about how English is spoken by real people and in context.

- Another WhatsApp group for more practise was created for the participants. They send their recorded tracks to be corrected and receive feedback.
- The researcher and another instructor with similar experience listen to each track separately and assign appropriate scores.Two independent raters coded all the audio tracks. The scores were based on a five-Likert scale for each subskill. Measuring is used to calculate interrater reliability.It gives a high percent of agreement between raters (93%).

- All of the preceding steps were carried out in both face-to-face and face-to-screen settings.The exception is that all the techniques in Face-to-Face environments occurred Face-to-Face with complete interaction between the instructor/researcher and the participants.

١9. Results and discussion

The non-experimental, correlative comparative research sought to examine the difference between students' speaking skill (sub-skill) anxiety based on their foreign language anxiety levels and their learning environment Face-to-Face and Face-to-Screen in Faculty of Education, Damietta University.

19.1. Testing first hypothesis.

There is no statistically significant difference between the students' mean scores of speaking sub-skills in the face-to-face versus face-to-screen settings and the total.

Analyzing the first null hypothesis, the "Paired Samples T-Test" was used. Thus, a paired-samples *t*-test was conducted to compare the students' mean scores of speaking sub-skills in F2F and Face-to-Screen settings.

Table 1

Paired-Samples T-Test Differences in Speaking Sub-Skills in both Face-to-Face and Face-to-Screen

Sub-skills	Paired differences				T.value	Sig.
	Group Setting	N	Mean	Std. Deviation		
Para Linguistics	F2F	30	14.40	2.69	6.59	0.00
	F2Screen	30	10.40	3.08		
	F2F	30	10.80	2.44		

Lexical Resource					6.72	0.00
	F2Screen	30	7.30	1.70		
Fluency and Coherence	F2F	30	11.10	2.50	8.51	0.00
	F2Screen	30	7.20	1.86		
Total	F2F	30	36.30	6.89	8.67	0.00
	F2Screen	30	24.90	5.53		

There is a significant difference in the students' mean scores of speaking sub-skills in both F2F and Face-to-Screen settings; Concerning Para Linguistics sub-skills in F2F setting (*M* = 14.40, *SD* =2.69), and in Face-to-Screen settings (*M* = 10.40, *SD* =3.08), *t*(6.59) in Para Linguistics sub-skills as a whole. As for Lexical Resource sub-skills in F2F setting (*M* = 10.80, *SD* =2.44), and in Face-to-Screen setting (*M* = 7.30, *SD* =1.70), *t*(6.72) in Lexical Resource sub-skills as a whole. Concerning Fluency and Coherence sub-skills in F2F setting (*M* = 11.10, *SD* =2.50), and in Face-to-Screen setting (*M* = 7.20, *SD* =1.86), *t*(8.51) in Fluency and Coherence sub-skills as a whole. As for the total in F2F setting in the three category of the sub-skills, (*M* = 36.30, *SD* =6.89), and in Face-to-Screen setting in the three category of the sub-skills, (*M* = 24.90, *SD* =5.53), *t*(8.67) in the total in F2F setting in the three category of the sub-skills.

Based on the previous statistics of the first hypothesis, the null hypothesis is rejected. As there is a statistically significant difference in anxiety scores as measured by the Foreign Language Classroom Anxiety Scale between two types of learning environments; F2F setting and Face-to-Screen setting in favour of the F2F setting.

19.2. Testing second hypothesis

There is no significant correlation between the scores of the research sample on the FLCAS dimensions and the total score of the dimensions.

A Pearson correlation coefficient was computed to assess the relationship between anxiety in Face-to- Screen environment and three sub-skills of the speaking separately.

Table2

The Correlations Coefficient between F2F Anxiety in the Face-to-Face Environment, and Speaking Sub Skills, and the Total

To assess the relationship between anxiety in a face-to-face environment and the three sub-skills of speaking separately, a Pearson correlation coefficient was computed. There was no correlation between the two variables for Para Linguistics sub-skills, r= (118), p =.536. This result indicates that there was no correlation between the participants' mean scores in the FLCAS and the Paralinguistics sub-skills. As for Lexical Resource sub-skills, there was no correlation between the two variables, r= (086), p = .653. This result indicates that there was no correlation between the participants' mean scores in the FLCAS and Lexical Resource sub-skills. There was no correlation between the fluency and coherence sub-skills, r= (190), p = .315. This result indicates

		F2F Para Linguistics	F2F Lexical Resource	F2F Fluency and Coherence	F2F Total
	Pearson Correlation	-.118-	-.086-	-.190-	-.145-
F2F N= 30	Sig.	.536	.653	.315	.443

that there was no correlation between the participants' mean scores in the FLCAS and Fluency and Coherence sub-skills. In assessing the relationship between anxiety in Face-to-Face environment and the total of the three sub-skills of speaking, a Pearson correlation coefficient was computed. There was no correlation between the two variables, r= (145), p = .443. This result indicates that there was no correlation between the participants' mean scores in the FLCAS and the total scores of the three sub-skills of speaking.

