# Effect of Digital Storytelling on Learning Motivation and Reducing Anxiety of Learners to Talk to Others in a Foreign Language

Majid Mohammadi Khomjani

A Thesis

in

The Department

of

Education

Presented in Partial Fulfillment of the Requirements

for the Degree of Master of Arts (Educational Technology) at

Concordia University

Montreal, Quebec, Canada

December 2020

**CONCORDIA UNIVERSITY**

**School of Graduate Studies**

This is to certify that the thesis prepared

By: Majid Mohammadi Khomjani

Entitled: Effect of Digital Storytelling on Learning Motivation and Reducing Anxiety of Learners to Talk to Others in a Foreign Language

and submitted in partial fulfillment of the requirements for the degree of

**Master of Arts (Educational Technology)**

complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Signed by the final Examining Committee:

Dr. Richard Schmid Examiner

Dr. Julie Corrigan Examiner

Dr. Steven Shaw Supervisor

Approved by

*Dr. Sara Kennedy* Chair of Department

*Dr. Pascal Sicotte* Dean

Date

15 December 2020

**ABSTRACT**

Effect of Digital Storytelling on Learning Motivation and Reducing Anxiety of Learners to Talk to Others in a Foreign Language

Majid Mohammadi Khomjani

The world of technology has had a significant impact on the development of education. One of these powerful technologies used in education is digital storytelling which integrates computer technologies and telling stories together. By combining texts, images, and audios, DST becomes a powerful multimedia tool in the domain of language teaching and learning where teachers can enhance their teaching creativity and students are encouraged to actively involve in their learning process to improve their speaking skills and tell stories in their own words and voice. While much research has emphasized the effectiveness of digital storytelling in motivation and listening anxiety, the purpose of this study was to investigate the effect of digital storytelling on learning motivation and reducing anxiety of learners to talk to others in a foreign language. Our intervention group participants were taught online by the researcher and they met regularly for two sessions of one hour and a half per week. The online course lasted 10 sessions including the final test session. The course took about a month with 15 hours of teaching in total. At the beginning, students had to take pre-test to identify their speaking motivation and anxiety before digital storytelling (DST) intervention. Afterwards, the post-test was used to compare for finding out how different students' anxiety and motivation were before and after digital storytelling (DST) intervention.

The findings of the present study based on pre-tests and post-tests in the form of questionnaires support that digital storytelling (DST) reduces anxiety for English foreign language speakers to talk to others, but DST intervention does not affect the motivation of English foreign language speakers to talk to others.

***Keywords:*** digital storytelling, speaking anxiety, speaking motivation, teaching speaking, computer technologies

**ACKNOWLEDGEMENTS**

First and foremost, I want to thank the Almighty God for His compassion and blessing. Due to His blessing, I was able to overcome challenges while I was living in Canada during my undergraduate and post-graduate studies to finish my master's degree.

I also take this opportunity to express my big appreciation to my supervisor, Dr. Steven Shaw whose guidance, attention and support helped me tremendously with the successful completion of this research, especially in the middle of his health issues. I also thank him for sharing his knowledge and experiences with me.

I am grateful to Dr. Richard Schmid and Dr. Julie Corrigan for devoting the time and caring attention to provide an amazingly in-depth review of my proposal how this study could be further developed. Having met Dr. Richard Schmid earlier, I cannot describe how blessed I was to be his student in his research method class. His knowledge and experience have been instrumental in this journey.

I extend a special thank you to Mr. Akbar Savari, the principal of Tehran International School, who offered me the permission to conduct my research in the school. Without his sincere help and encouragement, this research would not have been possible.

Moreover, I also would like to thank all the research participants from TIS School for their time who participated in this research; this research would not be done without their participation.

Finally, special recognition goes to my beloved mother, Heshmat Farahani, my father, Ghadir Mohammadi Khomjani, and my sister, Samira and my brothers, Mehdi and Hamid. I thank them for their unlimited love, support and motivation throughout this research.

.

## DEDICATION

I dedicate this study to my eternal love Parvin (Paria) Ronaghi.

# TABLE OF CONTENTS

# List of Figures

# List of Tables

# List of Abbreviations

DST .....Digital Storytelling
EFL .....English as a Foreign Language
CARS ..... Computer Anxiety Rating Scale
FLCAS ..... Foreign Language Classroom Anxiety Scale
SLSAS..... Second Language Speaking Anxiety Scale
AMTB .....Attitude Motivation Test Battery

# Chapter One

# INTRODUCTION

## 1.1 Background

Many people around the world have felt the need to learn another language, especially English, at least once in their lives. With the passage of time and advances around the world, communications have become wider. Undoubtedly, people of different ages and in a variety of situations throughout their lives will need to interact with different people in different countries and cultures. As time goes by, there is a growing need for English as a common international language, and this is an indication of the great importance of learning English.

Second language learning is best done during childhood and early childhood development. But it is less common and rarely happens in developing countries. However, many young people start to learn English at an early age. In addition, learning English happens through taking classes held in language schools all over a city or country and each language institute uses a variety of methods in both termic and intensive classes. People who start English as an adult and find themselves in a class with others of the same age sometimes become anxious and afraid of expressing their English skills. Such fear and anxiety of failure and judgment make them less motivated to attend English classes.

Teaching English through Digital Storytelling (DST) not only actively engages students in the teaching and learning process, but students are also encouraged to participate in new educational practices which in turn makes adults eager to learn English in new ways using technology and software on day to day basis. The use of technology enormously helps them to improve their English language skills, reduce their anxiety while attending classes, and gradually increase their motivation from one meeting to another.

What motivated me to do this study goes back to the time I started learning English and I always had to prepare my answers to my teachers' questions by translating from Persian to English and repeating the answer in my head before my turn to overcome peer anxiety and fear of not being able to answer the questions properly. In addition, my 20 years of teaching experience motivated me to do this study and see how technology in the form of digital storytelling can motivate students to get more involved in their endeavors.

## 1.2 Statement of Problem

Emotions have played a significant role in the evolution and survival of beings (Zentall, 2017). If emotions are effective as well as efficient, they will improve human decisions (Katahira et al., 2015). One of the basic emotions in humans is anxiety. It is the emotion that is created when people feel threatened and alert (Averill, 2015).

As time passes and with advances made, the survival of humans is threatened more complexly. Human survival is more threatened and becomes more difficult by the workplace, the surroundings, and everyday situations. Feelings that trigger anxiety also differ. Today, being ridiculed by others or judged by others is one of the most anxiety-causing situations (Fetzner, Teale Sapach, Mulvogue & Carleton, 2016). Such feelings bring negative emotions along that are difficult to control and tackle. In worse situations, there are people who feel so much anxiety about being judged by others, it is difficult for them to function in their daily lives as they suffer from social anxiety disorder (Stein & Stein, 2008).

Today, people's competence is also measured by their ability to do something. If one fails to learn a skill and feels helpless, one's motivation to continue learning the skill is reduced (Urdan & Turner, 2005). As the feeling of inadequacy and lack of competence grows in the individual, he or she becomes anxious to continue expressing or learning new skills. All of these things go hand-in-hand to get someone out of training.

Anxiety in the English language classroom is very common for second language learning, so extensive studies have addressed this issue (Akkakoson, 2016; Azizifar, Faryadian & Gowhary, 2014). Learning motivation is one of the most important factors influencing the continuation of new skill training (Gardner, 2014). Learning models emphasize the motivation and positive attitude towards learning new skills so that they are strong predictors of learning (Keller, 2016).

Other studies have pointed to the impact of motivation on learning English as a second language and emphasized that having an incentive to learn English can facilitate the path of instruction and learning (e.g., Zhao, 2015).

According to what has been said, the best way to teach is to find ways to motivate students and try to reduce anxiety by presenting a variety of strategies.

Digital storytelling (DST) uses new technologies to make students use the media spaces they use every day to learn English (Smeda, Dakich & Sharda, 2014). Digital storytelling (DST), by integrating technology and learning creates a link between positive emotions and curriculum content (Niemi & Multisilta, 2016). Creating positive emotions while learning English motivates students (Mega, Ronconi & De Beni, 2014). Motivation is the key to students' success in learning different skills (Alizadeh, 2016). Teaching English through digital storytelling (DST) also helps students become more involved in the learning process and enhances their sense of cooperation with the teacher and other peers, which increases responsibility and commitment. When students feel responsible for presenting an assignment, their motivation to complete the assignment increases (Lau, Kitsantas, Miller & Rodgers, 2018).

As mentioned, digital storytelling (DST) utilizing new approaches and incorporating technology with learning makes it one of the potential ways to teach English and there are many advantages to choosing this teaching method. The purpose of this study was to evaluate the effect of digital storytelling (DST) on the anxiety and motivation of students willing to learn English.

## 1.3 Need for Research

Due to the ever-expanding growth of communication, learning English is a constant need which is felt every single day. One of the major problems that occur in teaching English or other languages is anxiety which discourages learners to discontinue their language training classes. In addition, lack of motivation also causes people not to do the required tasks and perform poorly in language learning.

Digital storytelling relies on new ways of engaging students in the issue of education, which reduces the level of anxiety among language learners and increases their commitment in learning English. This ultimately strengthens students' motivation to do the required tasks.

## 1.4 Research Objectives

The purpose of this study was to examine educational strategies appropriate to the challenges of teaching English as a second language that can reduce students' anxiety and increase their motivation to continue attending language classes and doing the intended homework. Furthermore, one of the main goals of this study is to evaluate the usefulness of teaching through digital storytelling (DST) as a new and appropriate method of the present age.

## 1.5 Research Questions

Does Digital Storytelling (DST) reduce anxiety for English foreign language speakers to talk to others?

Does Digital Storytelling (DST) increase the motivation of English foreign language speakers to talk to others?

## 1.6 Conceptual Definitions

### 1.6.1 Anxiety:

Anxiety in this study refers to the anxiety that English as a foreign language students experience when speaking in English or being unable to do the required tasks in the class.

