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Investigating EFL Learners' Tech-Anxiety in Online learning : The Case of Third-Year Students 8 May 1945 University, Guelma

A Dissertation submitted to the Department of Letters and English Language in Partial fulfillment of the requirements for the Master Degree in Language and Culture

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Dedication

"I would like to thank Allah for providing me with the strength and guidance to complete my research."

This work is dedicated to the people most precious to me:

To my hero, my greatest and unparalleled father, who devoted his life to me. If I tried hard to return a little of his grace, I would not be able to because he showered me with unconditional generosity and love. May God keep you in our lives.

My great mother, who is no less important than the first one. My Beautiful inside and out ,caring,and patient mother. The wrinkles on your face are evidence of your endless sacrifices for me. God bless you, my treasure.Words of thanks are not enough for you, my parents.

My sisters, my beloved princesses Hadeel, Salsabil, Aisha and Tasneem, you are my most precious possession.

To my husband Hossam and his lovely family.

To my soul mate, the one of a kind, and my best friend, Lina, the person who loved me and truly knew who I am. I love you, my partner.

To my partner in this work, Rasha, It was nice working with you to finish the fifth year academic journey

Khouloud Boussaha

Dedication

Without a shred of doubt, I dedicate my work to the superheroine of my life: my dear mother. You have fearlessly confronted every frustration and hardship to shape the person I am. I have always been proud to be your daughter.

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To my cherished friends, may we always remain united by love, laughter, and shared experiences!

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Abstract

This study aims to investigate EFL students' tech anxiety during online learning. Accordingly, the present research explores students' viewpoints and experiences regarding the effect of tech anxiety on online learning. Hence, we hypothesized that students could have a negative attitude towards online learning due to tech anxiety. In order to prove or disprove the hypothesis, the descriptive method was adopted through the administration of an online questionnaire to third-year LMD students at the department of English at the University of Guelma,8 Mai 1945. Findings indicated that students have a negative attitude towards online learning due to tech anxiety; thus, their engagement and participation in online courses are affected negatively by their feelings of tech anxiety. Therefore, students need to employ various techniques and strategies to deal with their anxiety when using technology.

List of Acronyms and Abbreviations

EFL: English as Foreign Language

LMS: Learning Management System

ISP: Internet Service Providers

DVD: Digital Video Disc

IOS: iPhone Operating System

Moodle: Modular Object-Oriented Dynamic Learning Environment

HEI: Higher Education Institutions

ICT: Information and Communication Technology

PBL: Project-based Learning

IBL: Inquiry-based Learning

PLATO: Programmed Logic for Automatic Teaching Operations

TA: Technology Anxiety

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General Introduction

Technological anxiety has grown dramatically in the last several years, particularly with the appearance of COVID-19. This marked the shift in the educational approach from traditional classroom instruction to online learning, which persisted in Algeria as a required component of education even after COVID-19 was discontinued; in online learning students face many problems such as lack of experience, technical difficulties (poor internet connection, poor system quality, etc.). Due to this, there is a significant disparity in the number of students experiencing technology anxiety, particularly among EFL learners. This is due to the large gap that exists between students and using technology in online learning. In other words, the less use of technology in the academic field leads to an obstacle to students' participation in online activities, low confidence and competence, and thus the failure to use technology in online learning.

On the other hand, online learning has become an increasingly prevalent mode of education, offering flexibility and accessibility to learners worldwide. However, the effectiveness of online learning can be significantly impacted by various factors, including technology-anxiety. Technology anxiety, characterized by apprehension or discomfort with digital tools and platforms, can hinder students' learning experiences and outcomes in online courses. Factors such as struggling to access technologies and to connect to the internet, as well as poor technology competence and digital literacy, can contribute to technology anxiety, affecting learners' participation and engagement and their intention to pursue online learning in the future. Understanding and addressing technology anxiety is crucial to ensuring that online learning environments are conducive to optimal learning outcomes and student engagement.

1. Statement of the Problem

Feeling anxious when using technology in online learning may negatively affect students' engagement and participation in online courses; therefore, online learning success is eroded by technology anxiety, which involves discomfort with digital tools. Difficulties in accessing technology, poor internet connectivity, and low digital literacy worsen this problem, affecting student engagement and participation. Thus, addressing tech anxiety in online learning is an important issue in language learning because it can reveal problems within the context of distance learning using technology for foreign language students, create effective online learning environments, and ensure ideal student engagement.

It is observedthat many third-year EFL students in the Department of English at the University of Guelma don't engage in online sessions; they are not skilled with technology and feel uncomfortable using technologies. This is due to many factors, among them tech-anxiety. Accordingly, this research addresses the following main question:

-Are students have a negative attitude toward online learning due to tech anxiety?

Other research questions include :

1- Do learners experience tech anxiety during online courses?
2- To what extent does tech-anxiety affect learners in online learning?
3- What are the causes and consequences of this phenomenon?

2. Aims of the Study

This study's main goal is to investigate the tech-anxiety experienced by EFL students in online learning courses. Additionally, it investigates the main causes of tech anxiety, how much they use technology during online courses. Furthermore, in order to guarantee the success of e-learning at the University of Guelma, this study attempts to offer methods to eliminate, or at least reduce, this phenomenon.

3. Research Hypothesis

EFL technological anxiety during online courses significantly impacts learners' attitudes towards online courses, with potential causal factors including their gender, limited exposure to technology in academic settings and the technical difficulties during online learning sessions. Therefore, we hypothesize that:

H1: Students' negative attitude towards online courses is due to tech anxiety.

H0: Students negative attitude towards online courses is not due to tech anxiety.

4. Research Methodology and Design

4.1. Research Methods and Tools

In order to investigate the causes of technological anxiety in online learning , the descriptive quantitative approach is used to testify the research hypothesis by administering a questionnaire to third-year students to extract information about learners' experiences with technology anxiety and their perceived causes of tech anxiety during online learning. This tool provides the necessary data for analysis and is also a reliable and rapid tool to gather information from a large population in a short period of time.

4.2. Population of the Study

The sample of the present investigation targeted third-year LMD students of the Department of Letters and English Language, University of Guelma, May 8, 1945. The reason why third-year LMD are targeted is because they experienced different forms of online courses for three years; so, they are supposed to be more familiar with distance learning because they experienced different forms of it. Additionally, they are supposed to be mature enough and have the ability to figure out their feelings of anxiety and stress towards technology. Also, they are more familiar with the English language, so they have a good level of English. The participants' perceptions and opinions of online learning and digital access provide this study with significant findings about their level of technological anxiety.

5.Structure of the Dissertation

The current dissertation is divided into three chapters in addition to a general introduction and conclusion. The theoretical part includes the first two chapters, in which they provide an overview of the two variables. The first chapter deals with anxiety, its definition, theories, and types, including technological anxiety, which is also discussed in detail in this dissertation. As for the second chapter, which is devoted to covering online learning, its evolution, the various models and pedagogical approaches to online education, as, also the different technologies and tools used during online learning, measuring the contributing factors to online learning, assessing the various benefits and drawbacks of online learning, and finally the tech-anxiety impact on online learning,. The third chapter, "Field Investigation," delves into the description of the students' questionnaire as well as the analysis

of the findings. Lastly, the "General Conclusion" provides pedagogical implications and recommendations based on the findings as well as the study limitations.

Chapter One

Tech- Anxiety

Introduction

Technological anxiety is one of the important challenges in the field of online learning for learners of English as a foreign language (EFL). English language learners may feel uneasy or afraid when using digital tools as they make their way through the virtual classrooms and internet platforms . The COVID-19 pendemic has hastened the extensive integration of e-learning in Algerian universities, making this phenomena more common. Although virtual classroom systems such as 'Big Blue Button' are easily accessible, students frequently face challenges and lack of satisfaction with their online learning experiences. Reluctance to engage in online forums, anxiety about making mistakes when using technology, and difficulty adjusting to new tools or programs are some signs of tech-anxiety. Fostering a helpful and productive online learning environment for EFL students requires addressing these issues.Hence,this chapter explores a number of topics related to technology anxiety, which is an important issue in modern learning environments. It begins by explaining the notion of anxiety and going over its definition, underlying causes, and theoretical underpinnings. Next, the attention is limited to anxiety related to technology, which is the main goal of this research project. In light of this, the chapter looks at the definition, causes, possible consequences, and workable solutions meant to lessen its effects.

1.1. Definition of Anxiety

Anxiety has been defined in a variety of ways. These meanings could change depending on how one interprets the concept or how they approach studying it. According to Sharma and Sharma (2015, p. 26), anxiety is derived from the Latin word "angere," which means "to distress" . Another way to describe anxiety is as a vague, unsettling feeling brought on by

ongoing stress and the presence of several stressors (Lazarus & Folkman, 1984, as cited in, Sharma and Sharma, 2015, p. 26). In other words, Anxiety is similar to a hazy, unpleasant feeling brought on by ongoing pressure and stress.

According to Barlow (2002), Anxiety is an uncontrollable, diffuse, unpleasant, and persistent state of negative effect, characterized by apprehensive anticipation regarding unpredictable and unavoidable future danger, and accompanied by physiological symptoms of tension and a constant state of heightened vigilance.

The psychologist Allen declared: "Anxiety is a fear or threat response. Physiologically, it is adrenaline's impact on the body and part of the body's fight or flight system". As mentioned by the World Health Organization (2020) 'Anxiety disorders are characterized by excessive fear and worry and related behavioural disturbances. Symptoms are severe enough to result in significant distress or significant impairment in functioning.'

This concept has many definitions ,but most of them are similar .In its general sense, anxiety refers to a feeling of panic, fear, and uncertainty regarding events in which a person is helpless, and is usually accompanied by physical symptoms (hyperhidrosis, change in facial expressions and body language, breathlessness, pain in the chest, Lack of self-control, etc.). In other words, anxiety is an innate state and a natural reaction that the body makes to face a dangerous or unfamiliar situation, as it can be useful because it pushes us to react when facing a problem but it becomes a real trouble if anxiety is excessive compared to the situation we are facing or if it continues for a longer period of time than normal , to the point that even the simplest things become tiring to do.

1.2. Types of Anxiety

There are different kinds of anxiety: Temporary tension or emotions of worry are referred to as state anxiety. A consistent personality feature featuring a tendency to feel anxious is trait anxiety. Anxiety that is situation-specific develops in reaction to certain

situations. While crippling anxiety makes it difficult to function, facilitating anxiety can improve performance.

1.2.1.Trait Anxiety

Trait anxiety is a feature of the neuroticism personality domain and it is generally stable over time (Gidron, 2013,Wiedemann, 2015). According to MacIntyre and Gardner (1991) trait anxiety is "the most enduring form of anxiety; students experiencing this kind of anxiety typically exhibit extreme apprehension in numerous situations that are objectively non-threatening." (P. 87). Spielberger (1966) states, state anxiety is a transitional emotional state that is primarily implied by self-report. On the other hand, he claimed that trait anxiety is a measure of anxiety proneness, or an individual's apparent tendency to feel anxious in response to a variety of stimuli (As cited in Magdalena Szyszka, 2017, p.55). Thus, an individual with trait anxiety usually experiences anxiety more frequently and more severely than most people.

1.2.2. State anxiety

Acoording to Spielberger (1983, as quoted in, Sharma and Sharma, 2015, p. 26) stated anxiety defined as an apprehension that arises in reaction to a specific situation at a certain moment in time. It may manifest as tremors, perspiration, elevated heart rate and blood pressure, or signs of anxiety, stress, and autonomic nervous system activation that is, it is common for a student or a person in general to become worried in response to any threat or risk. Anxiety states are not constant; rather, they fluctuate constantly. Thus, state anxiety can be defined as the learner's fear in a particular scenario and at a particular moment.

1.2.3. Situation-Specific Anxiety

Situation-specific anxiety is triggered by a particular kind of circumstance or incident such as public speaking. MacIntyre and Gardner (1991) claimed that it is "the probability of feeling nervous in specific circumstances, such taking exams (called "test anxiety"), working

through arithmetic problems (called "math anxiety"), or speaking a second language (called "linguistic anxiety")" (p.87).

Anxiety that is situation-specific is the fear that EFL students feel in certain types of learning environments. Due to the characteristics of this kind of anxiousness, scholars such as Horowitz, Horwitz, and Cope (1986) stated ;"Classroom anxiety related to foreign language students is situation-specific anxiety ." (p. 127). That is, this kind of anxiety manifests itself in reaction to a particular threat in a particular circumstance, such as an exam or test, and appears according to that situation.

1.2.4 Facilitating Anxiety

Facilitating anxiety is a form of anxiety that can actually help with performance, as opposed to debilitating anxiety, which hinders performance. It is believed that encouraging anxiety can help EFL students regard language tasks as challenges rather than threats. According to Scovel (1978) Facilitating anxiety encourages students to put in extra effort to succeed in a new learning assignment by motivating them to conquer its difficulties. Research indicates that EFL students who view their anxiety as beneficial typically achieve higher language outcomes than those who view it negatively but, this kind of worry shouldn't develop to a significant degree in the learner's head so that it doesn't prevent them from giving a strong oral performance (Bali, 2017, p. 😎. Facilitating anxiety is linked to higher levels of tension, support seeking, proactive coping, and problem-solving . It pushes learners to find the best solutions to achieve their goals and to persevere their all on a task they are working on.

1.2.5 Debilitating Anxiety

Researchers have discovered that anxiety related to learning a foreign language can have a variety of detrimental impacts (Luo, 2013, p. 99, as cited in Saidi, 2015, p. 10). The primary reason of this is debilitating anxiety, which negatively influences EFL learners by hindering their performance. This kind of anxiety makes it difficult to concentrate, remember, or pay

attention. It also inhibits using learning resources and makes people feel incompetent, which leads students to adopt passive learning strategies and engage with the content less. Debilitating anxiety can ultimately result in a reluctance to actively participate in language exercises and a decreased enthusiasm in learning. According to William (1983, as cited in Saidi, 2015, p. 11), learners who experience low anxiety have a facilitating anxiety whereas those who experience high anxiety have a debilitating anxiety. This explains why students' accomplishments suffer when they experience high levels of anxiety (Bali, 2017, p. 9).