19.3.Testing third hypothesis

There is no significant correlation between the scores of the research sample on the OWLAS dimensions and the total score of the dimensions.
A Pearson correlation coefficient was computed to assess the relationship between anxiety in Face-to-Screen environment and the three sub-skills of speaking separately.

Table 3

The Correlations Coefficient between Anxiety in Face-to- Screen Environment and Speaking Sub Skills, and the Total

A Pearson correlation coefficient was computed to assess the relationship between anxiety in Face-to-Screen environment and the three sub-skills of speaking separately. In the paralinguistics sub-skills, there was no correlation between the two variables, $r=$ (.054), $p =$.776. This result indicates that there was no correlation between the participants' mean scores in the OWLAS and the Paralinguistics sub-skills. There was no correlation between the two variables for Lexical Resource sub-skills, $r=$ (.040), $p =$ .832. This result indicates that there was no correlation between the participants' mean scores in the OWLAS and Lexical Resource sub-skills. There was no correlation between the Fluency and Coherence sub-skills, $r=$ (.167), $p =$ .378. This result indicates that there

		F2Screen Para Linguistics	F2 Screen Lexical Resource	F2 Screen Fluency and Coherence	F2 Screen Total
F2Screen N= (30)	Pearson Correlation	.054	.040	.167	.038
	Sig.	.776	.832	.378	.840

was no correlation between the participants' mean scores in the OWLAS and Fluency and Coherence sub-skills. In order to evaluate the relationship between anxiety and face-to-face interactions, a Pearson correlation

coefficient was computed. There was no correlation between the two variables, $r=$ (.038), $p = .840$. This result indicates that there was no correlation between the participants' mean scores in the OWLAS and the total   of   the   three   sub-skills   of speaking.

20. Discussion

In line with the first hypothesis, there is a statistically significant difference in anxiety scores as measured by the Foreign Language Classroom Anxiety Scale between two types of learning environments: the Face-to-Face (F2F) setting and the Face-to-Screen (F2S) setting, in favour of the F2F setting.

Unexpectedly, comparing F2F versus Face-to-Screen anxiety score settings were in favour of the F2F setting. This hypothesis's conclusion goes beyond previous research. For example, Aydin (2018) concluded his study with some recommendations regarding reducing speaking anxiety through using EFL online learning environments. He ascertained that the traditional learning settings provoke anxiety when compared to the online environment. Similarly, Oad and Khan (2020) adhered to the notion that the use of online and technological methods in the learning process can help to reduce the level of anxiety among EFL students. As a result, students struggle with a variety of issues, including oral communication. When they try to communicate verbally, they only say isolated words and disjointed sentences, which results in poor and nonsensical production.

The second hypothesis was rejected because there was no correlation between the two variables, $r=$ (145), $p = .443$. This result indicates that there was no correlation between the participants' mean scores in the FLCAS and the total of the three sub-skills of speaking. As for the third hypothesis, there was no correlation between the two variables, $r=$ (.038), $p = .840$. This result indicates that there was no correlation between the participants' mean scores in the OWLAS and the total of the three sub-skills of speaking.

As no correlation was found between anxiety and the speaking sub-skills, and after the end of treatment, the researcher asked the participants about their comments, it may be explained in the light of many

complicated and interchangeable factors. First, the participants used peer correction techniques during treatment. When asked about their reflections on the treatment and how they dealt with it, the participants assert that they recorded their audio tracks and then went to their peers to receive their feedback. They may record the same track more than once until it is improved as informed by their peers. Accordingly, this result is consistent with Tung and Huang (2022) demonstration that frequent praise from peers or teachers can reduce existing restrictions on learners or potential cognitive and emotional conflict brought on by external stimuli.

The results of the current study reveal that developing inter-peer cohesion in the FL classroom is essential for reducing FL anxiety in adult learners because perceived student emotional support is more significant than perceived instructor emotional support (Jiang and Dewaele, 2018). According to Rahmati and Ajeng (2021), learners are less nervous speaking in a foreign language in an online class than in a face-to-face class. Learners' level of anxiety in an online speaking class is lower than their anxiety in a face-to-face speaking class. He explained this finding in terms of negative evaluation factor.