### 1.6.2 Motivation:

The motivation variable in this study refers to a positive attitude and interest to continue attending an English language class and doing the intended homework.

### 1.6.3 Digital Storytelling:

This term refers to a teaching approach combined with various tools such as photo, text, audio and video to create and deliver subject-specific content that can be produced by the students' own voice or part of a short film.

# Chapter 2

# Literature Review

## 2.1 Definition of Speaking

According to Webster's Dictionary, speaking is the behavior by a speaker who uses verbal speech to express his or her ideas (Nenfeldt & Guralnik, 1991). There is also another definition of speaking saying that humans are meant to produce sounds from the language to speak (Hughes & Reed, 2016). Speaking is a complex cognitive activity that requires the coordination of different organs and parts to apply it (Strijkers & Costa, 2016).

### 2.1.1 Speaking in English Class

One of the main problems in foreign language teaching is to enable students to use a foreign language to speak. The level of preparation and success in this skill depends on many different factors, some of which are considered to be the teacher’s responsibility and the way he/she teaches, and the rest depends on the students' interest level and hard work (Bygate, 1987). To be able to speak English requires a basic knowledge of grammar and English vocabulary, and acquiring skills in these areas requires initial perseverance, interest, and motivation (Nazir, Bashir & Raja, 2014). In addition, speaking English is one of the most important skills that students can acquire and so one they may feel especially anxious about. This intense feeling is one of the most important factors which prevents students from speaking English in front of others (Öztürk & Gürbüz, 2013).

Being fluent in English means being able to express your thoughts, feelings and ideas. Your goal is to speak in full sentences. If we try to discuss in class what each student is interested in, we can witness how much the students' ability to speak English has improved in their daily lives, provided that students engage actively with the concepts discussed in class. Speaking English should contain everyday material that students express in their own mother tongue, and students' minds should try to express the concepts of the mother tongue in English.

### 2.1.2 Speaking Skill in English Class

To use English as a second language, conversational skills are one of the most important skills needed to communicate properly. In most English language classes as a second language, students have the necessary skills in reading, writing and

even listening, but they lack enough speaking skills because this skill includes the ability to process grammar knowledge as well as vocabulary quickly and simultaneously in addition to other cognitive skills such as attention and inhibition (Nazir et al., 2014). The ability to hear correctly has a very important effect on understanding the meaning of the sound we hear. In order to understand people's meaning and purpose, it is of paramount importance to first fully understand what they mean by their words. To do this, you need to listen repeatedly and to the extent possible to understand the correct pronunciation of words and sentences. In order to better understand the meanings of the sentences, it is necessary to practice them with a regular partner so that you can reach your full potential in listening skills. This skill is one of the most important factors in speaking English properly. Another skill we need to be able to speak English properly is to structure grammatically correct sentences. To gain mastery over the structure and grammar of the English language, it is necessary to practice the rules in English grammar language regularly and to test the learnt lessons and material in the natural environment. Also, mastery of words and their definitions in order to use them in speaking is the basis of this skill.

In general, speaking skill is the most difficult and complex one that requires a high level of knowledge and adequacy in other English language learning skills. It also becomes more challenging in countries where there is no natural environment for conversing in English in a normal situation. Foreign language learners do not usually get a good opportunity to be able to speak English, so the only place they can speak English is limited to language classes. This shows how significant it is to speak in an English class in such countries (Bećirović, 2017).

These factors by themselves do not guarantee the success of speaking skills. There are many psychological and social factors involved that affect this issue, which will be discussed below.

### 2.1.3 Speaking Activity in English Class

Due to the lack of a natural environment for speaking English and improving the ability to speak English, applicants need to attend language classes where they are taught the skills needed to learn English. Teachers teach the skills needed to learn

English based on their teaching principles and teaching methods. In the meantime, the focus of some principles is on listening skills, grammar, conversation, or all of them together. In most cases, teachers' teaching methods do not cover all the required elements needed to learn language multiple skills. Therefore, in addition to language classes, students should try to strengthen their skills outside class. However, speaking and conversation skills, which are deemed to be the most important for communication and depend on a variety of factors, require an environment that unfortunately there is not much opportunity to practice outside the classroom. Therefore, most of the activities needed to enhance conversation and speaking in English are limited to attending the English class (Gao, 2019).

At this point, students are equally required to talk to each other, but paired conversations by themselves cannot increase the mastery of speaking skills. Strengthening this skill requires a lot of factors that will be addressed.

As mentioned earlier, when students talk about everyday subjects like daily events, the city's historical relationships, cultural ceremonies and traditions, places, stories and narratives, and so on, they can better improve their performance and get their message across. When students are able to talk about topics that are most appealing to them and that they have the experience to talk about, their conversation and speaking skills are better reinforced (Fatmawaty, 2017).

Improving speaking skills sometimes requires talking to a large number of people, and students need to present the topic in the form of seminars or podcasts or general clips in cyberspace or in the classroom. In these situations, people experience a higher level of testing and assessment, which necessitates strengthening and enhancing their conversational skills.

Also, having an active presence in the classroom, as well as frequent activities to participate in the desired tasks, such as oral presentation of lessons or free discussions, is one of the important factors to improve the speaking ability.

Free discussions in the classroom can better reduce bad feelings and anxiety and fear of being judged while speaking, which we will discuss below.

### 2.1.4 Speaking Problems in English Class

When a person decides to learn another foreign language, he or she, in most cases, needs a teacher to teach him or her the intended or the target language. In this case, most people refer to language classes. Learning common skills, as mentioned before, in order to learn another foreign language is very important. Also, since the ability to speak is one of the most difficult and important skills required, speaking problems are usually more noticeable compared to other skills that we will address. Speaking will be difficult for people who do not have a good and proper range of vocabulary. Also, this lack of vocabulary range in the foreign language is one of the main problems that students will face. Without a sufficient vocabulary, one can never have a good conversation. Furthermore, without access to the right and suitable vocabulary thesaurus, we cannot comprehend the meaning of what we hear, which will put the conversation into trouble (Dincer & Yesilyurt, 2017).

The vocabulary measure also plays a key role in the development of other skills, which shows the importance of vocabulary in learning a foreign language.

Reading comprehension skills gained through listening to content is one of the most important factors that can play a significant role in communication. Creating a good conversation is based on the high ability to understand what people receive from another person. Listening skills in learning English require the mastery of pronunciation and articulation of words. If students have the full ability to recognize words by hearing, this indicates that they have learned to pronounce words. And anyone who knows the pronunciation of each word can produce it correctly. However, it can be concluded that mastering listening skills is the prerequisite for improving and using speaking skills (Fredricks & S. Warriner, 2016).

Also, the teaching methods chosen by teachers for teaching are one of the factors that affect the improvement of speaking skills. The teaching and learning policies of each center and teacher affect the educational orientation. Therefore, different educational policies can be considered as one of the factors that can cause problems such as speaking in classrooms (Septiani & Sulastri, 2019).

The existing problems with speaking English do not depend solely on the subject matter or the students' learning and mastery. Issues like students' desire, motivation, expectation as well as teachers' motivation and energy in the classroom, the educational policies of the centers, etc. affect this issue. Psychological factors also have a great impact on these issues. Emotions, for example, are a psychological manifestation that can directly affect the learning of any subject, whether it is a foreign language or motor behavior. Psychological factors have a very wide influence on the subject of learning, which will be discussed in full below.

## 2.2 Emotions

The definition of emotion is a strong feeling emanating from a situation, mood, or relationship with others. Emotions can also trigger a response to an important internal or external event (Niedenthal & Ric, 2017).

Emotion is a natural state of the body associated with the body's nervous system. These states are somehow influenced by thoughts, feelings, and behavioral responses. The component of emotion interacts with various cases such as nerves, psyche, and body glands (Bradley & Lang, 2000).

Emotion is an important part of being. Emotions show themselves in the form of manifestations in such a way that it is possible to discern to some extent what emotions have led to such manifestations. Experiences through emotions can also be viewed negatively or positively by individuals (Richman et al., 2005).

This negative or positive experience is introduced by the pleasant or unpleasant feeling it creates for people. In some theories, cognition is introduced as an important part of emotion in such a way that cognition causes emotions. For example, when a person thinks that his life may be endangered by a potential threat, he/she experiences a certain emotion (Dalgleish & Power, 2000).

Overall, emotions are very complex. Emotions can also cause behaviors or feelings, or they can even be caused by a behavior, feeling or thoughts. These factors indicate the prevalence of emotions as an important component (Dolan, 2002).

Some theories suggest that emotions are made up of several parts. The first part deals with cognitive assessment, which is based on measuring and evaluating an event or subject. The second part is the physical signs or symptoms, which indicate the physiological experiences of the content of emotions. In the third part, which is related to the desire to act, it creates a motivation or a state of readiness to respond. In the fourth part, statements are made that are usually expressed verbally or by the face. This part is usually done for communication and in the last part, it is a feeling that is experienced due to emotions (Scherer, 2005).

### 2.2.1 The Importance of Emotions

Emotions, by creating cognitive, psychological and behavioral changes, play an important role in adapting behavior to better adjust to the current situation. This behavioral adaptation and adjustment eventually leads to survival, reproduction, and continuity. The ultimate goal of beings was initially survival and generational continuation, so these states that helped survival led to transmission and reproduction (Evans & Cruse, 2004).

Emotions are defined as the result of evolution because they have had positive results for the challenges and problems that have occurred in the evolution of beings. Emotions can also be a way to communicate. In the past, beings could better understand the purpose of others through the physical manifestation of emotional states. This has ultimately led to further evolution and adaptation (Evans & Cruse, 2004).

Researchers' studies have shown that emotions are made up of several states that are defined almost identically throughout the world. These emotions are: anger, fear, hatred, happiness, surprise and sadness. These emotions are among the most basic ones that almost all human beings can identify and experience (Levenson, 2011).