1.3. Theories of Anxiety

These are the theories that provide different perspectives on the nature of anxiety :

1.3.1. The Cognitive Theory

the cognitive theory of anxiety, abnormal thought patterns and cognitive functions are the root cause of anxiety disorders. This hypothesis holds that people who experience anxiety frequently interpret events and situations in a biased and distorted way, heightening the perceived threat or danger. Cognitive biases, such as the tendency to perceive ambiguous circumstances as dangerous, are one way in which this distortion presents itself. Negative automatic thoughts are another feature of anxiety. These are uncontrollable, spontaneous ideas that are usually illogical and fuel feelings of worry and fear (Tyrer, 2013).

In the cognitive theory, people with dysfunctional thoughts experience intense emotions, which then cause them to act in ways that are out of character. Take this instance to demonstrate the potent impact of these ideas: Let's say a pupil is getting ready to ace a challenging exam. They believe to themselves, "I am going to fail this test because I can't seem to do anything right," as they are doing this. They will be uneasy with this concept. Because of this, when they finally take the test, their nervousness will interfere with their concentration, which will lower their scores. It's possible that they won't pass the exam simply because they didn't dedicate enough time and effort to studying. Paradoxically, this setback

will confirm their false notion that they are unworthy. But rather than being a natural failing, the real cause of their failure was their lack of preparation and effort. If they believed that putting in a lot of study time and thinking positive things would make up for the test's difficulty, the result would be entirely different. It is obvious that these two diametrically opposed perspectives on the same occurrence lead to quite different actions and results (Jacosfky et al., 2021).

1.3.2 Psychodynamic Theory

According to psychodynamic theory, anxiety is a result of the intricate interactions between different aspects of the psyche, unfulfilled wants, and unconscious conflicts. This perspective holds that anxiety arises from a conflict between the internalized moral norms of the superego, the limitations of reality that the ego must deal with, and the demands of the id, or intrinsic wants and desires(Pitman & Knauss 2020). Anxiety is an uncomfortable emotion for the one who is feeling it. Chronic anxiety can hinder day-to-day functioning by influencing one's capacity for focus, memory, and decision-making. Anxiety symptoms can vary greatly from person to person and can take many different forms, both physically and mentally. Anxious people may experience feelings of dread, unease, or trepidation on an emotional level. In addition, they could find it difficult to stop worrying and deal with intrusive or racing thoughts. Anxiety can manifest physically as a rise in heart rate, perspiration, trembling or shaking, shortness of breath, lightheadedness or dizziness, gastrointestinal problems like nausea or stomach discomfort, aches or tension in the muscles, and exhaustion (Morris, 2019).

Anxiety is interpreted in psychodynamic theory as an indication of ongoing conflicts between the id, ego, and superego. The superego embodies internalized moral principles and social norms, while the id represents basic instincts and appetites that seek instant fulfillment. When the ego, which acts as a mediator between these opposing forces and the needs of

reality, is unable to adequately handle these tensions, anxiety results. For instance, the ego may feel anxious as it attempts to balance achieving the demands of the superego with gratifying the id's needs if the superego imposes severe self-criticism or unattainable standards (Shapiro, 1995, p. 651).

1.4.Causes of Anxiety

Anxiety can result from several factors such as genetic factors, trauma , cardiovascular disease, The following paragraphs will explain them in details .

1.4.1. Genetic Factors

Genetics plays a major role in the development of anxiety disorders by affecting an individual's propensity for excessive worry, dread, and stress. According to studies done in 2015, anxiety disorders appear to have a hereditary propensity and tend to run in families. Anxiety susceptibility has been associated with specific genes that control brain chemicals like serotonin and GABA (Davies, Verdi, Burri, Trzaskowski, Lee, Hettema, & Spector, 2015, p. 11) as well as the stress response system. Variations in these genes can alter a person's susceptibility to anxiety by influencing how the brain interprets emotions and reacts to stress. The intricate interaction between genetics and environment in the development of anxiety disorders is highlighted by the fact that, although genetic variables are important, they also interact with environmental influences and life events.

1.4.2 Trauma

According to the American Psychological Association dictionary of psychology trauma is defined as extremely upsetting events that exceed a person's capacity for adjustment and result in severe emotional and psychological suffering. It can result from a number of things,

including mistreatment, mishaps, natural calamities, or seeing violent acts. Fear, helplessness, or terror are common emotions brought on by trauma, both during and after the occurrence. It may have a lasting effect on relationships, actions, and thoughts. In order to recover and reclaim a sense of security and well-being, coping with trauma may call for the assistance of mental health specialists, counseling, and other services. Traumatic experiences can interfere with the brain's normal stress response mechanism, which can result in enduring anxiety, hypervigilance, and a continuous sensation of danger. Traumatic experiences can interfere with the brain's normal stress response mechanism, which can result in enduring anxiety, hypervigilance, and a continuous sensation of danger (ART International, 2020).

1.4.3. Cardiovascular Disease

Anxiety levels can rise in people with cardiovascular disease for a variety of reasons. First, unsettling physical symptoms like palpitations, chest pain, and breathing difficulties can make people anxious and afraid they'll have a medical emergency like a heart attack. Second, anxiety levels may rise due to the stress of managing the illness and any accompanying risks. Third, hormonal fluctuations and mood swings brought on by heart disease-related physiological changes in the body, such as elevated blood pressure and irregular heart rate, can exacerbate anxiety. Lastly, social isolation and strained social relationships—two social and psychological impacts of heart disease—may raise anxiety levels and negatively impact mental health in general (CardioVascular Group, 2020).

1.5. Effects of Anxiety

Anxiety can have a significant negative influence on both physical and mental health, resulting in symptoms including depression, trouble breathing, and memory loss. Additionally, it can sour relationships and impair productivity at school.

1.5.1. Depression

According to the American Psychological Association, intense anxiety is frequently linked to depression. Anxiety that is severe and persistent might eventually weaken a person's mental fortitude and result in depressive symptoms like melancholy, helplessness, and hopelessness. A person's energy and motivation might also be depleted by the ongoing fear of bad things happening and the physical effects of worry, which exacerbates depressive symptoms. To support comprehensive mental well-being, anxiety and depression must be treated concurrently with therapy, medication, lifestyle modifications, and social support. Students with the most severe depression can improve with treatment, but depressed episodes are common after treatment. The sickness has been extensively studied, leading to the creation of psychotherapies, and other treatments for those suffering from this debilitating disorder (Fusco, 2012).

1.5.2. Memory Loss

Anxiety has a major impact on memory performance in a number of ways. First of all, when someone is anxious, their focus is more likely to be on their concerns than the current work.Furthermore, anxious thoughts can interfere with the ability of knowledge to be efficiently maintained in long-term memory. In general, anxiety can interfere with encoding, retrieval, and consolidation phases of the memory process, which can affect a person's capacity to create and retrieve memories.

Additionally, anxiety is defined by a limited ability to control worried thoughts and cautious biases that aid in concentrating more on unfavorable inputs. Anxiety has been demonstrated to impair cognitive function, especially working memory (Maloney, Sattizahn, & Beilock, 2014, p. 405).

Anxiety has a significant impact on working memory. It is essential for handling information in the present and addressing problems successfully.When this specific system isn't working effectively, it can lead to errors, make it harder to do jobs correctly, cause issues multitasking, and make it harder to focus. (Meek, 2019). Research has consistently demonstrated that excessive levels of anxiety impair one's ability to use working memory. Decision-making abilities, the capacity to use sophisticated problem-solving techniques, and performance at work and in school could all be affected. (Meek, 2019).

1.5.3.Breathing and respiratory changes

Anxiety-related respiratory issues are frequently caused by the body's innate stress response mechanism. Stress chemicals like cortisol and adrenaline are released when a person feels anxious because his/her body interprets a threat, whether it be imagined or genuine. These hormones cause a variety of physiological changes, including those in the respiratory system, as they prime the body for a "fight or flight" reaction (Taylor, 2010).

According to the White Swan Foundation (2015) ,breathlessness, rapid breathing, and chest strain are among the physical symptoms that accompany shortness of breath. You feel these symptoms as a result of your efforts to prepare for action and get your muscles to receive more oxygen. Your body may become hot and your heart rate may rise as more blood is pumped to your muscles in order to get ready for combat.

1.5.4. Poor Academic Performance

Students' academic performance is greatly impacted by anxiety through a variety of mechanisms. First of all, it makes it difficult for pupils to concentrate and take in new material, which hinders learning and concentration. Overbearing anxieties and rushing thoughts can make it difficult for them to focus in class and understand difficult material.

Second, anxiety impairs one's ability to retrieve information, especially before tests or in stressful situations (Vitasari, et al 2010).

As coping methods, avoidance behaviors—such as skipping classes, avoiding social situations, or putting off assignments—are frequently used by students who are experiencing anxiety. Furthermore, worry can undermine students' sense of self-efficacy and self-belief, which lowers their self-assurance and belief in their own talents (Vitasari, et al 2010).

Trifoni and (Shahini 2011, p. 94, Spielberger 1962) carried out a study with college students that supports this point of view. According to the study, 26 out of 129 high-anxious students left college for the same reason, while only 8 out of 138 low-anxious students departed for the same reason.

Foreign language anxiety is the most important factor in the learning process that lowers the performance of language learners. Since it can have a detrimental effect on a student's speaking ability, it can be a significant cognitive and physical barrier to learning. When using a second or foreign language, language learners experience language anxiety, which makes it extremely difficult for them to interact with others in a scenario when they are not comfortable with the language (Spielberger, et al.,1995). In other words, there exists a correlation between anxiety and speaking a foreign language.

1.6 Anxiety in Foreign Language Anxiety

Anxiety in foreign language learning in general and English in specific is due to the challenges and difficulties that language learners face when speaking or learning since the English language has become the official language spoken in most countries of the world, and this is considered a burden for those who face difficulty in learning a new language, and this

is what lead to anxiety. MacIntyre (1995) explained how anxiety might arise when learning a language:

> Anxiety can impede the encoding, storage, and retrieval processes necessary for language learning, which makes anxious students more likely to experience fragmented attention. Students who are anxious concentrate on the task at hand as well as how they respond to it. For instance, when answering a question in class, the nervous student concentrates on providing the teacher's question with a response while considering the social ramifications of that response.(p,80)

For a variety of reasons, learning a foreign language can frequently cause worry and uneasiness. Initially, as students struggle with the new sounds, grammar rules, and vocabulary, the anxiety of making mistakes can be quite real. Anxiety can be made worse by the pressure to perform flawlessly, particularly in social or academic contexts (Trang, 2012, p.70). This can result in a dread of humiliation or criticism from others. Additionally, For students, the anxiety of not making enough progress or becoming fluent in the allotted time can be quite taxing, leading to feelings of inadequacy or anger. Furthermore , the apprehension of misinterpretation during communication can create an obstacle to engagement . In addition to these difficulties, learners may experience feelings of inadequacy and self-doubt due to repeated comparisons to native speakers or more experienced language learners. This can exacerbate anxiety related to language acquisition. Therefore, learning a foreign language is a journey that frequently involves obstacles that must be overcome with resiliency, persistence, and a supportive atmosphere in order to succeed.

But the learner must determine the type of anxiety he experiences while learning a new language, as it is classified into two classical classifications according to the psychologists Speilberger and Scovel (as cited in Shabani, 2012). Spielberger's theory of anxiety is that it

can be a trait anxiety in which the individual is exposed to general and constant anxiety, which makes it part of his personality. On the other hand, state anxiety arises only when exposed to certain events, and thus it is a transient and temporary condition. Anxiety and fear disappear when those circumstances disappear. Richard Scovel created this classification (Facilitating and debilitating anxiety), which focuses on how anxiety might improve (facilitating) or worsen (debilitating) performance in situations involving language learning. In summary, the learner should comprehend the many aspects of anxiety in both general and language acquisition with the aim of improving learning outcomes and eliminating anxiety .

1.7. Sources of Foreign Language Anxiety

It has been agreed that language anxiety plays a significant role in language learning. Although teachers and learners are aware of its existence in language learning, they should specify its origin as well. It may come from the teacher, the student, or the learning conditions. Young (1991) examined three factors—the student, the teacher, and the instructional method—to identify six possible causes of language anxiety. He asserted that the following factors contribute to language anxiety: (a) Learner Beliefs about Language Learning; (b) instructor' beliefs about language teaching; (c) Instructor-Learner Interactions; (d) Personal and Interpersonal Anxieties; (e) Language testing ; and (f) classroom procedures.

1.7.1. Learner' Beliefs about Language Learning

Anxiety can be greatly increased by learner attitudes about language acquisition. This is because catastrophic thinking, which emphasizes worst-case scenarios or exaggerates the repercussions of errors, can exacerbate anxiety.

According to young (1991) The primary causes of language anxiety in students are their attitudes toward language acquisition. For example, students think that the most crucial aspect

of language learning is pronunciation. The following optional learning activities are listed in order of popularity: translating, making friends, studying conjugations in class, memorizing grammar, communicating, going to countries where the language is spoken, and vocabulary building. These erroneous assumptions may be the source of language anxiety. Despite their high levels of motivation, he claimed that beginners cannot sound like native speakers. Additionally, they will become frustrated and stressed out if they believe that pronunciation is the most crucial factor (Young, 1991, p. 428).

1.7.2. Instructors' Beliefs about Language Teaching

Many studies have demonstrated that teachers may also be a cause of anxiety. They believe that when students are rigorous, it inspires them. Unfortunately, this may increase the student's anxiety and fear of participating in class and freely expressing their desires.