Based on Complex Dynamic Systems Theory, a language may be related to certain personal traits. Individual variations in traits like intelligence, working memory capacity, and information processing speed may affect how quickly people learn languages as children and as adults in a population free of language-related disabilities (Hulstijn, 2020).

Actually, the current researcher believes that language learning is not subordinate to the laws of mathematics. In other words, to deny or believe that one plus one equals two in mathematics. For the current researcher, there is no "transcendent truth" in language learning, which means that language learning rules must be true regardless of any surrounding circumstances. As a result, this is consistent with Complex Dynamic Systems Theory. Hulstijn (2020) indicated that several factors interact in various, and occasionally even unanticipated, ways. The researchers evaluate the system after the fact to try to make sense of what has already happened, as opposed to forecasting what would happen because of an experimental modification. The components of a "simple" system are coupled in predictable and stable ways, are relatively few, and are similar

to one another, which is known as as "retrodiction," according to the authors (Murphy, 2009).

In the current study among the various, unanticipated, and unexpected factors that interact with the implementation and therefore with the results are the teacher-student relationship and the circumstances surrounding both. During COVID-19 lockdown, the current instructor/researcher was to teach to a group of students that she and they had never met before. Building rapport using only the Facebook and WhatsApp application was not convenient for both the teacher and the students. In the current study, the participants received all the learning instructions in written form. They are even not allowed to use emojis; the instructor/ researcher prevent this because of the students' misuse of emojis. The teacher, for the student, was a strict, firm, stern, and unimaginative person. On the contrary, the students, according to the teacher were reckless and impulsive.

When the learning process moved again to a face-face setting, building rapport, classroom discipline, and teacher-student interaction moved naturally and met the expectations of both the teacher and the students.

The CDST theory is supported by the results of hypotheses analysis.Tung and Huang (2022) affirmed that results from the CDST perspective show that the growth of learner autonomy (LA) is complicated because it depends on the dynamic interactions between the four key factors: the regulation of the learners' affective state, the behavioural changes they undergo, their constraints, and outside pressure and support. For them, teachers should recognise their students' affective states and create opportunities for them to convert their negative affect and increase their positive affect. It is first advised that learning activities to gauge and boost learners' affect be incorporated into course design. Another implication is that planning activities that will increase the dynamism of interactions between people and other people in the area is necessary.

21.Recommendations

Based on the previous results of the study, the following recommendations are warranted:

- Given the various factors that may interact with EFL learning and acquisitions, the Complex Dynamic Systems Theory (CDST) is particularly applicable to the four skills.
- Investigating the effects of anxiety on various aspects of language gender differences in English performance.
- Paying closer attention to how different processes interact and how that interaction, such as peer cohesiveness, may alter the outcomes. As participants in the current study perceived emotional support from their colleagues and peers, anxiety was lower than expected, especially in an online context. This could be due to social factors that affect language anxiety as a whole.
- Numerous variables, including the situation, culture, technology, cognition level, and misunderstandings of the received message, may interact to influence anxiety in either face-to-face or face-to-screen settings.
- According to the current study results, one of the primary causes of language anxiety is the teacher-student relationship. Teachers should be approachable, humorous, and encouraging, and make an effort to plan engaging classroom activities that are appropriate for students' language proficiency and interests. The ability and optimism of the teacher, along with engaging and effective teaching strategies, will foster and offer a pleasant learning environment and teachable moments, thus increasing EFL students' performance.

22.Suggestions for further research

Further research could be directed to the following fields:

- Using another face-to-face platform that may be more interactive than WhatsApp and Facebook to develop and improve speaking skills.
- Implementing another platform that provides more security and allows for the necessary classroom interactions, particularly nonverbal ones, in reinforcing reading, writing, and listening skills.
- Investigating the impact of speaking anxiety on pre-university students and pupils
- Comparing and contrasting the face-to-face versus face-to-screen environment when implementing further language skills.

- Comparing and contrasting the face-to-face versus face-to-screen environments when implementing the listening skill.
- Focusing on students' different feelings while learning languages alongside other skills such as reading and writing.
- Clarifying the connection between student-internal and teacher-related factors and classroom feelings while investigating the relationship between anxiety and other language skills.
- Investigating speaking anxiety effects with relation to gender in an Egyptian context.
- Evaluating the affect of speaking anxiety on university students attitudes towards English language learning.

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