Further emotions were identified and examined, which are almost universal. These emotions also include: shame, affection, despair, acceptance, jealousy, love, hostility and anxiety, etc. (Shaver, Morgan & Wu, 1996).

Anxiety is one of the emotions that is expressed in response to the feeling of fear, which is usually considered a negative experience. Anxiety, with the changes it

makes, prepares a person for certain situations, which are described in more detail below (Bourke, 2003).

### 2.2.2 Anxiety

Anxiety is one of the emotions that arises when you are afraid of something happening. This fear usually comes from an unknown source which includes physiological and psychological symptoms. When a person experiences an unpleasant event in the past, situations that may make him/her again experience that unpleasant experience will invoke anxiety (Öhman, 2008). Anxiety in the normal condition causes a person to be aware of a situation or event that is potentially dangerous. The feeling of anxiety makes one avoid a particular situation or object, which leads to survival and adaptation to the situation, and this function of anxiety is considered as one of the appropriate results (Buss, 1990).

Anxiety is a natural reaction to threatening situations and has a kind of function to survive. The severity of anxiety varies, from vague anxiety to strong physical symptoms or feelings of panic to the point where the person thinks he/she is about to faint. Anxiety always ends after a while but can return (Spence, Taylor & Ketchel, 1956).

Anxiety can, for example, be caused by a thought or feeling of fear, or it can make you feel threatened, helpless, defeated, or worthless. Anxiety can sometimes be related to over-expectation or feelings of disgrace and shame or guilt (Traister, 2012). It is very common to think that you are a strange or special person, to feel that there is something wrong with you. If you are mistreated or someone leaves you forever, these are factors that can cause you anxiety (Endler & Kocovski, 2001). Also, feeling threatened about losing something that is important to you, such as security, social status, or love, can be distressing and anxiety-provoking (Hatfield, Brinton & Cornelius, 1989).

But anxiety does not always work well, so when anxiety is abnormal and problematic, it causes constant changes in the body, which, if chronic, can lead to physical health problems (Larson, Booth-Kewley, Merrill & Stander, 2001).

Also, the constant presence of anxiety is psychologically exhausting and reduces the power of psychological and cognitive function. Ultimately, anxiety is a very

important emotion that can both contribute to human performance and can be quite destructive and reduce people's performance (Kerr, 1988).

Anxiety is felt in different ways for different people and its severity can be varied. Mild anxiety can manifest as distress, restlessness, or an unrealistic feeling of being in a "bubble." Severe anxiety can be felt more in the body. In that case, it can manifest itself through physiological signs like difficulty in breathing, chest pressure, or palpitations (Ball, Robinson, Shekhar & Walsh, 1997).

Anxiety is caused by reactions in the central nervous system that we are unable to direct (Cameron, Abelson & Young, 2004). This reaction is actually a warning system which starts functioning by the central nervous system and brain when we are threatened or endangered. The danger or the threat doesn't always have to be real. When the brain sends signals showing there is a likelihood of danger, the body reacts, and that's what you know as anxiety (Jonas et al., 2014).

The sensitivity of the warning system varies from person to person, and can vary throughout life. Having anxiety mostly during adolescence until the age of 20 is not uncommon, but it typically gets better with age. Adverse events also affect sensitivity to anxiety (Hadjimina & Furnham, 2017).

Anxiety about education is one of the most important subjects on which extensive studies have been conducted in the past. For example, having anxiety in a normal range can have a positive effect on education. For example, in order for a person to have the right behaviors to study, it is necessary to have appropriate anxiety to wake up on time, spend time to do homework, not to be careless and not to go to bed at night until one has done his/her homework (Zeidner, 2014).

When a person is anxious within a normal and natural range, the blood supply and activity of certain areas of the brain associated with attention, concentration, and learning will improve, but when anxiety is severe and disproportionate, it has a very bad effect on his/ her academic performance. That is, while learning, he/she does not pay attention and concentrate, he/she is restless, he/she cannot start or finish homework, his ability to recall content from memory and use it decreases dramatically during exams, he/she cannot sleep well at night and this insomnia lowers his/her attention and concentration (Wahid, Yusof & Razak, 2014).

Anxiety has very obvious behavioral symptoms. Anxious people may not start anything at all, or just the thought of doing it can make them very anxious. Self-trust, self-confidence, and the mastery over the mind may be lost, and one may become hesitant and have difficulty making decisions (Norton & Asmundson, 2004).

Severe anxiety has a negative effect on the performance of all infected people, but it has a much greater and more destructive effect on students' performance and function (Dobson, 2012).

#### 2.2.2.1 Anxiety in Speaking

Anxiety in speaking in a community is an emotion that almost all human beings have experienced and it is perfectly normal. Even the world's greatest speakers have felt anxious in their first presentation as speakers (Witt & Behnke, 2006).

Sometimes this anxiety in speaking in public is so intense that people avoid it and are afraid to speak in public and avoid these situations as much as possible. Such people usually, in their previous experiences while speaking in public, have become subconsciously distressed and nervous, and their minds begin to have negative dialog. In such situations, sentences like you are ruining your reputation, you are not useful, you are not able to speak in public and... start to form in the mind (Sood & Kendall, 2007).

This fear and anxiety about speaking in public is usually due to one's unrealistic expectations of oneself. These expectations negatively affect the person's ability and performance. Improper upbringing and high expectations imposed by the family also cause this problem (Kendall, Hudson, Gosch, Flannery-Schroeder & Suveg, 2008).

One of the characteristics of people who suffer from this problem is poor interaction with others, so that in their daily communications, they rarely spend time with others (Shi, Brinthaupt & McCree, 2015). They also have a high potential for negative self-talk and constantly judge their abilities by negative self-talk in their minds (Stenling, Hassmén & Holmström, 2014). These people always think the worst possible way, and by analyzing too much of what happened to them

while speaking, they think that everything will go wrong. They try to find anything that has caused them anxiety (Hatzigeorgiadis & Biddle, 2008).

One of the most important factors that causes some people to be afraid of speaking in public is self-confidence (Park & Lee, 2005). Studies have shown that having strong friendships strengthens people's self-esteem. Some people expect their friends and relatives to fully support them. So they experience a lot of anxiety when they feel they are not fully supported. In contrast, people who know that their friends are with them, regardless of their performance and only for their own sake, have higher self-esteem (Page, Taylor, Suwanteerangkul & Novilla, 2005).

#### 2.2.2.2 Anxiety in Speaking a Foreign Language

When it comes to speaking in a foreign language class, a lot of students get stressed out. Usually, the palms of their hands start sweating, they experience abdominal cramps and they eventually try to get rid of the situation as soon as possible. This feeling usually occurs apart from students' level of language knowledge (Horwitz, 2010)

If this fear is severe and students are unable to control it, it may deprive them of the ability to speak and cause students to lose confidence. Or it may cause the conversation to be interrupted in the middle of a conversation (Tsiplakides & Keramida, 2009).

According to studies carried out, anxiety while speaking English prevents students from doing their tasks in class and has annoying symptoms, and ultimately reduces students' mastery of learning a foreign language (Na, 2007).

Some other studies show that anxiety hinders progress in learning and lowers the level of knowledge and affects people's ability to learn a second language (Hizwari, Irma, Hifzurrahman & NorHaizar, 2008).

#### 2.2.2.3The Importance of Anxiety in Learning

Anxiety plays a very important role in teaching and learning students (Moscaritolo, 2009). Thus, this effect is on active memory and makes it difficult for students to learn and retain information (Shackman et al., 2006). The results of studies have shown that students with higher levels of anxiety show less efficiency in

educational activities and the thinking component, and this ability has been significantly lower than other students (Eysenck, Payne & Derakshan, 2005).
Also, students with anxiety problems have lower levels of academic achievement as well as lower self-efficacy and self-concept (Urhahne, Chao, Florineth, Luttenberger & Paechter, 2011).
Anxiety is one of the most common barriers to academic performance reported by students. This factor plays a key role in students' health by affecting their mental health and sleep quality (Wahid et al., 2014). Anxiety also has a determining role in people's lives by affecting sleep, diet, physical health, self-esteem, social interactions and individual well-being. Controlling or reducing anxiety can have a significant impact on public health (Vogel, van de Looij-Jansen, Mieloo, Burdorf & de Waart, 2014).

## 2.3 Motivation

Motivation can be defined as processes such as needs, cognition, excitement, or external or internal events that give human behavior strength and direction. Motivation can also be the experience of desire or hatred. For example, the desire for something or the hatred and avoidance of something (Weiner, 2013).
Motivation can include both subjective and objective aspects. Motivation also requires underlying and biological layers to create a feeling of pleasure or pain. Animals can also ask for something to avoid something specific based on their perceptions and experiences (Heckhausen & Heckhausen, 2008).
A person's function depends on his abilities and motivation. The desire to do something requires one's ability to meet one's needs. Motivation can be defined in terms of practical behavior. For example, those who are motivated try harder than those who are not (Pinder, 2014). It can also be said that motivation is the cause of behavior. Motivation refers to the factors existing in a person that activate the behavior toward a goal. Motivation can be said to refer to a set of factors that compel a person to behave in a certain way and thus to achieve the desired goals (Elliot & Dweck, 2013).
The idea that human behavior is logical and is created for a number of reasons, is one of the old theories. But today, other theories have been proposed, each of

which deals with another part of this component. For example, one of the theories that deals with the component of motivation is incentive theory. Incentive theory states that motivation can be generated by two different factors (Logan, 1968): internal (intrinsic) motivation and external (extrinsic) motivation.

### 3.3.1 Intrinsic Motivation

Intrinsic motivation is referred to as the reward for inner satisfaction that results from a particular behavior. For example, an athlete enjoys playing football more than winning prizes in competitions. This kind of motivation is a kind of interest or pleasure rather than the external pleasure or happiness that comes from doing it. External motivation occurs when we are motivated to perform a behavior or participate in an activity to earn rewards or avoid punishment.