Teachers feel that rather than assisting their students, they must fix their errors. This may be seen as a factor in pupils' linguistic anxiety. The issue that EFL students frequently face is not the teacher's error correction, but rather the method by which the error is corrected. Teachers, therefore, reject the notion that correcting faults and being tough with students can cause fear in them. As Young explained here:

> Instructors who believe their role to correct students constantly when they make any error, who feel that they cannot have students working in pairs because the class may get out of control, who believe that the teacher should be doing most of the talking and teaching, and who think their role is more like drill sergeants than a facilitator's maybe contributing to learner language anxiety (1991, p.428).

In other words, teachers who correct students' work a lot, avoid pair work to keep things under control, take charge of class discussions, and act more like drill sergeants than facilitators may unintentionally make students more anxious while speaking the language.

1.7.3. Instructor-Learner Interactions

Young (1991, p. 429) asserted that classroom behavior patterns can impact the way in which teachers and students interact. Tough methods of correcting students' errors are sometimes called anxiety-inducing. Furthermore, students frequently report feeling anxious because they make poor responses, act inappropriately around their peers, and appear or sound "dumb" .While it is crucial and necessary to correct faults, the method by which these mistakes will be corrected is inappropriate. In conclusion, how the errors are fixed is more important than the errors themselves.

1.7.4. Personal and Interpersonal Anxieties

There are two main causes of student anxiety: low self-esteem and competitiveness. In this regard, Brown declared that a highly competitive workplace might create anxiety because students compare themselves to their peers, fearing rejection and feeling compelled to outperform others. This feeling can lead to a stressful environment, inhibiting collaborative learning and reducing self-esteem (as cited in Young, 1991, p.427). That is, practically all learners constantly compare themselves to their peers, attempting to be the best and having a strong desire to be more successful and superior to others.

Moreover, Peleg (2009) noted that the students consistently believe their language abilities and skills were inferior to those of their peers. They felt that others looked down on them and typically performed better than they did. Numerous researchers have found additional characteristics associated with personal and interpersonal fears, such as

communication apprehension, social anxiety, speech anxiety, shyness, embarrassment, language anxiety, and others (Young, 1991, p. 427).

1.7.5. Language Testing

Students may feel anxious during language exams because they are under pressure to perform well and worry that they won't reach the standards, which could affect their grades. They can also be concerned about the test's complexity and time limits. Uncertainty regarding the test style and the dread of receiving a poor grade from classmates or teachers. When it comes to language testing, students will become more worried and frustrated the more the teacher assesses them and the more he creates unclear and uncomfortable assignment and test forms (Young, 1991, p. 429).

1.7.6. Classroom procedures

The need to speak in front of the class in the target language is the primary cause of anxiety when it comes to classroom procedures. Young (1991) claimed that classroom procedures can be a major source of anxiety because of things like oral presentations in which the student is obliged to use the target language in front of his classmates. Koch and Terrell (1991) discovered that the activities in their Natural Approach class that caused the most anxiety in their participants were oral presentations in front of the class and oral plays. Additionally, another example of a source that might cause anxiety is oral quizzes, in which students are called upon at the last minute to perform in front of their peers.

1.8. Technological Anxiety (TA)

The term technological anxiety has been an interesting one since the 18th and 19th centuries. This is due to the occurrence of the Industrial Revolution, which brought about a

dramatic change in the manufacturing process, moving from human labor to machine-based production. At the time, prominent economists held differing views. Thomas Mortimer (1772, p. 104 as cited in Joel Mokyr, 2015) expressed his wish that sawmills and stamps would never be invented since they would "exclude the labor of thousands of the human race, who are usefully employed..." Significant societal changes were brought about by this rapid technical improvement, including urbanization, changes in work patterns, and adjustments to social structures. Those whose livelihoods were affected by these technological shifts frequently experienced worry as a result of these developments.

However, the fast development of digital technology in the late 20th and early 21st centuries is more directly linked to the contemporary form of tech-anxiety. This led to the spread of anxiety in societies at that time, and many of society's elite referred to this dilemma in their works, such as the economist and philosopher John Maynard Keynes, who discussed and presented his reflections on the future of technology and unemployment in his famous article "The Economic Possibilities of Our Grandchildren" that published in 1931. More recently, in the midst of the mid- and late-1970s economic downturn, Winner's 1977 book "Autonomous Technology was released. Concerns regarding privacy and data security have grown in frequency as technology has become more ingrained in many facets of our life, from work and communication to leisure and personal identification.

The emergence of artificial intelligence, social media, and the internet have also sparked concerns and new question regarding the effects of these technologies on social, psychological, and mental health. Technological anxiety was not limited to these fields only, but also included the academic field, especially in recent years due to the emergence of Covid 19 , when there was a radical change in the education system. Classical studies were transformed into distance education, where students became obligated to use technology and

to attend virtual classrooms. Therefore, it can be said that technological anxiety is more related to online learning, and this is due to several reasons that will be discussed in this later in this chapter (Guest et al., 2023).

1.8.1. Definition Tech-anxiety

Technological anxiety or what is also known as Computer anxiety is defined as the feeling of nervousness or discomfort when engaging with technology. Rohner and Simonson (1981) defined computer anxiety as "the mixture of fear, apprehension, and hope that people feel when planning to interact with or actually interacting with a computer" (p. 151). In addition to Howard (1986), computer anxiety is also defined as "apprehension about approaching computer use that is out of proportion to the danger that the device actually poses" (p. 18). Moreover, Leso and Peck (1992) defined computer anxiety as a feeling of being fearful or apprehensive when using or considering the use of a computer. Furthermore, computer anxiety, defined by Tuncer (2012) as ‘anxiety related to computers is a unique kind that can show itself as a range of symptoms, such as annoyance, embarrassment, disappointment, and fear of the unknown’. All of these descriptions define technological anxiety, also referred to as computer anxiety, as people's unease or apprehension when they use technology, especially computers.

Two categories have been identified by psychologists for general anxiety: Anxiety pertains to traits and states (Spielberger 1966). State anxiety is defined as anxiety actually experienced in a particular situation, whereas trait anxiety is a characteristic of the neuroticism-personality domain and is often consistent across time regardless of the circumstance (Spielberger, 1983). Technology anxiety as state anxiety includes “apprehension and the discomfort that the individuals felt when they used computers, or when they took into consideration the potential for use(Simonson, Maurer, Montag-Toradi, & Whitaker, 1987, p. 238). Technological anxiety

means the unfavorable emotional or mental condition that someone has when using technology or technology-related devices (Bozionelos, 2001). According to Celik (2016), computer anxiety is the extent to which a person temporarily feels anxious, hostile, and afraid when utilizing or even thinking about utilizing a virtual system. The term tech anxietyis a developed version of computer anxiety. The degree to which a user exhibits fear or difficulty when utilizing a computer device is known as computer anxiety (Adenuga et al., 2019) or as a negative response brought on by prior computer-related events (Lee & Xiong, 2018). While computer anxiety is more focused and relates only to fears associated with using computers, tech anxiety is a more generic word that covers anxieties related to technology in general. Nonetheless, the terms are frequently used synonymously, and people might have anxiety related to both at the same time.

1.8.2. Causes of Tech- Anxiety

Since technological anxiety is a widespread phenomenon in all fields, including studies, especially among English language students, some of the possible reasons contributing to the cause of this phenomenon will be discussed. Foreign language learners may experience tech anxiety for a variety of reasons, some of which are unique to language learning and the usage of technology in that environment.

1.8.2.1. Lack of Experience

Many researchers have demonstrated that less computer anxiety is reported by seasoned computer users. It was also found that people who experience computer anxiety are less likely to own or have previously used computers at home (Decker, 1999; Hasan, 2003; Thatcher & Perrewe, 2002). A student's computer anxiety is negatively correlated with their computer experience (Beckers & Schmidt, 2003). Others who own or have used computers at home

report less computer anxiety than others who don't (Chu & Spires, 1991; Hayek & Stephens, 1989). According to Chu and Spires (1991), college students who had taken two or more computer courses reported lower levels of anxiety related to computers than those who had taken fewer than two courses. Students who had previously reported significant computer anxiety saw a significant reduction in anxiety following a computer course (Chu & Spires, 1991; Leso & Peck, 1992). In other words, EFL students may not be sufficiently familiar with the technology necessary to participate in virtual classrooms. They may be unfamiliar with the software and technical tools used, leading to anxiety about their ability to interact successfully in this digital environment.

1.8.2.2. Problems of Interaction

In online learning contexts, interaction problems such as language obstacles, technological difficulties, and social anxiety can all lead to tech-anxiety among EFLlearners.First, language obstacles can make it difficult to communicate and comprehend one another, which can cause anxiety about expressing oneself and doing as directed (Grant et al., 2013).Moreover, low skill levels, particularly a small vocabulary, are common problems for EFL learners and might hinder their ability to understand and communicate.

Furthermore, according to Sitzmann et al. (2010), EFL learners may feel discouraged from actively participating in online learning activities when they encounter additional challenges associated with interaction in online settings, such as issues with digital communication tools, the lack of instant feedback, the absence of non-verbal cues, accessibility issues (poor internet connection, power outages,Power etc.,).For instance, the quality of learners' interactions generated by them will be influenced by the structural, relational, and cognitive dimensions of their exchanges, whether through physical means like a classroom setting or through electronic means like in a distance learning course, where learners interact through email,

chats, or web conferences (Nahapiet & Goshal, 1998). Additionally, motivation isn't usually thought of as a direct source of tech anxiety in online learning, but it can have an indirect impact on how students interact with technology and, as a result, how anxious they feel. When it comes to how students approach and interact with online learning platforms and resources, motivation is a major factor, according to Artino (Artino2006).In short, changing the style of teaching, the method of delivery, the place, and the teaching environment negatively affects the student's performance, which makes them reject technology for academic use, which generates technological anxiety.

1.8.2.3. Gender

Gender influences students encounters with technology in profound ways and can have a variety of effects on feelings of computer anxiety. Research has shown that females experience higher levels of anxiety when using computers than do males (Broos, 2005; Schot tenbauer, Rodriguez, Glass, & Arnkoff, 2004). Females generally have more negative perceptions of computers because the two genders usually receive various messages about their relationship with technology from early socialization; guys are typically encouraged to use computers from an early age, while girls may be directed toward other hobbies (Whitely, 1997). This difference in early exposure can have an impact on a person's future comfort level and level of confidence when using technology. Furthermore, since boys are typically viewed as being more skilled in technical subjects, gender stereotypes may influence how EFL learners view their own competence in technology-related tasks (Schumacher & Morahan-Martin 2001).

1.9. The Effects of Tech- Anxiety on EFL Learners

Learners of English as a Foreign Language (EFL) in online learning contexts may be greatly impacted by tech anxiety. First of all, it makes students less confident in their capacity to use digital tools and platforms efficiently. This insecurity may cause students to interact with course materials and online activities less frequently (Chou, 2001). Additionally, technology anxiety can impede students' capacity to communicate effectively, especially when speaking, making it more difficult for them to express themselves clearly and speak confidently with peers and teachers. Students' general well-being and mental health may be impacted by the tension and anxiety that come with technology-related difficulties, which can also cause higher levels of stress, hostility, hostileand frustration, or concern about coming across as foolish. Furthermore, access to learning tools may be restricted due to tech anxiety, which inhibits students from participating completely in virtual classroom activities and from using computers, which would prevent them from ever learning the skills required to succeed in the information age we live in today. According to other writers, learners felt less confident about their computer skills (Chou, 2001) and completed basic computer tasks more slowly (Mahar et al., 1997). At the end, these consequences may have a detrimental influence on learning outcomes, impeding the advancement and language competence of EFL learners. Developing comprehensive support solutions is necessary to address tech anxiety.

1.10. Strategies to Overcome Tech-Anxiety

In todays' digital age , technology offers numerous benefits, however , it can also lead to feelings of anxiety and overwhelm. To overcome these feelings, it is essential to develop strategies that help manage and reduce tech-anxiety. Here are some effective strategies :

1.10.1. Increased Exposure to Computers

Tech anxiety needs a range of psychological and practical techniques to help students overcome this phenomenon and feel more comfortable and confident. According to Phelps and Ellis (2002), for many students, computer fear is still a major problem. The use of computers in postsecondary education will continue to cause serious problems for students as long as there are anxious learners. Studies have shown, however, that rather than "curing," greater exposure might make computer anxiety worse by bolstering negative emotional responses and encouraging further eradication of computers. Getting students to confront their preconceptions, concerns, and beliefs while also assisting them in creating coping mechanisms is one way to fight technology anxiety. Therefore, students must be exposed to the computer more by doing their homework through it, and it must be remembered that repeated failures are part of the normal process (Baumgarte, 1984).

1.10.2. Computer Self-Efficacy

Self-efficacy is another helpful strategy for overcoming computer anxiety. According to Bandura (1997), self-efficacy is defined as students assessments of their capacity to plan and carry out the actions necessary to achieve specific performance e goals. It is not about what talents a person has, but rather what they can do with the skills they do have. Accordingly, computer self-efficacy is the confidence that one can operate a computer (Compeau & Higgins, 1995). As was previously noted, when students use these technologies, there is a correlation between computer-related stress and computer self-efficacy, which is defined as the belief in one's skills to successfully complete a task linked to computers. Self-efficacy affects people's stress and anxiety levels, as well as their mental processes and emotional responses (Bandura, 1997). According to studies, students who feel confident in their ability to operate a computer are more likely to use one and experience less computer anxiety (Compeau & Higgins, 1995; Fagan, Neill, & Woodridge, 2003). In other words, students who

have higher levels of computer self-efficacy than those who have lower levels will find it easier to adjust to changes and advancements in computer technology since low self-efficacy can lead to resistance in one's ability to operate, while high self-efficacy can promote learning new skills.

In order to increase computer self-efficacy, ICT is considered the best solution. It is defined as a wide range of technological tools and resources for transmitting, storing, creating, sharing, and exchanging information (American Psychological Association). ICT is included in education as a subject that teaches students how to store and disseminate information using computers and other technology. It may dramatically increase computer self-efficacy by providing EFL students with numerous opportunities to learn and improve their technology skills. As users interact with numerous ICT tools and apps, they develop hands-on experience and proficiency, increasing their confidence in their abilities (Rogers & Twidle, 2013). Simply put, ICT fosters a sense of proficiency and confidence, resulting in higher computer self-efficacy because pedagogical training aims to promote good attitudes toward computers.

1.10.3. Determine Tech-Anxiety Type

It is very important for EFL students to determine the type of technological anxiety they suffer from in order to know the most appropriate solutions. As discussed before, technology anxiety can be a trait or state. If it is a trait, it may include long-term interventions aimed at changing basic attitudes and behaviors, but if it is a state, it is considered a temporary and circumstantial feeling (Harrington, McElroy, & Morrow, 1990). A solution can be found depending on the problem the student faces. For example, the student may suffer from technological anxiety due to a lack of experience (Beckers and Schmidt, 2001). As a more appropriate solution, the student should have more exposure to technological tools. Moreover,

focusing on the psychological aspect contributes to reducing technological anxiety through relaxation exercises (as cited in Bloom, 1985).

To put it simply, students who feel comfortable using computers can have less anxiety when utilizing technology. Furthermore, create a supportive environment where students feel at ease asking for help and voicing their concerns. Promote teamwork and peer assistance to exchange insights and techniques.

1.10.4. Provide Support and a Positive Environment

Creating a good environment is critical for reducing tech anxiety among EFL learners participating in online learning. Such an environment fosters a sense of safety and inclusion, putting students at ease when interacting with new technologies (Ben-Jacob & Liebman, 2009). Learners are more likely to ask questions and seek help in a helpful and encouraging environment because they are less afraid of being judged. This open channel of communication enables technological concerns to be fixed quickly, reducing anxiety.

Furthermore, positive reinforcement, such as acknowledgment of efforts, boosts learners' confidence and motivation. Motivation is considered one of the most important factors that students must have, especially in distance learning, since it influences what, how, and when we decide to study (Schunk & Usher, 2012). According to Ryan and Deci (2000), motivated learners are more likely to take on difficult tasks, be actively involved, value and adopt a deep approach to learning, and demonstrate superior performance, tenacity, and originality. In other words, there is a mutual relationship between motivation and a positive environment, as both influence each other.

Conclusion

In this chapter, numerous themes connected to anxiety in the EFL classroom are reviewed. It explores the definitions, types, causes, and effects of anxiety in addition to its theories. Also, a full background on the phenomenon of tech anxiety throughout the learning process, which has been thoroughly explored by various researchers, is highlighted. Furthermore, the necessity of recognizing the factors that lead to tech anxiety in an EFL setting, such as lack of experience, gender, and problems of interaction, is mentioned. Finally, we suggest many strategies to overcome or at least reduce anxiety while using the computer.

Chapter two

Online Learning

Introduction

The development of online learning has revolutionized the domain of education, particularly in the context of English as a Foreign Language (EFL) education. The importance of online learning lies in its ability to enable physical boundaries and provide access to education remotely. The use of online learning has become crucial for the continuation of education, especially during the COVID-19 pandemic. Online learning has transformed education by providing students all over the world with flexibility and accessibility. It includes a wide range of instructional activities delivered via digital media, such as online classes, presentations, video tutorials, and lectures.

This chapter sets the stage for exploring and understanding online learning, its evolution, the various models and pedagogical approaches to online education, as well as the different technologies and tools used during online learning, to measure the contributing factors that affect online learning, assess the various benefits and drawbacks of online learning, and finally assess the technology anxiety impact on online learning.

2.1.History and Online Learning Definition

Online learning, or e-learning, is a type of education that uses the internet to create a completely virtual environment (Smith, 2018). In its broadest sense, online learning uses electronic technology connected to the Internet to engage students and make learning easier. In higher education, online learning is common and prevalent. It provides a wide range of programs and a personalized learning experience by enabling students from various locations to engage with academic schools, universities, and other students online (Adams et al., 2022).

A diversified online learning environment can be created using a variety of Internet tools. Throughout the course of a 24-hour day, there are numerous possibilities for cooperation, engagement, and communication in such a complex environment with teachers, students, and content experts from all over the world (Top Hat, 2020). Numerous technologies, such as text, video, audio, and multi-media presentations that can take place synchronously or asynchronously, are available to support these opportunities. Learning communities are a common feature of online learning, where students interact with instructors and other students (Sunal & Wright, 2012). Virtual lectures, documents, assignments, and interactive eLearning content experiences are just a few examples of the digital tools and content that are included in online learning (Garcia, 2020).

2.2. Related Terminology

The field of online learning includes other related concepts that differ due to the technological tools used, like digital learning, remote learning, distance learning, and virtual learning.

2.2.1. Digital Learning

Digital learning is an educational approach that empowers technology to provide students with control over the timing, location, direction, and speed of their learning. It makes use of technology to deliver content, providing a wide variety of interactive tools and digital resources that adjust to different learning styles, resulting in a more engaging and personalized learning experience. Digital content, which represents the academic material; technology, which serves as the delivery mechanism; and teaching, which highlights the critical role that educators play in guiding and assisting students, are the three fundamental components of digital learning (Bates, 2015). This method has completely changed education

by providing a wide range of pedagogical strategies that smoothly incorporate technology into the classroom, like flipped learning, blended learning, and personalized learning. It has also been expedited by the global pandemic, underscoring its importance in facilitating ongoing education in unprecedented situations and encouraging creative teaching approaches that transcend geographical boundaries (Garrison, 2008).

2.2.2. Remote Learning

According to Albert (2024), remote learning is an instructional strategy that uses technology like discussion boards, videoconferencing, and online examinations to help students interact with course materials and teachers without physically being present in a typical classroom. It allows for more personalization because students may work at their own pace and go back over content as needed. It also provides flexibility by letting students access educational resources and finish projects on their own time. In circumstances where regular classroom attendance may be disrupted, remote learning guarantees the continuation of education. It also supports students with a range of abilities by offering assistive technologies. To ensure successful implementation, remote learning necessitates careful planning, effective lesson design, and a strong technological infrastructure (Means et al., 2014).

2.2.3. Distance Learning

According to Moore & Kearsley (2012), distance learning is a teaching methodology that involves using online resources, videoconferencing, virtual classrooms, and examinations to allow students to interact with instructors and course material from a distance. It provides students with affordability, flexibility, and ease of access to learning materials, so they can finish assignments on their own time. Asynchronous distance learning allows students to study at their own speed, while synchronous learning involves real-time interaction (Allen &

Seaman, 2017). With the development of high-speed networks and worldwide educational access, this strategy has gained popularity and is now an essential part of contemporary education, enabling students to pursue online courses and degrees from any location at any time (Dron, 2011).

2.2.4. Virtual Learning

Virtual learning refers to a virtual environment created through the use of an online network, and it can include teaching and learning virtually through the use of different technological tools and resources. With this method of instruction, students can participate in educational activities, communicate with peers and teachers, and access coursework from any location with internet access (Smith, 2020). To duplicate the traditional classroom experience in a digital space, virtual learning frequently makes use of learning management systems (LMS), videoconferencing tools, and virtual simulations (Jones & Brown, 2021).

2.3. The Historical Evolution of Online Learning

The practice of teaching using the internet and related resources is known as online learning. It has roots in historical learning theories and models, such as those by early philosophers like Socrates and psychologists like Piaget (Smith & Johnson, 2020). The history of online learning traces back to the 1960s, marked by the emergence of systems like PLATO (Programmed Logic for Automatic Teaching Operations) and the concept of computer-based education networks pioneered by Ivan Illich (Brown et al., 2019). The evolution of learning management systems (LMS) has played an important role, with platforms like WebCT and Blackboard laying the foundation for modern systems like Moodle and Canvas (Patel & Sharma, 2020).

2.3.1. Early Developments in Distance Education

Since its beginning in the 18th century, distance education has grown and changed as a result of several technical achievements. Communication courses were common initially; Caleb Phillipps recorded the first instance in 1728 (Smith & Johnson, 2020). By 1922, educational radio broadcasts had been introduced, and by 1953, college lectures had been televised as part of the ongoing revolution (Brown et al., 2019).

In 1965, the University of Wisconsin became the first institution to offer phone-based learning (Patel & Sharma, 2020). By 1968, the University of Nebraska-Lincoln provided certified high school certificates via online learning (Smith & Johnson, 2020). Operating without physical school grounds, Community College pioneered the idea of a "virtual college" in 1976 (Brown et al., 2019). Due to the fact that millions of students worldwide are taking online courses today, online education has become the norm, highlighting the important role of technology in changing the way that education is delivered (Patel & Sharma, 2020).

2.3.2. Emergence of Computer-Mediated Instruction

With its alternative teaching architectures that use technology to promote involvement and collaboration, computer-mediated instruction has become a transformative technique in education (Berge & Collins, 1995; Coombs, 1993; D'Souza, 1992). Based on behaviorism, this teaching approach has developed to include electronic messaging, synchronous and asynchronous conferencing, and other types of computer-mediated communication (CMC) (Rasch, 1997). Experience with CMC systems and social influence have affected the integration of computer-mediated learning environments, which highlights the importance of understanding and putting into practice effective teaching techniques for these virtual classrooms (Ibrahim et al., 2023). The effective use of computer-mediated instruction

continues to be a major area of focus for improving learning outcomes and student engagement as technology continues to shape educational practices.

2.3.3. Learning Management Systems Evolution

The development of learning management systems (LMS) started in the early 1920s with the teaching machine and continued through a number of important educational technology turning points (My Learning Hub, 2023; Ohio State University, n.d.; Training Industry, n.d.). LMSs have developed into complex platforms that provide personalized learning experiences, course management, collaboration, and assessment. Originally designed for instructor-led and self-paced training, they have grown (My Learning Hub, 2023; Training Industry, n.d.). Education has faced a transformation with the move to digital course delivery and the incorporation of technology, shedding light on the importance of learning management systems (LMS) in modern learning environments (Ohio State University, n.d.; Training Industry, n.d.). Accessibility, functionality, and user experience have all advanced along the Learning Content Management System (LCMS) in shaping the view of education and training (My Learning Hub, 2023; Training Industry, n.d.).

2.4. Forms of Online Learning

Over time, a variety of pedagogical approaches have shaped the landscape of digital education, leading to a considerable evolution in online learning. These are the main pedagogical approaches used in online education:

2.4.1. Asynchronous Learning

Asynchronous learning is a form of education in which students interact with the content of the course at various times and locations, not simultaneously. It involves students using

course materials like books and recorded lectures and having independent online conversations and real-time interactions with classmates and teachers (Videhi Bhamidi, 2022). Asynchronous learning fosters independence and self-discipline by allowing students to With this method, students with different schedules or time limitations can interact with the material at the most convenient time for their unique learning preferences and styles. Without the limitations of in-person communication, students can study the material more than once, consider it, and take part in conversations. Asynchronous learning encourages independence, self-control, and time management in students, making the learning process more individualized and flexible (Fourie 2010).

2.4.2. Synchronous Learning

On the other hand, synchronous learning refers to pedagogical activities where teachers and students participate in real time (without always being in the same place). It involves live sessions that promote immediate interaction and community building, videoconferences, and chat-based discussions. While synchronous learning necessitates planning, it also facilitates social contact and quick information sharing, improving student collaboration, and providing conceptual clarification (Videhi Bhamidi, 2022).

Synchronized learning promotes collaboration, teamwork, and quick feedback by allowing students and instructors to communicate in real-time (Roddy et al., 2017). Academics such as Majumdar (2000) highlighted the structured aspect of synchronous sessions, which encourages learners to actively participate, be socially present, feel more motivated, and have a sense of community. Synchronous learning provides a dynamic and engaging learning environment while promoting teamwork and relationship-building through real-time involvement.

2.4.3. Online Learning and Blended Learning

Blended learning models refer to a range of strategies that combine traditional classroom instruction with online learning to improve student outcomes. These models include flipped classrooms, guided lab time, and integrated lab time. Every model has its benefits, promoting a mix of online and face-to-face interactions.

2.4.3.1. The Model of Flipped Classroom

A teaching strategy known as "flipped classroom" involves distributing instructional content—often in the form of video lectures—outside of the classroom, flipping the usual learning environment (Alison King, 1993).

The flipped classroom model, as proposed by Bergmann and Sams (2012), blends asynchronous pre-learning with synchronous interactive sessions. With this method, students can work through the materials at their own speed. Students who have pre-learned the material are more prepared to participate in class discussions, ask questions, and engage fully with the information.

The flipped classroom approach changes the focus from passive information reception to active engagement and application of knowledge, which fosters student-centered learning, critical thinking, and problem-solving abilities (Bergman and Sams, 2012).

2.4.3.2. Guided Lab Time

Garrison and Kanuka have explored guided lab time, where faculty provide guidance, direction, criticism, and structured support and feedback during practical tasks or projects (Garrison & Kanuka, n.d.). This model allows the application and practical practice of theoretical ideas in a supervised environment. Guided lab time guarantees that students

receive individualized attention and help from instructors as needed, while also encouraging skill development, teamwork, and peer learning.

2.4.3.3. Integrated Lab Time

Integrated lab time, as discussed by Garrison and Kanuka, combines synchronous and asynchronous activities with clear points and deliverables for each session (Garrison & Kanuka, n.d.). With this model, students can interact with course materials, finish assignments, and work together on projects both inside and outside of the classroom. It combines real-time interactions with self-paced learning.

Integrated lab time encourages a balanced approach to education by providing students with the flexibility of online resources and planned, interactive sessions that improve information comprehension, retention, and application (Garrison & Kanuka, n.d.).

2.5. Online Learning in The Flipped Classroom

The flipped classroom approach, which Tucker (2012) supports, This online learning approach flips traditional teaching methods by using pre-recorded video, readings, or lectures to provide direct education outside of the classroom. Students then actively participate in interactive exercises, discussions, problem-solving tasks, or projects during synchronous class sessions. By flipping the conventional model, educators may maximize in-person time for collaborative learning, concept application, and higher-order thinking skills.