Examples of behaviors that result from external motivations include:

- Study because you want to get a good grade
- Clean your room to avoid punishing by your parents
- Participate in a sport to win
- Competition to win scholarships

In each of these examples, a motivated behavior is stimulated to gain rewards or avoid an undesirable outcome. People are involved in behavior not because they enjoy it or they find it satisfying, but to get something in return or to avoid something unpleasant.

Thus, the main difference between the two types of motivation is that external motivation is external to the individual while intrinsic motivation is internal. The researchers also found that two types of motivation can differ in how effective the driving (motivating) behavior is (Benabou & Tirole, 2003).

Some studies have shown that providing too many external rewards for an acceptable internal behavior can lead to a decrease in intrinsic motivation, a phenomenon known as the overly balanced effect. In one study, for example, children who were rewarded for playing with a toy that they were previously interested in playing with became less interested in it after their reward was considered illogical (Vallerand & Ratelle, 2002). This shows that external

motivation can be detrimental. External motivation can be helpful in some situations. This can be especially helpful when a person needs to complete an unpleasant task. However, external rewards can create benefits and participation in something in which the individual has no primary interest. External rewards can be used to motivate people to acquire new skills or knowledge. Once these basic skills are learned, people may inherently be more motivated to continue working. External rewards can also be a source of feedback, allowing people to achieve a performance that deserves reinforcement when they perform.

While most people say intrinsic motivation is the best, it's not always possible under some circumstances. In some cases, people simply don't want to get involved. Excessive rewards can be problematic, but when used properly, external motivations can be a useful tool. For example, external motivation can be used to help individuals complete schoolwork or homework in which they have no internal interests (Bates, 1979). Researchers have come to three initial conclusions about external rewards and their impact on intrinsic motivation:

Unexpected external rewards usually do not diminish the inherent (intrinsic) motivation. For example, if you get a good grade in the exam because you enjoy reading about the subject and the teacher decides to reward you with your favorite pizza place gift card, your motivation to learn about the subject will not be affected. However, this should be done with caution, as some people sometimes expect this (Greene & Lepper, 1974). Praise can help increase inner motivation. Researchers have found that providing positive praise and feedback when people do something better than others can improve intrinsic motivation (Onu, Kessler & Smith, 2016). External and intrinsic motivation can also both play an important role in learning settings. Some experts believe that the traditional emphasis on external rewards, such as grades, reports, and gold stars, weakens the existing internal motivation that students may have. Others suggest that these external motivations help students become more competent in the classroom, thus increasing intrinsic motivation (Guay, Vallerand & Blanchard, 2000).

### 2.3.2 The Importance of Motivation in Humans

Motivation is one of the most important components of cognition and emotion in human beings, in a way that if motivation gets into trouble in human beings, their daily activities will be disrupted. For example, to do daily chores both at home and at work requires motivation. Simply put, this is the motivation which makes people wake up in the morning, follow their career-related responsibilities and become effective (Cattell & Child, 1975).

### 2.3.3 The Importance of Motivation in Learning

The purpose and importance of motivation must be clearly understood by the teacher. The main goal of motivation is to stimulate and facilitate learning activities. Learning is an active process that must be driven and directed towards desirable goals by motivation (Wise, 2004).

Learning is a process that begins with the individual, but motivation must be used to stabilize learning. Having a strong and decisive motivation is valuable in all aspects. Motivations prepares and the more prepared you are, the more attention will be paid to the work being done and the sooner the desired result will be achieved. It is important to bring the learner to a level of readiness in which his or her alertness, strength, and enthusiasm for learning are also high. In an attempt to achieve goals, the higher the level of readiness, the more satisfactory the reaction will be and the useless tasks become annoying (Dörnyei, 1998; Schiefele, 1991).

One safe and effective way to help people learn is to encourage the learner to achieve goals that are important to them. A serious and major problem in motivating learners to do homework is to discover values that are strong enough to lead them towards an effective effort. A value that is very attractive to one person may have little or no appeal to another. In addition, the value that is very important and attractive to a person at a certain time may not be attractive and important at another time (Reeder et al., 2004). To understand these differences and fluctuations, the teacher must constantly be alert and vigilant because not all learners react similarly, and learning motivation should be numerous for different people. Understanding the nature of motivation is important because motivation

determines the intensity of the effort to learn. Creating motivation in learning activities helps the learner focus on what he or she is doing and thus gain satisfaction (Farrell, Johnston & Twynam, 1998). Continuous motivation is needed to help learners focus on the lessons learned. The importance of motivation in its simplest form can be seen in experiments on how humans and animals learn. In human learning, the most commonly used motivations are the motivation for mastery and the desire for social affirmation (Bellé, 2014). As experiments have shown, motivation for mastery is the most effective one in learning. The motivation for mastery can be used to guide the learning process using the teacher's signs, grades in the objective tests and recorded reports of the learner's progress (Stipek, 1993).

### 2.3.4 The Importance of Motivation in Learning a Foreign Language

The impact of motivation on language learning cannot be ignored. In fact, one of the main factors that can pave the way for a learner to learn is motivation. Motivation can be influenced by the level of attractiveness and participation of the task and activity that the learner is performing (Tannen, 1991).

Researchers have shown that those who can create an ideal image of themselves as the perfect speakers of that language have more success in achieving these goals. These people need to have a clear and definite roadmap for practices and strategies to achieve the intended goal (Martin & Hall, 1995).

When teaching a foreign language, the most difficult part is not the grammar of the language, the lack of vocabulary, or an appropriate understanding of it. It is about finding the motivation to continue learning the language. People's tastes, their past experiences, continuous successful exercises, and goal setting are very effective in increasing motivation in people to learn a foreign language.

In fact, motivation plays a key role in learning a foreign language. The definition of the motivational basis for acquiring a second and foreign language has been at the center of research and debate for many years (Schmidt, Boraie & Kassabgy, 1996).

In a study of the impact of motivation on learning Japanese language conducted on 107 high school students, the results showed that motivation is the best predictor of Japanese language development (Oxford, Park- Oh, It & Sumrall, 1993).
Also, in a study conducted on 201 school students on the effect of motivational processes on language learning, the results confirmed the existence of motivational processes based on attitude (integration motivation) and self-confidence (Bećirović, 2017).

## 2.4 Storytelling

Storytelling has been one of the very old ways of connecting one generation to another. Storytelling is an art form that communicates with the audience based on creative solutions. This type of communication has developed over the centuries, and although its core that is based on sharing experiences with the audience has remained, the way stories are presented has changed (Fog, Budtz & Yakaboylu, 2005).
Many researchers believe that storytelling can play an important role in language development. Other researchers have suggested that storytelling can be a powerful way to teach languages. This method is an effective solution for strengthening listening, speaking, writing and reading (Ellis & Brewster, 2014).
Storytelling interacts with listeners who may be one or more than one using presentations through sound and specific situations (Perron, 2007). Storytelling is different from reading a story from paper or memory. Storytelling is an interactive way of using words and gestures to show a plot of a story that stimulates the listener's imagination by presenting it. Storytelling also organizes story information in a meaningful texture that creates a connection by interacting with emotions (Sax, 2006).

### 2.4.1 History of Storytelling

Storytelling is one of the ways of communication that has been used since ancient times. Storytellers told stories of their experiences dealing with animals or other tribes.

The first storytellers told their stories by drawing pictures on the walls of caves or rock cliffs. Those images have been used to express the effects of the forces of nature on humans and their results. In addition, the stories told at the time with pictures on the walls of the caves were about their gods and their heroes, whom the storytellers tried to remind the rest of the people of (Stone-Mediatore, 2016).
In general, storytelling has been one of the main and primary ways since ancient times to communicate and share experiences with other listeners.

### 2.4.2 Types of Storytelling in a Foreign Language Class

Storytelling is one of the key ways to help students use their imagination to improve their creativity in giving presentations and try to solve lesson problems. It is also important for students to know that there are different ways to tell their stories better to others (VanSledright & Brophy, 1992).
The stories that students use to present in the classroom are usually modeled on traditional genres such as fairy tales, fables, folk tales, myths, and so on (Bosma, 1992).
All of the different ways mentioned can be used in language classes by students to get the meaning and moral outcome of the story across. Students need to learn the different ways in which a story can be told.

### 2.4.3 Storytelling Strategies

Storytelling plays an important role in the application and improvement of vocabulary and structure skills that are needed in the early stages of foreign language teaching and learning by actively engaging students in such activities. Storytelling also requires listening, watching, reading and writing. Also, storytelling has a great impact on improving verbal skills. Finally, storytelling can provide a good opportunity for the speaker to strengthen his vocabulary skills in the best way (learning vocabulary in meaningful context) by using new words in a meaningful time and context (Howard-Malverde, 1989).
Storytelling allows students to change from assuming a simple passive role in the classroom to an active participant in language classes, and by interacting actively

with others based on social backgrounds, they can work together effectively to improve social skills such as listening and conversation (Kirkwood, 1983).

### 2.4.4 Storytelling Activities

Storytelling in a foreign language classroom should not be seen as a hobby or peripheral activity for students. Based on the students' interests, it should be used in order to involve them in the educational process in the classroom. Storytelling should also encourage students to be active participants in the classroom (Wright, Diener & Kemp, 2013).

There are several ways to tell a story in class. Free discussion, story completion, story retelling, and role-playing can be used as storytelling methods in the language classroom.

## 2.5 Digital Storytelling

Nowadays, teachers need to teach in new ways because students will welcome and pay more attention to them when their lessons contain interesting information and are presented through new methods.

Also, new methods based on interaction with other students are one of the best ways to teach a foreign language. In these methods, communication with other classmates is one of the principles of learning. Furthermore, the use of technology-based methods can lead to the creation of a platform for the collaborative relationships of classmates with one another, which also increases the efficiency and effectiveness of learning (Rao, 2013).