Through the promotion of active learning, peer collaboration, and the real-world application of knowledge, the flipped classroom model increases student engagement, participation, and a deeper understanding of the course material. This method creates a more dynamic and interesting learning environment by empowering students to take ownership of

their learning, improve their critical thinking abilities, and apply theoretical ideas to real-world situations (Smith, 2017)..

2.5.1. Inquiry-Based Learning and Project-Based Learning

Project-Based Learning (PBL) and inquiry-based learning are two well-known student-centeredmethods for their effectiveness in fostering critical thinking, creativity, communication, and teamwork skills.

2.5.2. Project-Based Learning

A student-centered method known as "project-based learning" (PBL), where students work in groups to solve real-world problems, drives motivation and learning. Wells (2016) and Baron and Daniel-Allegro (2019) have highlighted the benefits of PBL in fostering critical thinking, creativity, communication, and teamwork skills.

This approach engages students in authentic (real-word) tasks that demand the use of knowledge and abilities. Students that participate in project-based learning explore complicated problems and come up with creative solutions while developing their research, problem-solving, and project management skills. PBL fosters a deeper understanding of concepts and increases students motivation and engagement in the learning process by encouraging active participation, self-directed learning, and reflection (Baron & Daniel-Allegro, 2019).

2.5.3. Inquiry-Based Learning

Inquiry-based Learning has been described in a variety of forms and contexts (Dewey, 1997), an educational strategy known as centers on problem-solving, research, and exploration through questioning, investigating, and discovering. In online environments,

inquiry-based learning promotes students' active participation in the course material, independent investigation, information analysis, and conclusion-making. Through inquiry and experimentation, students are empowered to explore topics of interest, formulate hypotheses, and discover solutions, thus developing critical thinking, information literacy, and self-directed learning abilities. By empowering students to take charge of their education and apply what they have learned to real-world contexts (Baron and Daniel-Allegro, 2019),.

2.6. Traditional Online Learning Vs Personalized Learning

Self-directed learning that allows students to take control of their educational path and personalized instruction to individual requirements and preferences.

Traditional learning includes people taking care of their own learning needs by themselves (Knowles, 1975); it gives students the freedom, autonomy, and time management to take control of their educational path. In order to promote intrinsic motivation and responsibility, Majumdar (1999) and Majumdar (2000) emphasize the significance of self-directed learning in online environments.

Traditional learning gives students the power to take control of their educational journey by teaching them how to create goals, manage their time, and be self-directed. Self-directed learners can interact with course materials, assignments, and activities whenever and wherever they choose in online learning settings. Majumdar (1999) and Majumdar (2000) highlighted the importance of self-directed learning in online environments, encouraging autonomy, responsibility, and intrinsic motivation.

This approach enables students to follow their passions, learn about new subjects, and improve their self-control. Through helping students feel that they are part of the process of learning, self-directed learning encourages independent thought and problem-solving skills.

Self-directed learners gain resilience, growth mindset, and self-efficacy, which improve their capacity to adjust to new situations (Majumdar, 2000).

Personalized learning is an educational approach that customizes the learning experience for each student based on their unique skills, abilities, preferences, background, and experiences (Bray, 2015).

As discussed by Majumdar (1999), personalized learning creates a customized educational experience that encourages engagement, relevance, and success by adapting instruction to each student's unique requirements, preferences, and learning styles. Personalized learning in online learning makes use of data analytics, adaptive technologies, and different instructions to give each individual student resources, feedback, and targeted support according to their individual strengths, needs, and preferences. With the use of this strategy, teachers can create lessons that meet the needs of students with different learning styles, interests, and skill levels, leading to a more productive and inclusive learning environment.

With the support of personalized learning, students may go at their own speed, get customized feedback, and use resources that support their learning objectives. This increases their motivation and academic success.

2.5. Online Learning Tools and Platforms

Online learning is facilitated by a variety of technologies and tools that can help teachers and students teach, learn, and communicate.

2.8. Learning Management Systems

A knowledge management system called a learning management system (LMS) makes use of computers and the internet to provide educational resources and promote learning. Higher

Education Institutions (HEI) employ LMS extensively to support and improve instructional initiatives.

A learning management system (LMS) is a knowledge management system that utilizes computers and the internet to deliver educational materials and facilitate learning. LMSs are widely used in higher education institutes (HEI) to support and enhance educational efforts, integrating traditional forms of learning into distance learning and providing innovative tools to transform the conventional learning landscape (Bates, 2005; Paulsen, 2003). Learning Management Systems (LMS) provide a comprehensive platform for managing courses, delivering information, and fostering student participation. As such, LMSs are the foundation of online education. According to Smith and Johnson (2020), learning management systems (LMS) such as Moodle play a critical role in offering a central location for managing course materials, watching student progress, and enabling smooth communication between teachers and students. This central method encourages an organized learning environment, improves teamwork, and facilitates the learning process.

Additionally, Brown et al. (2019) show how interactive features like discussion boards, quizzes, and multimedia material integration improve student engagement on LMS platforms like Canvas, creating a vibrant and cooperative online learning environment.

. Moodle Platform

The Moodle platform is known as an open-source learning platform. It is a widely used learning management system (LMS), which stands for Modular Object-Oriented Dynamic Learning Environment. It facilitates the creation, administration, and delivery of online courses while promoting individual and cooperative learning environments for teachers, administrators, and students (Dougiamas & Taylor, 2003; Moodle, 2023; Paulsen, 2003).

The Moodle platform is well-known for its adaptability, easy-to-use interface, and strong features that meet the many demands of online education. According to Smith and Johnson (2020), Moodle's open-source design enables significant personalization to fit a variety of educational environments, from large-scale installations to small-scale courses, guaranteeing a customized learning experience for teachers and students.

According to Brown et al. (2019), Moodle provides strong multimedia capabilities that enable the creation of interesting learning materials that improve student engagement and comprehension by supporting a variety of content forms, including photos, audio files, and videos. Furthermore, Patel and Sharma (2020) point out that Moodle offers a variety of assessment tools, such as interactive exercises and quizzes, that make it possible to evaluate student progress effectively and provide feedback on time.

Wang and Liu (2019) argued that Moodle is surrounded by a vibrant and helpful community of educators, developers, and users who all contribute to platform development and ensure that updates are focused on the needs of users. Moodle's ability to adapt to the changing demands of online education is facilitated by its collaborative environment, which makes it a dynamic and adaptable platform for providing high-quality online learning opportunities.

2.9. Video Conferencing and Virtual Classroom Platforms

Video conferencing platforms and virtual classroom platforms are both online tools used for remote learning and communication, but they have distinct features and purposes (Munna, 2020). Because they allow for real-time communication, cooperation, and involvement between students and teachers, video conferencing and virtual classroom platforms have completely changed the face of online education. According to Lee and Kim (2021),

platforms like Zoom are essential for synchronous communication, online learning, and group debates. They also foster a sense of community and increase student engagement in online learning. Furthermore, Chen et al. (2018) talk about how programs like Microsoft Teams offer a smooth online setting for interactive instruction, screen sharing, and breakout spaces, encouraging students to actively participate, share their knowledge, and work together to learn. These platforms bridge the physical distance in online education, enabling meaningful interactions and fostering a sense of connection among participants.

. Google Meet

Google Meet is a powerful video conferencing tool designed for use in business and educational environments. It provides an easy-to-use platform for setting up and organizing video meetings and enables users to invite participants from their Gmail contacts and other organizations. Google Meet, which was introduced in 2017, is notable for its excellent audio and video quality, which guarantees good communication even in meetings with several participants (Matthews-El, 2024).

Advanced features that improve collaboration and organization in virtual meetings include screen sharing, muting, pinning certain members, and the option to record sessions for later use. Google Meet is available through web browsers and mobile apps for iOS and Android smartphones. It places an emphasis on user comfort and flexibility across many platforms (Matthews-El, 2024).

Google's business-oriented equivalents seamlessly integrate Google Meet with Google Workspace resources, like Google Calendar and Gmail, streamline processes, and boost productivity. Notable premium features include longer meeting times, more participant capacity, and sophisticated features like live streaming and noise cancellation, meeting the

varied needs of companies and organizations looking for effective virtual communication solutions in the current digital environment (Matthews-El, 2024).

2.9.1. Content Creation and Distribution Tools

In order to create dynamic and interesting online course materials that fit a variety of learning preferences, content creation and delivery distribution tools are very essential. Wang and Liu (2019) emphasized the value of tools such as Camtasia Software in letting teachers produce multimedia-rich lessons that include animations, interactive tests, and videos, all of which improve student understanding and engagement.

Furthermore, Patel and Sharma (2020) stressed the value of using programs like Adobe Captivate to create flexible e-learning modules that adapt to different devices, guaranteeing accessibility and interest for a variety of students. With the use of these tools, teachers may provide engaging and dynamic information that engages students and makes for a more effective and productive online learning environment.

2.9.2. Collaboration and Communication Tools

Collaborative and communication tools are software applications and platforms that enable teams to communicate, collaborate, and work together effectively without considering their physical location (Saleem et al., 2021). In online learning environments, teamwork, discussion, and knowledge sharing are fostered through the use of collaboration and communication tools. According to Jones et al. (2017), Slack and similar applications are beneficial for encouraging students to collaborate on projects, share files, and communicate in real time, as well as for group work and peer interaction.

Furthermore, Smith and Brown (2018) talk about how platforms like Google Docs improve group writing and editing, allowing students to collaborate on assignments, give feedback, and participate in peer review activities without difficulty. In virtual learning environments, these tools support collaborative learning, effective communication, and active engagement.

2.9.3. Assessment and Feedback Systems

Systems for feedback and assessment are integral components of the teaching and learning process that work together to evaluate student learning, provide direction for development, and improve overall academic results. They are essential for evaluating student progress, giving timely feedback, and improving learning outcomes in online courses. According to Li and Wang (2020), tools such as Turnitin (an plagiarism detection program) are crucial for preserving academic integrity since they can detect plagiarism, guarantee that student work is unique, and follow moral principles when administering online tests.

Kim et al. (2019) also emphasized how interactive quizzes, formative assessments, and quick feedback may effectively engage students in virtual classrooms and support active learning and information retention. This is demonstrated by the efficacy of platforms such as Kahoot (a game-based learning platform). These systems do more than just evaluate student performance; they also give teachers insightful data that helps them modify their methods and better assist students' learning.

2.10. Factors Influencing Online Learning

Online learning becomes a relevant form of education, but it is influenced by a set of factors that may affect students during learning, such as technology access, digital literacy,

student engagement, and technology anxiety. Addressing these challenges can help ensure a high-quality and fair learning experience for all students.

2.10.1. Access to Technology and Internet Connectivity

One of the biggest challenges to online learning is access to technology and internet connectivity. Students from low-income or rural areas often struggle to access reliable devices and high-speed internet (Brown, 2020; Means et al., 2013; Pardo & Kloos, 2019; Zhao et al., 2020). Technical problems like internet speed and compatibility with devices might disrupt the learning process even when students have access to the necessary technology (Means et al., 2013; Pardo & Kloos, 2019; Zhao et al., 2020).

In order to address these challenges, educational institutions can collaborate with ISPs (Internet service providers) to offer students expensive internet plans, provide devices to students who cannot afford them, and ensure that online learning platforms work with various devices and operating systems (Brown, 2020; Pardo & Kloos, 2019; Zhao et al., 2020). Teachers should also provide offline options for students with limited access to technology, like printed materials or DVDs, as well as technical support to help them solve connectivity problems (Means et al., 2013; Pardo & Kloos, 2019; Zhao et al., 2020).

2.10.2. Digital Literacy and Technology Competence

Even though digital literacy and technological competence are necessary for effective online learning, they can be very difficult for some students to acquire (Pardo & Klos, 2019; Zhao et al., 2020). Technological competence is the capacity to apply technology to solve problems and complete tasks; digital literacy is the ability to use digital technology, communication tools, or networks appropriately and successfully (Pardo & Kloos, 2019).

Ineffective time management, poor communication, delayed feedback, unclear instructions or expectations, and other issues might result from a lack of digital literacy and technological competence (Pardo & Kloos, 2019; Zhao et al., 2020). Institutions and schools need to make sure that students have access to the necessary technological tools and offer help in order to address these challenges (Pardo & Kloos, 2019; Zhao et al., 2020). Students can feel more connected and supported in their online learning journey by having access to comprehensive guides and tutorials on using online learning platforms, student mental health services, and social engagement possibilities via live videoconferencing sessions, online discussion boards, and virtual study groups (Pardo & Kloos, 2019; Zhao et al., 2020).

2.10.3. Student Engagement and Participation

Due to the lack of face-to-face interaction, access to technology, distractions, and time management concerns, it can be challenging to maintain student engagement and participation in online learning (Hurix Digital, 2023; NTI Now, 2024; Thinkific, 2024). In order to address these challenges, educational institutions and instructors should offer comprehensive guides and tutorials on how to use online learning platforms, student mental health services, and social engagement possibilities via live videoconferencing sessions, online discussion boards, and virtual study groups (Hurix Digital, 2023; NTI Now, 2024; Thinkific, 2024). These actions can help students' engagement and participation in their online learning experience by making them feel more connected and supported.

2.10.4. Technology Anxiety

The term "tech anxiety," which is also referred to as "technology anxiety," describes the uneasiness, fear, or apprehension that individuals feel when using technology, especially in online learning environments (Phanphech et al., 2022). Concerns regarding the use of

technology, a lack of computer literacy, and the requirement for in-person connection and social communication with professors and faculty in online learning environments are characteristics of this phenomenon (Abdelhamed et al., 2022). Because of their inability to interact with course materials and take part in online discussions, tech anxiety can have a major negative influence on students' conceptual understanding.

The apparent necessity for technical proficiency, connectivity problems, and the absence of visual contact in online courses are some of the factors that lead to tech anxiety. It is imperative that educators recognize and manage tech anxiety since it can influence instructional design and contribute to the development of a more encouraging online learning environment (Kinoshita et al., 2022).

2.11. Advantages and Disadvantages of Online Learning

Online learning has become increasingly popular in recent years, offering students many assets compared to traditional classroom-based education. However, like any educational approach, online learning has its own set of advantages and disadvantages that should be carefully considered.

2.10.1. Advantages of Online Learning

Online learning offers several key benefits:

2.10.1.1. Accessibility and Flexibility

Students are able to attend classes at times that suit their schedule and access course materials from everywhere with an internet connection when they learn online. This flexibility helps students balance their academic endeavors with other aspects of their lives, which is especially helpful for those who have other responsibilities, including work or family duties.

Students can select when and where to interact with the course material through online learning, which offers a personalized approach that caters to individual preferences and makes for a more flexible and interesting learning environment (Njenga & Fourie, 2010; Roddy et al., 2017).

2.10.1.2. Cost-effectiveness

Since online learning does not require travel, lodging, or physical facilities, it is typically less expensive than traditional classroom-based instruction. Online learning eliminates these costs, increasing the accessibility of high-quality education for a larger group of students, including those from remote locations or varied socioeconomic backgrounds. Due to financial limitations, some individuals may not have had access to education previously, but this cost-effectiveness can provide educational chances for them, fostering fairness and inclusivity in the educational system (Njenga & Fourie, 2010; Roddy et al., 2017).

2.10.1.3. Personalized Learning

Students can advance at their own pace by customizing online learning platforms to suit their own learning styles and approaches. Students can maximize their learning outcomes and gain a deeper understanding of the course material by adjusting to their preferred learning methods and dedicating time to the subjects they find most difficult. Moreover, personalized learning enables students to go back over content as needed, strengthening their understanding and guaranteeing a deeper comprehension of the subject (Majumdar, 1999; Majumdar, 2000).

2.10.1.4. Improved Attendance

Due to scheduling or location-related issues, students are less likely to miss courses when taking classes online. Because of the increased attendance rate, students can actively

participate in classes without being worried about barriers such as transportation or other concerns. This guarantees a more constant and continuous learning experience. Online learning fosters a more inclusive and equitable learning environment by lowering absenteeism and giving students the opportunity to participate in class discussions and communicate with instructors and peers (Roddy et al., 2017; Majumdar, 2000).

2.10.1.5. Reduced Environmental Impact

Online education supports a paperless environment, encouraging sustainability efforts. Online learning minimizes the environmental impact of traditional educational methods by eliminating the need for physical printouts, textbooks, and other paper-based materials. The transition to digital resources is advantageous for the environment as well as for course materials' accessibility and portability, since it allows students to share and access them electronically without being limited by physical storage or transportation needs (Njenga & Fourie, 2010; Majumdar, 1999).

2.10.2. Disadvantages of Online Learning

Despite its advantages, online learning faces several drawbacks:

2.10.2.1. Lack of Motivation and Discipline

Some students may find it difficult to maintain their discipline and strong sense of self-motivation when studying online. Some students can find it difficult to stay motivated and disciplined in the absence of the structure and responsibility that traditional classroom environments provide. This could result in procrastination, missing deadlines, or a lack of interest in the course subject. Since online learning is autonomous, it requires a high degree of intrinsic motivation and self-regulation, which may not be natural to all students. This could

impede their performance and advancement in the classroom (Roddy et al., 2017; Majumdar, 2000).

2.10.2.2. Distractions

The home environment can be filled with distractions, making it difficult for students to concentrate on online lectures. Social media, family, pets, and other domestic activities are just a few examples of the things that can quickly draw a student's focus away from their studies and hinder their ability to participate completely in the course material. For some students, staying focused and concentrated in a home environment that is usually connected to leisure and relaxation can be quite difficult, which may have an impact on their academic performance in general and their learning objectives in particular (Njenga & Fourie, 2010; Majumdar, 1999).

2.10.2.3. Technical Issues

Learning can be disrupted by reliance on technology and internet connectivity if technical issues develop. Older technology or unreliable internet access might cause annoyance, missed lessons, or the inability to access necessary course materials, which can impede learning and perhaps have an impact on academic achievement. Technical issues can also make it harder for students to collaborate and communicate with peers and instructors, which isolates them and makes it more difficult for them to ask for help or participate in interactive learning activities (Njenga & Fourie, 2010; Majumdar, 1999).

2.10.2.4. Feelings of Isolation

The absence of in-person interactions with students and instructors in online learning might result in feelings of isolation. It may be difficult for students to form deep connections, ask for

help when they need it, or participate in group learning activities that promote a sense of community and shared experience when there are no in-person interactions. Isolation can have a detrimental effect on students' motivation, engagement, and general well-being. This can result in worse academic achievement and a lower level of satisfaction with the online learning environment (2024).

2.11. Tech-Anxiety on Online Learning

Computer anxiety has a major negative influence on e-learning, affecting students' motivation, self-efficacy, and engagement and eventually resulting in lower-quality learning (Smith, 2018). Online education can be less successful if students experience anxiety since it can lead to mistakes, poor concentration, and resistance to technology (Johnson & Lee, 2019). Furthermore, computer anxiety is affected by gender, personality, and cognitive style which influences learners' attitudes toward technology and e-learning tools.'' (Brown,2020,p,22) .

Research indicates that addressing anxiety is crucial for improving e-learning success, highlighting the need for additional studies on the topic's effects and practical solutions (Garcia et al., 2021). Furthermore, e-learning system adoption during the COVID-19 pandemic has been significantly influenced by technology anxiety, with instructors' usage of online platforms being positively influenced by low levels of anxiety (Chen & Wang, 2020). Efforts to reduce anxiety through training and support are important for enhancing e-learning experiences and outcomes (Kim and Jones, 2019).

Conclusion

This chapter offers a comprehensive exploration of online learning, including its definition, historical evolution, pedagogical approaches, technologies, factors, benefits and drawbacks, and the impact of technology anxiety. It sheds light on the roots of online

learning, from early distance education to modern learning management systems, as it discusses pedagogical strategies like asynchronous vs. synchronous learning and project-based learning, examines key technologies such as LMS and videoconferencing, and addresses critical issues like digital literacy and student engagement. Additionally, the chapter highlights the importance of understanding technology anxiety in the domain of online education, providing a strong foundation for comprehending the complexities and potentials of online learning.

Chapter Three
Field Investigation

Introduction

This chapter focuses on the analysis of the student's questionnaire, which is intended to gather information about the impact of EFL students' tech anxiety on online learning, as well as the causes and strategies used to overcome this phenomenon. In other words, it sheds light on students' attitudes towards the effects of tech anxiety on online learning. An interpretation of the data is supplied in order to answer the research question and either validate or invalidate the research hypothesis. The chapter concludes with a summary and analysis of the major findings drawn from the students' questionnaire.

3.2. Aims of Students' Questionnaire

The primary research instrument used to get quantitative data on students' opinions regarding how technology anxiety affects online learning is a questionnaire.

The questionnaire's goal is to gather further information about the students experiences with anxiety related to the use of technology in online e learning environment. Additionally, it aims at exploring the contributing factors to tech anxiety among these students. It also intends to assess how technology anxiety affects students' overall learning experience. Moreover, the ultimate goal was to investigate students' perceptions and attitudes regarding the impact of technology anxiety on their online learning experiences.

3.1.2. Population of the Study

The participants selected are third-year students at the department of English, University of Mai 1945, Guelma, enrolled for the academic year 2023-2024. The objective is to acquire a deeper understanding of the perspectives and attitudes of learners who experienced tech anxiety during their online courses. Third-year students are selected because they are more aware of and familiar with the use of technology in online learning compared to first- and second-year students. Therefore, they are expected to have an opinion about tech anxiety, its causes, and its impacts, whether negative or positive, on their online learning. The whole third-year population is 190 students, and 127 of them should answer the questionnaire according to the Krejcie and Morgan sampling table (as cited in Cohen et al., 2000, p. 94). Only 79 respondents answered the online questionnaire.

3.3. Description of Students' Questionnaire

The students' questionnaire opens with an introduction explaining the study's purpose, with the focus on the importance of their answers. It consists of twenty questions divided into three sections. The first section contains four questions about students' general information. The second section includes six questions about participants tech anxiety during online learning. The last section, which consists of ten questions, is about students' attitudes towards the impact of technology anxiety on online learning.

3.4. Administration of Students' Questionnaires

Google Forms was used to conduct this online survey. It was sent on Facebook, email, and in chat groups to third-year students on May 5. No more than 79 respondents provided responses to the online questionnaire.

3.2. Analysis of the Questionnaire's Data

Section One: General information

Question One: How old are you ?

Table 3.1

Students' Age

Option	Number	Percentage
20 years	20	26.7 %
21 years	23	30.7%
22 years	18	24%
+ 22 years	14	18.6%
Total	75	100%

Table 3.1 shows the age range of the students, which ranges between 20 and more than 22 years old. The majority represented 30.7% of the students, meaning 23 students are 21 years old, which is the normal age of third-year students. Besides, 26.7% of the total proportion are 20 years old. This discrepancy between the two could be traced back to an Algerian policy that stated that students in primary schools would begin their studies at age five rather than six. This means that students enter university at the age of 18 or 19 years old. Furthermore, we can see that 24% of pupils are 22 years old. As a result, the older members of the sample, who are 23 years of age and older, make up the minority. This implies that they faced academic failure for at least two or possibly three years, and anxiety may be the most important factor in this failure.

Question Two: What is your gender?

Table 3.2

Students' Gender

Options	Number	Percentage
Female	60	75.9%
Male	19	24.1%
Total	79	100%

According to the results mentioned above, the majority (75.9%) of the participants are female, while 24.1% are male. This demonstrates that female participants comprise the majority of the participants, while male participants make up the minority. This suggests that, in comparison to males, females are more interested in learning foreign languages, and they experience anxiety when using technology in learning more than males .

Question three : Was it your choice to study English ?

Table 3.3

Students' choice of English Language Study

Option	Number	Percentage
Yes	67	84,8%
No	12	15.2 %
Total	79	100%

Based on the findings presented in Table 3.3, the majority of the students (84.8%) answered yes; English was their own choice. This indicates that they are interested in learning

English, which may reduce their feelings of anxiety. Besides, the minority of students (15,2%) answered no; English was not their choice. This implies that they are not interested in learning English, which may affect their motivation and cause them to feel anxious.

Question four: How is your level in English?

Table 3.4

Students level in English

Option	Number	Percentage
Very good	4	5.1%
Good	46	58.2%
Average	27	34.2%
Weak	2	2.5%
Very weak	0	0
Total	79	100%

According to the results showed in the table 3.4, learners' English level differs to some extent. More than a half (58.2%) stated that their level is good. (34.2%) thought that their level is average; (5.2%) of the participants admitted that they have a very good level; and (2.5%) stated that they have a weak level in English. These findings indicate that students' proficiency differs from one to another because of students' individual differences, capacities, and styles. Additionally, a significant number of them typically evaluate their level of proficiency in a language by how well or poorly they are able to comprehend it and produce it in writing or speaking.

Question five: Do you feel anxious in the classroom?

Table 3.5

Anxious feeling in the classroom

Options	Numbers	Percentage
Yes	49	62%
No	30	38%
Total	79	100%

According to the acquired results in the above table, the majority of students (62%) agreed that they felt anxious, which indicates they had experienced anxiety in the classroom. While 38% said that they do not feel anxious, which indicates that they do not experience anxiety when studying in a classroom.

Question 6: How often do you feel anxious in the classroom?

Table 3.6

Frequency of feeling anxious

Options	Numbers	Percentage
Rarely	21	27.8%
Sometimes	41	51.9%
Most of the time	15	19%
Always	2	1.3%
Total	79	100%

It is evident from the above average tabulated data that the largest proportion of students (51.9%) and those who raise their number (41) report experiencing anxiety in the classroom on occasion. This means that they sometimes feel anxious when they are learning face certain

circumstances. On the other hand, 15 students, representing 19%, declare that they face anxiety most of the time. It is possible that this is due to their lack of proficiency in dealing with anxiety and how to overcome it. Only two students represent (1.3%) who claim that they always face anxiety despite the absence struggles and barriers that cause the anxiety. This could be because they do not like this specialty (English and languages) or because anxiety is a permanent characteristic of their personality. While 21 participants (27.8%) state that their feeling of anxiety in the classroom is a rare case, this means that they are confident students and do not feel anxious or see it as a challenge that must be overcome despite the situations they face.

Question seven: Is your anxiety due to?

Table 3.7

Causes of Anxiety

Options	Numbers	Percentage
Fear of speaking English in the classroom	25	32.5%
Fear of being asked by your teacher	27	35.1%
Fear of not understanding what is said in English	16	20.8%
Fear about making mistakes in language class	36	46.8%
Feeling that your classmates speaking English better than you	14	18.2%

This question is designed to gather feedback from EFL students regarding the causes of their anxiety in the classroom. Concerning the factors causing anxiety (46.8%), they confessed that the anxiety is due to fear of making mistakes. This could be because English is not their mother tongue or their level of English is not good. Pointing out that this is the most influential factor. Whereas, (35.1%) agree with the fear of being asked questions by the

teacher. Moreover, 32.5% of respondents selected the fear of speaking English in the classroom as a main factor in causing anxiety. This reason is somewhat close to the first two, as the fear of making mistakes leads to avoiding involvement in the session, or students may have an introverted personality. Furthermore, 20.8% of the students believe that the anxiety in class stems from the fear of not understanding what is said in English. This could be due to their levels of English, or they were forced to study the English language by their families, or they had no other choices other than this specialty. With the rest of the participants making up 18.2%,, they chose the last option, which includes the feeling of EFL students that their colleagues are better than them in terms of level in the English language, and this leads to a decrease in their confidence and a feeling of anxiety because of this comparison. All these indicate that the participants face anxiety in the classroom.

Question Eight: Does utilizing technologies (smart phones, computers, the internet….) in learning cause you to feel stressed or anxious?