At present, advances in technology allow teachers to use interesting methods and activities of interest for students to teach. One of these methods for teaching and learning a foreign language is digital storytelling (Lambert & Hessler, 2018).

Digital storytelling in simple language means using technology to tell a story. As mentioned earlier, digital storytelling can be considered as ancient images and designs. In ancient times, humans also used drawings, patterns, and images on the walls of caves to tell stories. Even today, digital storytelling, with the help of digital technology and platforms or virtual multimedia software, tries to tell and explain stories or provide information (Sadik, 2008).

Digital storytelling can be considered a tool for teaching. The teaching method, which is based on digital storytelling, benefits from the components of communication and storytelling or providing information. Therefore, in this way of teaching, communication, conversation, interaction and speech skills are strengthened. Another advantage of using digital storytelling in teaching is the integration of skills, practices, and learning tools (McLellan, 2007).

As a result, digital storytelling is an appropriate teaching method for strengthening general language and communication skills, which are the essential parts of learning a foreign language. Digital storytelling provides teaching practices and exercises that facilitate learning a foreign language and make newly learnt material more practical and repetitive (Castañeda, 2013).

### 2.5.1 Digital Storytelling as a Classroom Activity

Digital storytelling is a type of new strategy which is designed and built based on digital multimedia and consists of images, sounds or video. A file created on this basis usually deals with the expression of a particular idea or the presentation of topics of interest, or even with knowledge or scientific content (Xu, Park & Baek, 2011). Also, in presenting these ideas in the form of digital storytelling, information is exchanged between students, and this exchange is based on the communication between students. Digital storytelling as a class activity usually consists of three stages

1- Planning: At this stage the teacher usually guides the student regarding what topics he can choose or tells the student the range of topics to choose. Also, in some cases, the teacher helps the student to formulate the subject that is of interest to the student.
2- Production: At this stage, the student has collected his media materials that he needs to present. Putting them together, the student tries to integrate the content of the intended subject. For example, this file can contain images, with the background sound of the speaker, and finally it can end with the presentation of a video related to the subject.
3- Presentation: At this stage, the student must present his produced content. He/she can present it at the beginning of class and ask other students to have

a free discussion on the presented subject. The student can also share his/her file in cyberspace with others and ask viewers to post their feedback and comments (Theune, Linssen & Alofs, 2013).

### 2.5.2 Advantages of Digital Storytelling

Digital storytelling is a great tool for teaching and learning students at different ages. This approach helps students to focus on their learning by engaging students. A lot of attention is paid to involve students in their favorite subjects, which can also facilitate teaching and learning for students (Hronova, 2011).

Students also, by providing and engaging with what they have chosen, will increase their motivation and learn more. Other students have the opportunity to participate in topics such as free discussion at the end of the presentation or to produce content in another language, which strengthens their conversation and reduces their anxiety while speaking to others (Yang & Wu, 2012).

Digital storytelling uses new teaching methods and the use of technology, multimedia and everyday virtual spaces that students often use, making students less anxious about their mentality towards traditional way of teaching language classes and feel more comfortable.

By teaching through digital storytelling to students who feel anxious to speak another language, they can find other ways to speak and connect with others (James, 2013).

All of the above-mentioned has ultimately led to the subject matter of this study which is a study of the impact of digital storytelling on motivation and anxiety of speaking to others in a foreign language. The following section addresses studies concerning the effects of digital storytelling strategies on anxiety and motivation in the Foreign Language classroom.

### 2.5.3 Studies Related to the Impact of Digital Storytelling on Anxiety and Motivation in a Foreign Language Class

In a study conducted in 2014 by Yuichi Ono in Japan, the motivational effects of digital storytelling on the English language of Japanese students were examined. In

this study, two groups were used to study the research hypothesis. The main purpose of this study was to investigate the effects of a project-based learning approach to construct digital stories for presentation in English language classes and its effectiveness under one-to-one computer-assisted language learning.

With statistical analysis conducted in this study, the author suggests that a project-based learning approach to construct digital presentations naturally reduces students' anxiety and also improves deep thinking as well as better performance in various English language skills (Ono, 2014).

In 2012, a study entitled *Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation*: *A year-long experimental study* was published by Ya Ting et al. The aim of this study was to investigate the impact of digital storytelling on academic achievement, critical thinking and learning motivation in English-speaking students as a foreign language in high school seniors. The study lasted one year and invited 110 tenth graders from two English classes to study. The data collected from the questionnaires were analyzed by statistical tests of Ancova and Mancova. The results showed that students who learned English through digital storytelling were significantly better on the aforementioned independent variables than a group who experienced an information technology integrated instruction-lecture type approach (Yang & Wu, 2012).

In a study entitled *Developing English Speaking Skills of Thai Undergraduate Students by Digital Storytelling through Websites* launched in 2013 by Manussanun and colleagues, they highlighted the importance of digital storytelling in education. The aim of this study was to investigate the effect of digital storytelling on speaking skills and student learning satisfaction. In this study, 50 undergraduate students who had enrolled to learn English were participants. Pre-test and post-test measures were also used to collect data. Students were asked to prepare their presentations based on the digital storytelling method and upload them on the website as well as presenting in class in the presence of their classmates. Eventually, all the data were collected and statistically analyzed. The results showed that students had a significant improvement in speaking skills. This method also became popular with teachers because it helped them to design a more

effective teaching method so that they can train more active students as self-taught learners (Somdee & Suppasetseree, 2013). In a study conducted in 2014 by Rokni et al., they examined the effectiveness of two storytelling methods. This study was titled *Digital storytelling in EFL classrooms: The effect on the oral performance*. This study was performed on 42 students between 19 and 25 years of age in Iran. The methods studied in this study were different types of storytelling in the language class. The students were divided into two groups. In one group, the teaching method was taught in the traditional way of storytelling and in the other class, digital English storytelling was taught. After 12 sessions, students were given a speaking test as well as a motivation questionnaire. The results of this study indicated the effectiveness of digital storytelling on speaking skills and students' motivation (Abdolmanafi-Rokni & Qarajeh, 2014).

There are only a small number of empirical studies that actually measure the effect of a digital storytelling strategy on motivation, performance or anxiety but the results of this small set of studies is positive. These results, as well as the conceptual arguments for the approach, argue for the value of conducting additional empirical studies to measure and validate effects of the strategy.

# Chapter Three

# Research Methodology

## 3.1 Introduction

Chapter three consists of five parts which describes the procedure of the study and includes the research methodology and analysis. The first part explains the definition of the type of research chosen. The second part is the research setting which shows the place and the time the research was done. The third part is the research participant which explains the statistical population of the study. The fourth part is the research instruments and data collection technique which explain the research instruments employed in carrying out the research. The last part is the process of research implementation and data analysis which explains what statistical analysis technique was used and how the findings were analyzed to answer the research questions.

## 3.2 Type of Research

In conducting this research, choosing an appropriate research type was needed in order to answer the research questions. The purpose of this study was to compare the effectiveness of digital storytelling (DST) on learners' anxiety and motivation in speaking. The nature of this study in terms of objective lies among fundamental (practical) studies and in terms of implementation method lies among quasi-experimental research. Therefore, quasi-experimental research was considered as the appropriate method of conducting this study because this research type is usually used in social conditions where there are some differences, exceptions, limitations, factors and variables which seem to be out of control. Overall, this research type helps present the result of the study more reasonably and objectively.

## 3.3 Research Design

The present study is an evaluative research design in the form of a group pre-test and post-test design with an intervention group (taught by DST) whose collected data and its quantitative data analysis examines the effect of digital storytelling on motivation and anxiety of EFL learners in Iran.

| Groups | Pre-Test | Independent Variable | Post-Test |
|---|---|---|---|
| **Intervention Group** | **T1** | DST | **T2** |

## 3.4 Statistical Sample and Sampling Method

Our intervention group includes 13 students. The participants of the study who are the native speakers of Persian include one group of Iranian male adult EFL learners selected based on convenient sampling method. All subjects had studied English in the same school. Therefore, they were judged to be almost at the same level of language proficiency, namely pre-intermediate level of English proficiency. Therefore, the participants are in the pre-intermediate level of English and they have attended English conversation classes with an expectation of improving their communication and speaking skills in a language institute called Tehran International Language School in Tehran, Iran. According to the inclusion criteria, the age range for participants is between 18 and older. Therefore, the participants will be required to be at least 18 years of age. The teachers in the school are B.A/ M.A or Ph.D. educated in the fields of English literature or translation with many years of EFL/ESL teaching experience. Our intervention group participants were taught online by the researcher and they met regularly for two sessions of one hour and a half per week. The online course lasted 10 sessions including the final test session. The course took about a month with 15 hours of teaching in total. Participants were informed that participation is voluntary and they always have the option of opting out of the study, without consequence. The first assessment started with the pre-test in the form of computer, speaking anxiety and motivation questionnaires.

**Criteria for Inclusion (Entry)**

1- Having a minimum age of 18 and older

2. Enrolled in a class to learn English as a second language

**Exclusion Criteria**

1. Absence in more than two sessions
2. Questionnaires not completed
3. Participant opts out of the research process

## 3.5 Research Instruments

### 3.5.1 Computer Anxiety Rating Scale (CARS)

The survey instrument that was used to collect the data on computer anxiety was a modified version of the Computer Anxiety Rating Scale (CARS) developed by Heinssen, Glass & Knight (1987). The modified CARS instrument is a 20-item, five-point scale which is mainly about the students' computer anxiety. The options for each item ranges from 1 (strongly disagree) to 5 (strongly agree) in order to show their degree of agreement with the statements.