Table 3.8

Students' Attitudes towards the Effect of technology use in Learning on anxiety

Options	Numbers	Percentage
Yes	27	34.2%
No	52	65.8%
Total	79	100%

Table 3.8 shows that the majority of students (65.8%) expressed that they do not feel anxious when using technology in study. whereas a lower percentage (34.2%) said that they felt anxious. This means that the majority of participants have positive opinions about using technology in their academic work, as their attitudes are somewhat positive toward using technology for study. While a significant percentage struggle with anxiety.

Question Nine: If yes, what are the causes of anxiety when utilizing technology in learning?

Table 3.9

The causes of technology anxiety in learning

Options	Numbers	Percentage
You are not technology person	11	33.3%
You are reluctant to learn new features of technology	4	10%
You feel uncomfortable using technology	6	16.7%
You feel technology complicates learning	3	6.7%
You are not skillful with technology	9	26.7%
You are often annoyed when using technology	4	10%
You have physical problems from technology	6	16.7%
Technical problems makes you anxious	1	3.3%

This question aimed to discover the causes of tech anxiety in learning. According to the results presented in Table 3.9, the majority of students (33.3%) reported that they are not technology people because of a lack of experience with digital technologies, which causes anxiety and lowers confidence while utilizing technology. Additionally, 26.7 percent of the participants declare that they are not skilled with technology, which means that insufficient technical proficiency can lead to technology anxiety in EFL students because of difficulty utilizing digital platforms, which hinders efficient learning and makes them feel more frustrated than viewing them as challenges. Moreover, 16.7% of the participants selected feeling uncomfortable using technology as a factor that may contribute to tech anxiety in EFL learners by raising their fear of making mistakes, which makes them avoid it and become less involved in their study. 16.7% of students agreed that they have physical problems from technology, such as headaches, tense muscles, and fatigue, which cause discomfort and

impact their educational experience. While 10% of the informants selected that they were returning to learn new features of technology, The same proportion of students (10%) choose to be annoyed when using technology, due to the decreasing motivation to engage in and participate in online learning activities. Few students (6.7%) said that they felt that technology complicated learning. This indicates that they do not consider technology an aid to learning. The rest of the students (3.3%) said that technical problems, such as poor internet connection, are a reason for feeling tech anxiety. Some technical problems may hinder the process of using technology for study, leading to less use.

Question Ten: How do you control your technological anxiety when participating in learning activities?

Table 3.10

Strategies to reduce technological anxiety when participating in learning activities

Options	Numbers	Percentage
Enhancing your technological culture	33	43.4%
Taking ICT courses	17	22.4%
Creating supportive environ	25	32.9%
Determine the type of tech-anxiety	11	14.5%
Total	76	100%

According to the gathered data, 43.4 percent of the total chose that enhancing the technological culture is the most appropriate solution to adapt to the use of technology for academic purposes, as students are accustomed to classical studies or do not prefer using technology for the positive aspects, and this is what makes accepting the use of technology for study somewhat difficult. Meanwhile, 32.9% of the participants selected the creation of supportive environments as a good solution that can reduce technology anxiety through motivation or other factors. A relatively small percentage of students (22.4%) prefer taking

ICT courses to overcome tech anxiety, which makes them better equipped to deal with technology for study purposes. Conversely, a minority of participants (14.5%) select to determine their type of tech-anxiety as a first step to getting rid of anxiety. Knowing the type of anxiety can contribute to finding the most appropriate solution.

Section Three: Students' Attitudes Towards the Effect of Tech-anxiety on Online Learning

Question Eleven: Have you ever participated in online courses?

Table 3.11

Participation in Online Learning

Option	Number	Percentage
Yes	76	96,2 %
No	3	3,8 %
Total	79	100%

As pointed out in Table 3.11, the majority of the respondents (96.2%) mentioned that they have participated in online learning. This indicates that online courses are widely used, and most students have the technology needed for online courses. In addition, (3.8%) of them reported that they have never participated in online learning; they may have different reasons, which could be explored in the next question.

Question Twelve: If no, could you specify why?

For those who have not participated in online learning (3.8%), the reasons given are either a failed online teaching system or poor technology literacy. This suggests that they face

problems with the effectiveness of online teaching methods, and a lack of skills in using technology is one of the main barriers keeping some students from engaging in online education.

Question Thirteen: How often you attend online courses?

Table 3.13

Online Courses Attendance

Option	Number	Percentage
Rarely	8	10,1%
Sometimes	36	45.6%
Most of the time	27	35,2%
Always	10	12.7%
Total	79	100%

As it is displayed in table 3.13 a significant portion of students (45.6%)) attended online courses sometimes. This indicates that nearly half of the respondents engaged with online courses on an occasional basis, possibly balancing them with other learning methods, while 35.2% regularly participated in online courses, demonstrating a strong preference or need for this mode of learning, though not on a consistent daily basis. (12, 7%) answered that they always attended. This group showed a consistent and high level of commitment to online learning, likely finding it highly beneficial and comfortable for them and integrating it fully into their routine. 10, 1% attended rarely. This small percentage suggests that some respondents did not find online courses appealing or faced barriers such as lack of interest, difficulty of access, and feelings of anxiety from technologies.

Question Fourteen: Which technological device you use in online courses?

Table 3.14

Technological Devices

Option	Number	Percentage
Smartphone	51	64,6 %
Computer	27	34,2 %
Tablet	1	1.3 %
Total	79	100

As mentioned in the table above, all the students have electronic devices for their online courses. Table 3.14 shows that the majority of students (64,6%) use their smartphones, which implies that they can study anywhere and anytime, they find it more practical to use, and they can even receive notifications so that they do not miss any updates or online sessions on the platform. For the other devices, the computer is also used by 34.2% of students, whereas the tablet is used only by 1.3% of them. This may indicate that students differ in their preferences regarding the devices they use to connect to the internet, but the smartphone is more commonly used because it is easy and practical for the students to enroll in the platform.

Question Fifteen: How you feel when you have an online course?

Table 3.15

Students' Feelings During Online Course

Option	Number	Percentage
Confortable	18	22,8 %
Stressful	16	20,3%
Anxious	45	57%
Total	79	100%

The results in the table 3.15 indicate that a significant level of anxiety was associated with online courses. The majority of respondents felt anxious (57%) when participating in online courses. This anxiety could have been due to various factors, such as unfamiliarity with the technology, a lack a lack of face-to-face interaction, or challenges in managing time and self-motivation. A smaller but notable portion of respondents (22.8%) felt comfortable with online learning, possibly appreciating the flexibility and convenience it offers. Additionally, a significant number (20.4%) found online courses stressful, which might have stemmed from technical difficulties, isolation, or the pressure to perform without the traditional classroom support system. Overall, the data suggests that while some students had adapted well to online learning, the majority experienced negative emotions such as anxiety and stress.

Question Sixteen: When you feel anxious and stressed is it because:

Table 3.16

Causes of Learners's Anxiety

Option	Number	Percentage
You are not skillful in using computer and internet	7	15,9 %
You are not technology person	9	20,5%
You are uncomfortable using technology	8	18,2%
You feel online courses complicate understanding	14	31,8%
Online courses do not improve your learning	11	25%
You have negative experience with online courses	4	9,1%
Using technology for learning affects my performance	6	13,6%
Total	59	100%

The results shown in Table 3.16 indicate various reasons why respondents feel anxious and stressed in online courses. A significant number of respondents (31.8%) believe that online courses complicated their understanding of the subject matter. This perception could stem from the absence of face-to-face interaction with instructors and peers, making it harder to grasp complex concepts. A portion of respondents (25%) felt that online courses did not improve their learning, potentially due to ineffective instructional methods or the lack of hands-on experiences that traditional classroom settings provide. Further, (20.5%) of respondents indicated that they were not technology-oriented, suggesting a general discomfort or lack of interest in engaging with digital tools. Additionally, (18.2%)were uncomfortable using technology, which might have resulted in a lack of confidence and increased stress during online learning activities. Another 15.9% felt anxious and stressed because they were

not skilled in using computers and the internet. This lack of technical proficiency could have led to difficulties in navigating course materials and completing assignments. . Moreover, (13.6%) of respondents believe that using technology for learning negatively affects their performance. This belief might arise from the distractions and challenges associated with managing technology, further increasing their stress levels. Lastly, (9.1%)of respondents reported having negative experiences with online courses in the past, which could have contributed to their anxiety and stress. These negative experiences might include technical issues, poor course design, or insufficient support from instructors. Overall, the results highlighted a range of factors contributing to the anxiety and stress experienced by students in online courses.

Question Seventeen: Have you ever avoided participating in online learning due to feelings of anxiety or discomfort with technology?

Table 3.17

Avoiding Online Learning by Learners Due to Anxiety or Technological Discomfort

Option	Number	Percentage
Yes	41	51.9%
No	38	48,1%
Total	79	100%

The survey shows that 51.9% of participants avoided online learning because they felt anxious or uncomfortable with technology. This means more than half felt these issues were strong enough to keep them from participating. On the other hand, 48.1% did not avoid online learning for these reasons, suggesting they felt more at ease with the technology. The results

showed that while many students were held back by anxiety and discomfort, almost as many were not affected by these issues.

Question Eighteen: Do you think that tech-anxiety has a negative effect on your online learning?

Table 3.18

Attitudes towards the Effect of Tech-Anxiety on Online Learning

Option	Number	Percentage
Yes	59	75,6%
No	19	24 ;4%
Total	78	100%

According to the findings presented in Table 3.18, (75.6%) of respondents believe tech-anxiety negatively affects their online learning. This means that a significant majority felt that their anxiety about using technology hindered their ability to learn effectively in an online environment. This anxiety could stem from various factors, such as difficulty navigating digital platforms, fear of technical issues, or a lack of confidence in using necessary tools and software. On the other hand,(24.4%) of respondents did not think tech anxiety had a negative effect on their online learning. These individuals likely felt more comfortable and confident with technology, suggesting that they were able to engage with online courses without the burden of anxiety affecting their performance. They might have had better experiences with technology, more support, or greater familiarity with the tools required for online learning. So tech anxiety is a significant issue for many students, though some do not see it as a problem.

Question Nineteen: In your experience, how does tech-anxiety (fear of using technologies) impact your overall engagement and participation with on-learning?

Table 3.19

The Impact of Tech-Anxiety on Students's Performance and Satisfaction

Option	Number	Percentage
It significantly hinders my engagement and participation	15	19,5%
It somehow affects my engagement and participation	41	53,2%
It has no impact on my engagement and participation	21	27,3%
Total	77	100%

The displayed results illustrated the varied impact of tech anxiety on online learning experiences. More than half of the respondents (53.2%) acknowledged a moderate impact, indicating notable obstacles and frustrations, albeit less severe than the first group. Conversely, a minority (27.3%) reported no discernible impact, suggesting that prior experience, confidence, or effective coping mechanisms enabled them to navigate technology without significant anxiety, facilitating full engagement and benefit from online learning environments. A significant portion (19.5%) of respondents found it to be a considerable hindrance, experiencing notable challenges and frustrations resulting from their anxiety about using technology.

Question Twenty: Feel free to add any further suggestions or comments.

Further suggestions and comments

The question explored respondent perspectives about using technology to learn languages and how they deal with feeling anxious about it. Answers varied. Some felt technology was very helpful for learning languages but said it's important to know how to use it well to avoid feeling anxious. One person mentioned having certifications from companies like Huawei, Google, and Cisco, which suggests they're actively working on improving their skills. Another person mentioned that facing fears is better than avoiding them. These responses show that while technology can be useful for learning, it's essential to manage anxiety and use it effectively for better results.

3.5. Summary of Results and Findings from Students' Questionnaire

Based on the information acquired and the analysis of learners' responses, we have gathered some evidence to show whether or not students have anxiety when utilizing technology, i.e., tech anxiety in online learning. The three components of the questionnaire, each with a different set of questions, are meant to show how tech anxiety impacts their ability to learn online.

In the first section, which is titled General Information, question one is about the age of the students. shows that the most respondents (30.7%) are 21 years old as a normal third-year student, while the remaining students range in age from 20 to 22 years old, 23 years old, and more, which means that some may have started their studies earlier while others may face academic failure after one or two years. The second question reveals that females make up the vast majority of participants (75.9%), which indicates that females experience anxiety when using technology in learning more than males. Furthermore, table 3.3 reveals that 84.8% of students chose to learn English, likely reducing their anxiety, while 15.2% did not choose it, potentially increasing their anxiety due to a lack of interest. The last question of this

section is about students' level in English. The table shows varying English proficiency levels among learners: (58.2%) consider their level good, and (34.2%) average. Many students assess their proficiency based on their comprehension and production skills.

Additionally, the findings from the "tech-anxiety" section, specifically the fifth question, show that over half of students (62%) agreed that they feel anxious in the classroom, which indicates that they experience anxiety in the classroom. However, only 38% of respondents said they didn't feel nervous in the classroom. According to the sixth question, 51.9% of the participants admitted to experiencing nervousness "sometimes" when they were learning in certain circumstances. However, the answers range between "rarely" and "most of the time." Whereas, just two respondents selected "always." In response to the seventh question in this section about factors causing anxiety, the majority of participants (46.8%) declare that the primary cause of feeling anxiety in the classroom is the fear of making mistakes in language because English is not their mother tongue or their level of English is not good, in addition to the two other primary causes, which are fear of being asked by the teacher ,and fear of speaking English in the classroom due to their introverted personalities that prevent them from showing their skills, and this causes them to feel anxious when trying to participate and interact with the teacher and the classmates. Moreover, depending on the information received from the eighth question about experiencing anxiety when using technology for learning, we have determined that more than half of students (65.8%) admitted that they did not feel anxious when using technology for learning. This means that they have a positive attitude towards using technology in learning, whereas (34.2%) students feel anxious when using technology, and this creates a kind of contradiction compared to the answers to the other questions, as the students declare that they suffer from tech-anxiety. The ninth question, which comes before the last one, asks about the causes of students' feelings of technology anxiety in learning. The results show that most students (33.3%) report feeling stressed out

when using technology in learning since they are not technology people, meaning they do not prefer to use technology to study. Additionally, 26.7% of respondents think that they are not skilled with technology, which indicates the difficulty of dealing with digital platforms and a lack of experience. Participants chose other options, such as: They feel uncomfortable and annoyed using technology, in addition to the physical problems associated with anxiety. The final question of this section is about the strategies that can help them reduce tech anxiety. (43.4%) of students see that enhancing the technological culture is a good solution for this phenomenon, as our society does not favor the use of technology because of its negative results. Others (22.4%) state that taking courses can help them be more proficient, while others (32.9%) choose creating a supportive environment. Few participants (14.5%) select to determine the type of technology anxiety in order to find the appropriate solution. These are the most convenient solutions to eliminate or at least reduce technological anxiety while studying.