### 3.5.2 Foreign Language Speaking Anxiety Questionnaire

The EFL speaking anxiety scale was adapted from the Foreign Language Classroom Anxiety Scale (FLCAS) developed by Horwitz, Horwitz and Cope (1986) and is called the foreign language speaking anxiety (FLSA) questionnaire. It was designed by choosing 18 items from 33 items of FLCAS. These items were also used by Saltan (2003) and Öztürk (2009) and found to be directly related to foreign language speaking anxiety. The questionnaire's reliability was calculated using Cronbach's alpha for this study. The items in the survey will reveal whether students experience speaking anxiety and its degree.

The questionnaire has two parts. The first part of the questionnaire includes information about the participants' demographic background and their exposure to English. The second part, consisting of 18 Likert-scale items, is mainly about the students' foreign language speaking anxiety. The options for each item ranges from 1 (strongly disagree) to 5 (strongly agree) in order to show their degree of agreement with the statements.

### 3.5.3 Second Language Speaking Anxiety Questionnaire

Since FLCAS was validated to reflect the level of general classroom anxiety, it may not be considered appropriate to consider its result as the only index of the anxiety the learners feel when they are talking to others. Thus, the second language speaking anxiety scale (SLSAS), which was piloted and refined based on empirical and theoretical justifications (Woodrow, 2003), was used to provide a more precise

picture of the participants' anxiety levels with speaking before, and after, the intervention.

The questionnaire consists of twelve items on a five-point Likert type scale. The items reflect the communicative situations the participants were likely to encounter according to the communicative setting, interlocutor (speaker/listener) variables and the nature of the communication.

### 3.5.4 Motivation Questionnaire

For the purpose of the study, before and after the experiment, the researcher distributed motivation questionnaires to the learners in the intervention group to make certain how much the techniques applied in the class were useful in affecting their motivation to learn. The instrument used in this study was a motivational questionnaire. The motivational questionnaire was adopted from the questionnaire developed by Gardner's (1985) Attitude Motivation Test Battery (AMTB) with the integrative and instrumental orientation scales. The questionnaire consists of 20 five-point Likert (1932) scale items (on a scale of 1-5, ranging from strongly disagree = 1 to strongly agree = 5). In regard to the motivational survey, the researcher chose statements that were most suitable for Iranian students and the reality of their cultural context. Motivation was measured then again in the post-treatment questionnaire with the same items in the pre-test.

## 3.6 Digital Storytelling Training Protocol (1):

Digital storytelling is a type of practice for creating multimedia files by combining digital items such as photos, text, video clips, animations, and songs by computer software. Digital storytelling usually has a narrative that is emotional to the audience. To use digital storytelling by a computer, these programs need to be computer-formatted so that the material can be downloaded to any digital device. Digital storytelling should also be limited to a few minutes.

Types of digital storytelling include: 1- Personal narratives 2- Historical documentation 3- Informative stories. Personal narratives are usually made up of influential events throughout one's life that contain material that either the person is proud of or a story in which an important event has taken place. Personal

narratives have numerous benefits in that they create cross-cultural debate, or emotional engagement with the spokesperson, which facilitates the formation of group discussion.

Historical documentation also provides insights into the fact that people understand what happened in the past. To enact this model of digital storytelling, people can use historical photos or part of an old newspaper, speech texts. Perhaps the most used in digital storytelling is instructive stories that use scientific, medical, artistic, or educational material to reach a final conclusion and discuss it. The steps of digital storytelling are as follows:

Table 3-1

A12-step process for digital storytelling

| Step | Task | Recommendations |
|---|---|---|
| 1 | Choose a topic | Begin by thinking of the purpose of the story and define the audience. |
| 2 | Conduct research on the topic | You can use online search engines, but don't forget that the library can also be a useful research tool |
| 3 | Write the first draft of the script | This will serve as the audio narration for your story. Read aloud what you have written. Make sure that the purpose of the story is clearly articulated and includes an identifiable point of view |
| | Script tip 1: Keep your script small and focused | You are writing a script for a digital story which is typically only a few minutes long. Focusing on a specific problem or topic will help you create a better digital story |
| | Script tip 2: Make it personal | Your digital story is unique. It is your story, and the audience will want to hear it from your perspective. You may even need to reveal personal details in the story to reach an emotional depth, although it is up to you to decide what details you wish to share with others |
| | Script tip 3: Understand the story arc | Most stories consist of three parts: a beginning, middle, and end. The beginning is where you set the scene and begin the plot. The middle is where you provide more details about the topic or problem you are trying to explain. The story should be building toward a climax or resolution. The end is where the questions are resolved. Will new knowledge make you stronger? Will you now be able to accomplish greater things? What happens next in your life? These questions will be answered and new insight will be revealed. The conclusion of your story should connect back to the beginning to form a thematic arc. |
| 4 | Receive feedback on the script | Share your script with others and ask them to give you feedback on what they thought might make your story clearer or more useful. |

| | | |
|---|---|---|
| | Revise the script | Use the feedback you received to improve the next version of your script. Scriptwriting is an iterative process and it takes several attempts to get good results |
| | Find, create, and add images | Use an online search tool specifically for images, such as Google Image Search. You can search for photographs, drawings, clip art, maps, charts, and more. Don't forget that you can use photos you take yourself with a digital camera |
| 7 | Respect copyrights | Look for material that is in the public domain or has a Creative Commons license. |
| 8 | Create a storyboard | The storyboard is a written or a graphical overview of all of the elements you plan to include in the digital story. It serves as a blueprint or an advanced organizer as you plan to construct your digital story. Storyboards can help you visualize your story before it is created, when it is easier to make changes or add new content |
| 9 | Record audio narration and add background music (optional) | Try to use a high-quality microphone or a voice recording app on a smartphone. Music that is appropriate to the theme of the story can add richness by complementing the narration. There are many great sites online that provide copyright-free music at no cost |
| 10 | Build the digital story | Select the software tool you will use to create your digital story |
| 11 | Give and receive feedback on the digital story | Participate in a Story Circle: Share your story with others and ask them to give you feedback on how to improve the digital version |
| 12 | Publish the digital story | Share your digital story online at locations such as YouTube, Google Drive, Microsoft One Drive, Dropbox, etc. |

The basics used in digital storytelling in learning English as a second language are based on the protocol outlined above. Digital storytelling in English classes is based on the teamwork of the lecturer and the students in the class. At the beginning of the session, the teacher or one of the students, using digital multimedia files, narrates his or her story that is emotional and promotes discussion and participation of other people in the class.

## 3.7 Procedure

First, after registering the applicants who wished to participate in the study and obtaining informed consent, the applicants were placed in the intervention group. The applicants were presented with anxiety and motivation questionnaires in class. In the intervention group, the subjects were trained in the digital storytelling method.

During the initial sessions, some time was spent so that the participants of the intervention group could introduce themselves to the rest of the group. The teacher explained to the participants that there is no sense of judgment in the class and the members can easily talk and ask the teacher any questions they have. In continuation, there was a complete overview of the class and sessions on how to use digital storytelling. In the initial sessions, most of the talk was on motivating and reducing anxiety in participants through digital storytelling.

In these sessions, the teacher introduced the tools used in the study before the study began. All participants in this study had to fully learn how to use these tools. The teacher taught the subjects through the software mentioned in the digital storytelling method. For example, he/she used PowerPoint to present lesson slides that contain clip art or images. They can make short and simple video clips using blaze video Smartshow. They can also use Instagram to create and deliver teaching posts containing classroom-based content and share with Instagram audiences who are also the participants of this study. The teacher also uploaded clips or his talk onto Apparat to get feedback from others. The initial sessions were allocated to such practices.

In the middle sessions, participants are asked to start doing tasks with the mentioned software as well as the topics they are interested in. Attendees should select a topic and, with the help of their teacher, present those topics using the tools mentioned and tell a story. In the end, these presentations receive feedback and will be discussed by the class members and the teacher.

During the final sessions, the presentations will be reviewed and surveyed by the learners and there will be a discussion on how the use of the mentioned software will better facilitate the transfer of the content. Learners also discuss how presentations can be improved and what factors cause to yield a better presentation. After 10 sessions of one hour and a half, which is 15 hours in total over a month from the beginning, the questionnaires were presented again to the applicants and finally the data was analyzed using SPSS 26 software.

The design of this research was “single-subject research design” which offer much more flexibility in the implementation and evaluation of intervention. According to the protocol in the study, learners were asked to choose a topic of interest which

encourages discussion and idea-sharing. They were also required to do research about the topic and find texts, pictures, audio and video materials. They then worked collaboratively to put all the materials using softwares like powerpoint to create a multimedia context. The lesson presentation consists of 3 parts: presentation, practice and production. In the presentation, leaners who are supposed to handle the class will introduce the topic and ask other students some warm-up questions related to the topic. Elicitation gets the students involved in question-and- answer process and it is much better than giving 'lectures' which maximizes TTT (Teacher Talking Time). Then, lexis of the lesson topic which is the building block of the language and a powerful carrier of meaning is introduced through pictures and sentence examples to provide learners with audio & video input. The purpose of teaching key elements to clarify potentially problematic words in context. Teaching lexis trough visuals makes them more meaningful. Vocabulary learning in a meaningful context in turn improves intelligible communication. Now that the learners are familiar with the topic as well as the new vocabulary, learners have the opportunity to show their creativity by telling the story in their own version of what happens in the short video and receive friendly and constructive feedback from their peers. Furthermore, learners have the opportunity to do an audio task plus some related comprehension questions to make sure they have understood the topic well and they have received enough comprehensible input. Finally, other learners are invited to tell their own version of the story to the whole class and receive feedback.

## 3.8 Data Analysis Method

Descriptive and inferential statistics were used to analyze the research data. In the descriptive section, statistical indices such as frequency, mean, standard deviation, tables and statistical graphs are used. Also in the inferential section, paired sample t-test as well as Wilcoxon test were used. To test the normal distribution of data in the examined group, two indicators like skewness and kurtosis were examined. SPSS software version 26 was used for data extraction and statistical analysis.