In section three, mainly question eleven, the majority of students (96.2%) have participated in online learning while (3.8%) did not, indicating sufficient access to necessary technology. For those who did not participate in online learning, the main reasons are a failed online teaching system and poor technology literacy, indicating these are key barriers. Frequency of engagement in online courses vary in question thirteen, with (45.6%) attending occasionally, balancing it with other methods, while (35.2%) participated regularly but not daily. A consistent commitment was shown by (12, 7%), which indicates that they participate if not always sometimes. Most students (64.6%) use smartphones for their online courses, valuing their practicality and portability. A significant level of anxiety feeling (57%) is associated with online courses, inferred from unfamiliarity with technology and lack of face-to-face interaction. Some (22.8%) are comfortable with online learning, appreciating its flexibility. Stress is noted by (20.4%), possibly due to technical issues and isolation .In

question sixteen, the sources of anxiety and stress include lack of technical skills (15.9%), disinterest in technology (20.5%), and discomfort using technology (18.2%). Additionally, 31.8% found online courses complicated understanding the subject matter, 25% saw no learning improvement. Concerning avoiding online learning due to tech-anxiety in question seventeen , tech-anxiety discouraged (51.9%) from online learning, while (48.1%) did not avoid it due to anxiety. Moreover, in question eighteen, a majority (75.6%) believe tech-anxiety hinders their learning, but (24.4%) felt unaffected. The impact of tech-anxiety varies, with (19.5%) experiencing significant hindrances; this indicates that tech-anxiety is a significant issue for many students. Furthermore (53.2%) moderate impacts and (27.3%) no impact, indicating different levels of familiarity and confidence with technology. The current study investigated students' tech-anxiety during online learning. Results showed that students' engagement and participation in online courses are affected negatively by their feelings of technological anxiety.

Conclusion

The study's findings suggest that tech-anxiety is a significant issue in students' online learning processes in which they are extremely exposed to this psychological sensation for a variety of reasons. Based on the participants' opinions, the most significant ones are: they are not technology persons, they are not skillful enough win technology and they feel uncomfortable using technology. It appears that English language students are negatively affected by anxiety, and its impact goes beyond their borders and affects the process of online learning. Although they are aware of the issue, they need to use various techniques to deal with their anxiety when utilizing technology.

General Conclusion

1. Concluding Remarks

The current study aims to identify students' attitudes towards the effect of tech-anxiety on online learning as well as the factors that contribute to anxiety among EFL learners who use technology for educational reasons. This study is based on a questionnaire given to third-year EFL students from the department of letters and English language at the University of 08 Mai 1945, Guelma which aims to investigate the primary issues that students encounter in online courses as well as the factors that contribute to tech anxiety. Students' questionnaire is the ideal instrument for gathering their thoughts and perspectives regarding tech anxiety in online learning.

Tech-anxiety eventually prevents EFL students from comfortably utilizing technology in online learning, which makes them resistant to employing technology in both the academic field and during online learning. Moreover, it has been concluded that EFL students face many obstacles that lead them to anxiety, and the factors that most influence them are: interaction problems, lack of experience, and gender. This study helped identify the most important factors causing technological anxiety in distance learning .

The results obtained confirm that technology anxiety significantly affects students' engagement and participation in distance learning, which makes them have a negative attitude towards this method of learning. It has been concluded that learners of English as a foreign language face many obstacles that lead them to anxiety during online learning. The factors that have the biggest effects are: they are not technology persons, they are not skilled with technology, they lack experience, and they have problems with interaction. This study helps identify some solutions to the most important factors causing anxiety. These tricks and

solutions help them avoid many problems in their studies, especially improving self-efficacy, which helps increase their self-confidence.

2. Pedagogical Implications

2.1. Enhanced Digital Literacy Training

Improved digital literacy instruction is essential for lowering tech anxiety in online learning because it gives students the knowledge and self-assurance they need to successfully navigate digital environments. In-depth training courses covering a broad spectrum of digital tools and platforms contribute to the demystification of technology, making it less scary and more approachable. Through the provision of comprehensive guidelines, practical exercises, and ongoing assistance, these training programs guarantee that students can develop their skills gradually. This methodical approach to skill development lessens learners' feelings of overwhelm and gives them the confidence to take on technological obstacles. Additionally, troubleshooting methods and problem-solving approaches are frequently covered in digital literacy training, as these are crucial for resolving typical technical problems.

2.2. Supportive Learning Environment

By making students feel at ease, competent, and confident, a supportive learning environment is essential to reducing tech anxiety in the context of online learning. First off, learners are reassured that help is easily accessible and that they won't have to worry about becoming stuck with technology problems when clear communication channels and easily accessible technical support channels are established. Additionally, encouraging a culture of cooperation and peer support motivates students to ask for assistance from their peers, which lessens the fear that comes with facing technological difficulties. Furthermore, improving usability through the use of intuitive design and user-friendly interfaces on online platforms

reduces confusion and irritation. Students feel more comfortable trying new technology when there is a supportive and upbeat environment where errors are seen as learning opportunities rather than failures. In the end, online learning platforms may greatly reduce tech anxiety by fostering an atmosphere that values empowerment, understanding, and support. This will enable students to concentrate on their academic objectives with more assurance and zeal.

2.3. Interactive and Engaging Content

By fostering an immersive and user-friendly learning environment, interactive and engaging content is essential to lowering tech anxiety in online learning. This kind of content encourages engagement and active participation from EFL students, enabling them to work directly with the information rather than just passively reading it. By offering useful, real-world applications and experiences, such a hands-on approach demystifies technology and improves learners' comfort and familiarity with digital tools. Furthermore, interactive content meets individual needs by accommodating a variety of learning methods and preferences. This gives students the freedom to interact with the material in ways that most interest them. Furthermore, interactive content's dynamic quality also stimulates curiosity, problem-solving, and investigation, which supports a growth mentality that sees technology barriers as chances for learning and development rather than insurmountable hurdles. In the end, online learning platforms may greatly reduce tech anxiety by offering dynamic and captivating content, empowering students to approach technology with assurance, curiosity, and excitement.

Additional Implications

- The solutions are not limited to the student. The university must also pay some attention to the phenomenon of technological anxiety. By delivering clear instructions and video tutorials, readily available technical support, and frequent training sessions,

the university administration can assist EFL learners in reducing the anxiety related to technology.

- Teachers' job is not limited to teaching only; they are also, in a sense, psychologists. Teachers have a crucial role to play in helping their students overcome their anxiety during online learning. This is not always an easy task, as teachers must be serious and professional in order to ensure that students are carrying out their responsibilities as assigned.
- As for students, the most important step is to determine the type of anxiety they experience when using technology. If it is state anxiety, it can be eliminated by dealing with existing problems such as poor internet and communication problems. Once these problems are solved, the anxiety disappears. However, if anxiety about technology persists despite solving the existing problems, it is considered a trait that requires greater measures to mitigate it.

3. Limitations of the Study

Similar to many other research projects, this one encountered certain challenges that hindered the researchers' ability to do this to the extent that it can be said that it is somewhat difficult. Here are a few of those challenges:

The inability to manage the questionnaire physically for students who elaborate in the three years and ensure that serious and relevant information is provided because they do not attend much in the second semester in addition to their preoccupation with the preparation exams. This may affect the transparency of the research.

Students are unwilling to answer the research, or, in other words, students were not interested in the questionnaire, despite their number of 200 students, but the answers reached only 79.

Finding pertinent sources for the study was extremely difficult because there were so few scholarly articles discussing technology anxiety in relation to distance learning. It can be due to the term being considered somewhat new compared to the topic

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Appendix A

Dear students,

You are kindly requested to answer this questionnaire, that aims at investigating EFL learners' tech-anxiety in online learning, at the Department of English language at the University of 08 mai 1945, Guelma. The results of the questio

nnaire will be analyzed and used for the accomplishment of a master dissertation, your answers are crucial for the success of this research. Further we confirm you that your answers will be handled carefully and in strict confidence.We truly appreciate your cooperation.

Miss. Hadil Racha Ghezel and Miss.Khouloud Boussaha

Department of Letters and English Language

University 8 Mai 1945-Guelma

Section one : General Information

How old are you?.....

1. What is your gender ?

Male	
Female	

2. Was it your choice to study English?

Yes	
No	

4. how is your level in English?

Very good	
Good	
Average	
Weak	
Very weak	

Section two : Tech-Anxeity

5. Do you feel anxious in the classroom?

Yes

Yes	
No	

6. How often you feel anxious in the classroom?

Rarely	
Sometimes	
Most of the time	
Always	

7. Is your anxiety due to:

Fear of speaking English in the classroom	
Fear of being asked questions by your teacher	

Fear of not understanding what the teacher is saying in foreign language	
Fear about making mistakes in language class	
Feeling that the other students speak the foreign language better than you do	

8. Does utilizing technologies (computer, internet, smart phone, websites, …) in learning cause you to feel stressed or anxious?

Yes	
No	

9. If yes, is it because:

You are not a technology person	
You are reluctant to learn new features of technology	
You feel uncomfortable using technology	
You feel technology complicates learning	
You are not skillful with technology	
You are often annoyed when using technology	
You have physical problems from using technology as headaches, tense muscles, fatigue, …	
Other	

……

10. How do you usually control your technological anxiety when participating in learning activities?

Enhancing your Technological culture	
taking ICT courses	
Creating a supportive environment	
Determine the type of technological anxiety	

Section Three : Students' attitudes towards the Effect of Tech-anxiety on online Learning

11. Have you ever participated in online courses?

Yes	
No	

12. If no, could you specify why?.....

13. How often you attend the online courses ?

Rarely	
Sometimes	
Most of the time	
Always	

14. Which technological device you use in online courses?

Smartphone	

Computer	
Tablet	
Other	

……

15. How you feel when you have an online course?

Comfortable	
Stressful	
Anxious	

16. If you feel anxious and stressed is it because:

You are not skillful in using computer and internet	
You are not a technology person	
You are uncomfortable using technology	
You feel online courses complicates understanding	
Online courses do not improve your learning	
You have negative experiences with online courses	
Using technology for learning, affects my performance.	
Other	

……..

17. Have you ever avoided participating in online learning due to feelings of anxiety or discomfort with technology?

Yes	
No	

18. Do you think that tech-anxiety has a negative effect on your online learning?

Yes	
No	

19. In your experience, how does tech-anxiety (fear of using technologies) impact your overall engagement and participation on E-learning?

It significantly hinders my engagement and participation	
It somehow affects my my engagement and participation.	
It has no impact on my my engagement and participation.	

20. Feel free to add any further suggestions/ comments

…….

ملخص

تهدف هذه الدراسة إلى دراسة القلق التكنولوجي لدى طلاب اللغة الإنجليزية كلغة أجنبية أثناء التعلم عبر الإنترنت. وبناءً على ذلك، يستكشف البحث الحالي وجهات نظر الطلاب وخبراتهم فيما يتعلق بمواقفهم تجاه تأثير القلق التكنولوجي على التعلم عبر الإنترنت، مما يعيق مشاركتهم وانخراطهم. وبالتالي، افترضنا أن الطلاب قد يكون لديهم موقف سلبي تجاه التعلم عبر الإنترنت بسبب القلق التكنولوجي. من أجل إثبات أو صحة الفرضية، تم اعتماد المنهج الوصفي الكمي من خلال إجراء استبيان عبر الإنترنت لطلبة السنة الثالثة ليسانس في قسم اللغة الإنجليزية في جامعة قالمة 8 ماي 1945. بعد تحليل البيانات، تبين أن الطلاب لديهم موقف سلبي تجاه التعلم عبر الإنترنت بسبب القلق التكنولوجي؛ وبالتالي، فإن انخراطهم الطلاب إلى ومشاركتهم في المقررات الدراسية عبر الإنترنت يتأثر سلبًا بمشاعر القلق التكنولوجي لديهم. لذلك، يحتاج استخدام تقنيات واستراتيجيات مختلفة للتعامل مع قلقهم عند استخدام التكنولوجيا

Résumé

Cette étude a pour but d'examiner l'anxiété technologique des étudiants en anglais langue étrangère lors de l'apprentissage en ligne. En conséquence, la présente recherche explore les points de vue et les expériences des étudiants concernant leurs attitudes à l'égard de l'effet de l'anxiété technologique sur l'apprentissage en ligne, entravant leur engagement et leur participation. Nous avons donc émis l'hypothèse que les étudiants pourraient avoir une attitude négative à l'égard de l'apprentissage en ligne en raison de l'anxiété technologique. Afin de prouver ou d'infirmer l'hypothèse, la méthode descriptive quantitative a été adoptée par l'administration d'un questionnaire en ligne aux étudiants de troisième année LMD au département d'anglais de l'Université de Guelma8, Mai 1945. L'analyse des données a révélé que les étudiants ont une attitude négative à l'égard de l'apprentissage en ligne en raison de leur anxiété technologique ; ainsi, leur engagement et leur participation aux cours en ligne sont affectés négativement par leurs sentiments d'anxiété technologique. Par conséquent, les étudiants doivent employer diverses techniques et stratégies pour gérer leur anxiété lorsqu'ils utilisent la technologie.