# Chapter 4

# RESEARCH RESULTS & DISCUSSION

## 4.1 Introduction

Statistics is the language of science and logic. Statistics is the science of collecting data for analysis to have a better interpretation and to give meaning to it. Statistical analysis is divided into two parts. One is the descriptive statistics that describes and organizes the data to specify their status by determining statistical indexes which include mean, median, mode, and variance and so on. Another part is the inferential statistics which tests hypotheses to either accept or reject them.

In the first chapter of this thesis, the researcher first realized the concern and problem based on the gap between the current and optimal situation that could not be answered and resolved by the secondary data. After searching in the research literature and the relevant field, first the researcher found his theoretical framework to support the research hypotheses. Then, he found the title of the research as well as the research propositions. Finally, the generalities of the research were examined in the first chapter.

Then, in the second chapter, the theoretical literature and research background were interpreted and analyzed based on the keywords of the research. Finally, research studies found were classified and interpreted in support of the developed hypotheses and reviewed as a narrative. Finally, in the third chapter, i.e. research methodology, since the paradigm (philosophical presupposition) of research is a meta-positivist presupposition and the researcher has used this opportunity as an exercise in choosing the research approach, the quantitative approach to the present (research) is the most appropriate descriptive approach and strategy to examine the current situation and to achieve the objectives of the research. Also, the researcher uses tactics such as checking the validity and reliability of the structure, data pre-screening, etc., which express the format of this research to collect numerical data. The standard questionnaire selected itself from the modern literature and will ultimately analyze and interpret numerical data in the form of descriptive statistics and tests of significance.

In the present chapter, the researcher first classifies and interprets demographic data, indicators (questions) and variables in the form of descriptive statistics, and appropriate tables and graphs will be presented for them. Then the data collected from the standard research questionnaires in the form of Likert scales will be pre-screened before the main analytical processing and to remove problems in the data. Finally, the screened data from the data pre-processing stage is subjected to tests of inferential statistics to examine the objectives of the research, which is to test the research hypotheses.

This chapter deals with and presents the findings of this quasi-experimental research to address the two main purposes of this study. The results are divided into two sections. The first section presents and discusses if using digital storytelling increases ESL learners' motivation to talk to others in EFL. The second section is the research result and discussion of the question if using digital storytelling reduces ESL learners' anxiety of learners to talk to others in EFL.

## 4.2 Descriptive Statistics

Descriptive statistics in its scientific definition examines the characteristics of the research sample and classifies and interprets the demographic variables, indicators and the main variables of the research. Descriptive statistics describes the research sample in the form of appropriate tables and graphs to compare sample variables (Stevens, 2002).

### 4.2.1 Descriptive Statistics Demographic Variables

#### 4.2.1.1 Descriptive statistics of ordinal and nominal demographic variables

*A: Composition of age status of participants*

According to the frequency observed in the observed sample members, 76.9% of the respondents are between the age range of 18-20 and 23.1% of them are between the age range of 31-35.

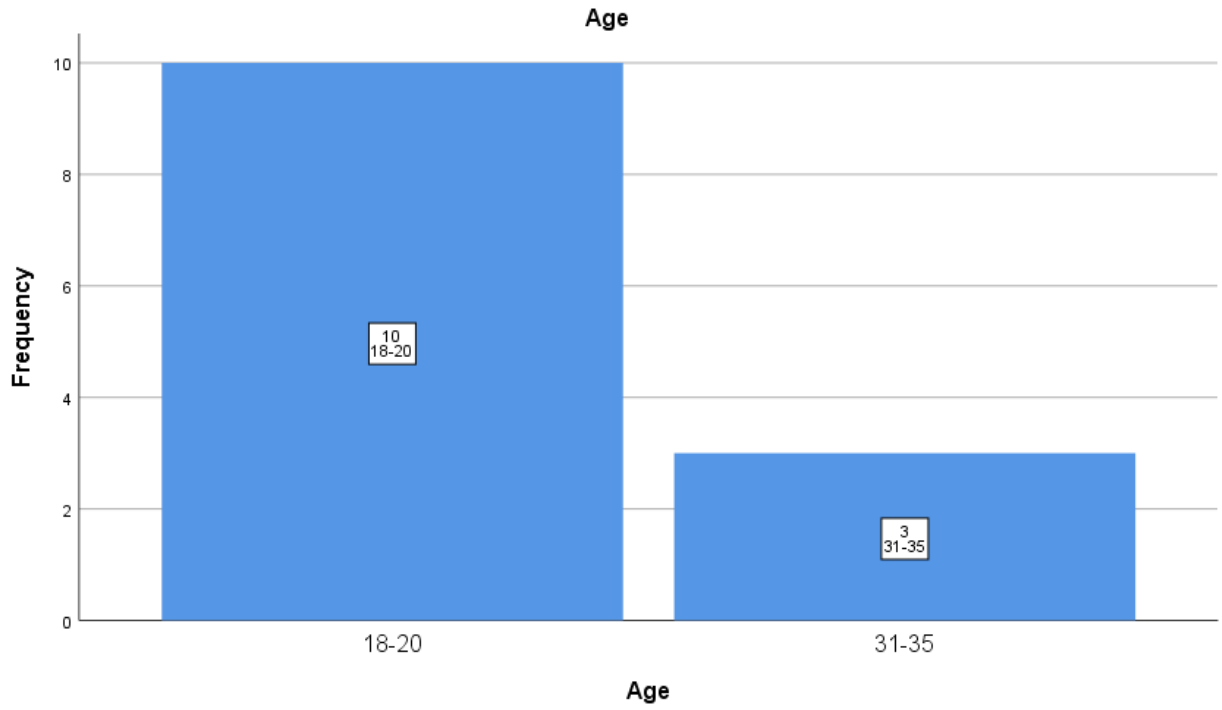
Table 4-1

Composition of age status of participants

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 18-20 | 10 | 76.9 | 76.9 | 76.9 |
| | 31-35 | 3 | 23.1 | 23.1 | 100.0 |
| | Total | 13 | 100.0 | 100.0 | |

Figure 4-1

Age composition chart




*B: Composition of educational status of participants*

According to the frequency observed in the observed sample members, 76.9% of the respondents are at high school level and 23.1% of them are hold Master's Degree.

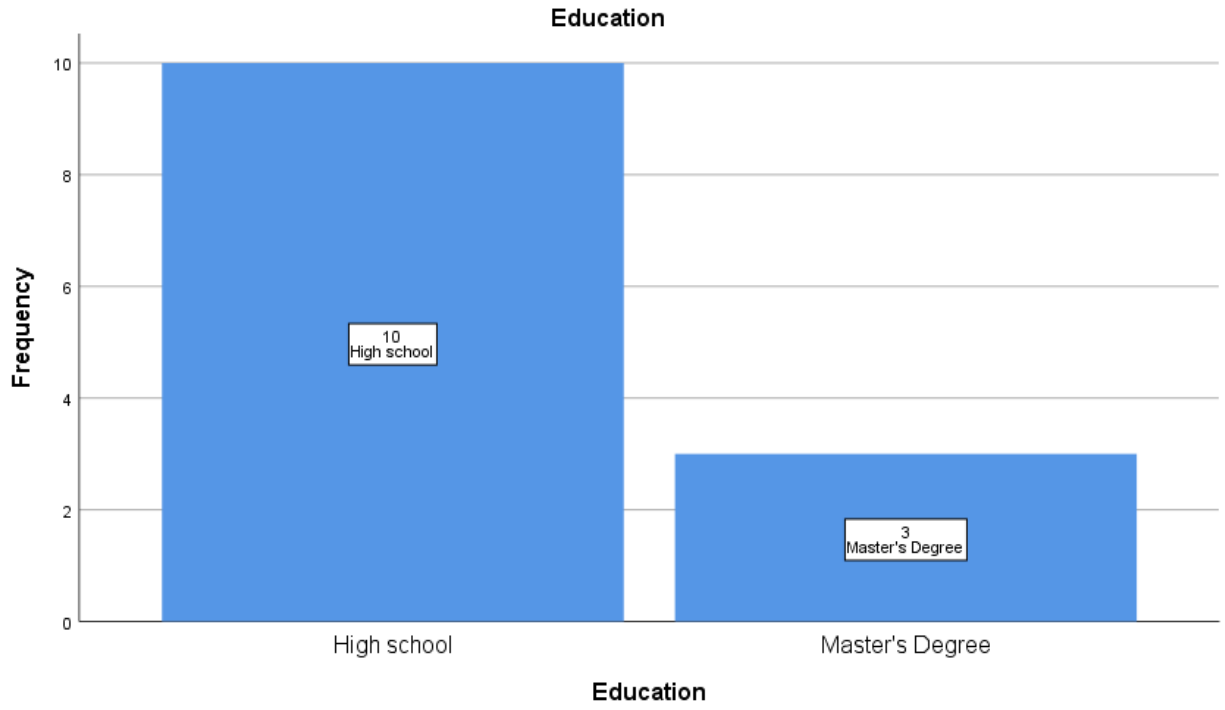
Table 4-2

Composition of educational status of participants

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | High school | 10 | 76.9 | 76.9 | 76.9 |
| | Master's Degree | 3 | 23.1 | 23.1 | 100.0 |
| | Total | 13 | 100.0 | 100.0 | |

Figure 4-2

Education composition chart




*C: Participants' living abroad experience*

According to the frequency observed in the observed sample members, 69.2% of the respondents have the experience of living abroad and 30.8% of them do not.

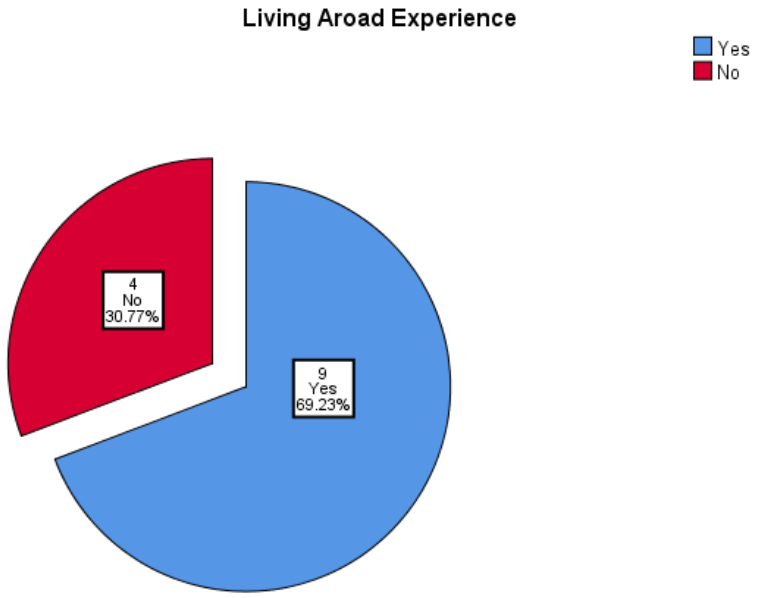
Table 4-3

Composition of participants' living abroad experience

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Yes | 9 | 69.2 | 69.2 | 69.2 |
| | No | 4 | 30.8 | 30.8 | 100.0 |
| | Total | 13 | 100.0 | 100.0 | |

Figure 4-3

Participants' living abroad experience chart




*D: Participants' knowledge and skill with computer*

According to the frequency observed in the observed sample members, 23.1% of the respondents have little computer knowledge and skills, 53.8% are knowledgeable with computer and possess skills and 23.1% are very knowledgeable and skilled with computers.

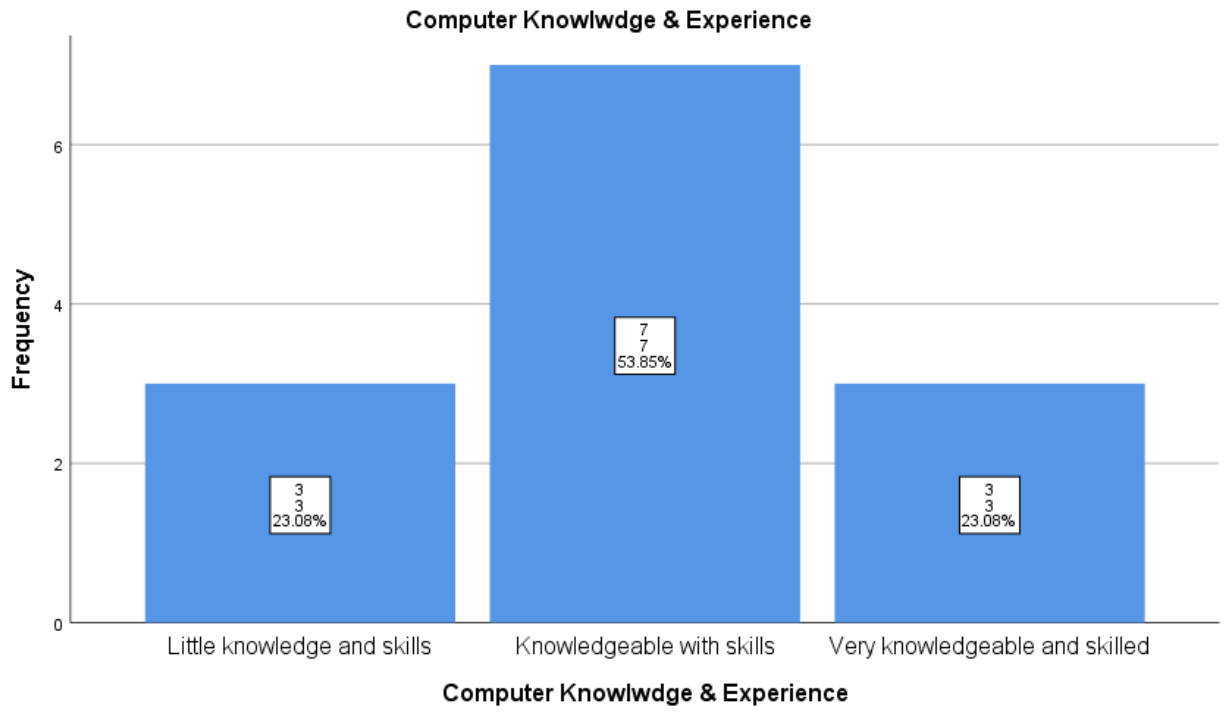
Table 4-4

Composition of participants' knowledge and skill with computer

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Little knowledge and skills | 3 | 23.1 | 23.1 | 23.1 |
| | Knowledgeable with skills | 7 | 53.8 | 53.8 | 76.9 |
| | Very knowledgeable and skilled | 3 | 23.1 | 23.1 | 100.0 |
| | Total | 13 | 100.0 | 100.0 | |

Figure 4-4

Participants' computer knowledge and experience chart




*E: Participants' number of hours using computer*

According to the frequency observed in the observed sample, 53.8% of the respondents use computers more than 5 hours a week, 38.5% use their computers 1 to 4 hours a week and 7.7% less than 1 hour a week.

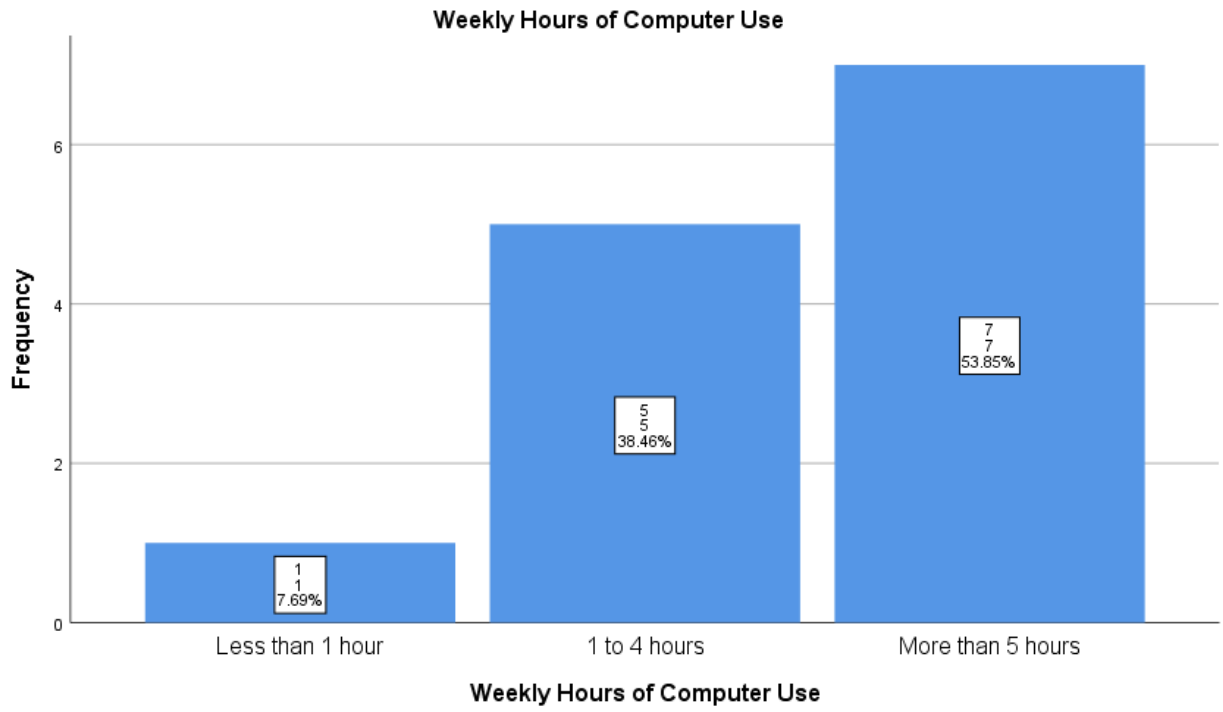
Table 4-5

Weekly hours of computer use

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Less than 1 hour | 1 | 7.7 | 7.7 | 7.7 |
| | 1 to 4 hours | 5 | 38.5 | 38.5 | 46.2 |
| | More than 5 hours | 7 | 53.8 | 53.8 | 100.0 |
| | Total | 13 | 100.0 | 100.0 | |

Figure 4-5

Participants' weekly hours of computer use chart



## 4.2.2 Descriptive statistics of indicators measuring Computer, EFL & ESL anxiety and motivation variables

Table 4-6

Table of descriptive statistics of indicators measuring Computer, EFL & ESL anxiety and motivation variables

| | N | | | Minimum | Maximum | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | means | Std.Dev | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| I feel insecure about my ability to interpret and use new computer applications. | 13 | 2.31 | 1.032 | 1 | 4 | .344 | .616 | -.772 | 1.191 |
| I look forward to using a computer on my job. | 13 | 1.77 | 0832 | 1 | 3 | .498 | .616 | -1.339 | 1.191 |
| I do not think I would be able to learn a new computer language.I do not think I would be able to learn a new computer language. | 13 | 2.08 | 1.115 | 1 | 4 | .678 | .616 | -.760 | 1.191 |
| I am confident I can learn computer skills | 13 | 1.54 | 0660 | 1 | 3 | .863 | .616 | -.025 | 1.191 |
| Anyone can learn to use a computer if they are patient and motivated. | 13 | 1.69 | .630 | 1 | 3 | .307 | .616 | -.317 | 1.191 |
| Learning to operate a computer is like learning any new skill – the more you practice the better you become. | 13 | 1.54 | .877 | 1 | 4 | 2.052 | .616 | 4.827 | 1.191 |
| I am afraid that if I begin to use computers I will become dependent on them and lose some of my reasoning skills. | 13 | 2.54 | 1.198 | 1 | 5 | .752 | .616 | -.073 | 1.191 |
| I am sure that with time and practice I will be as comfortable working with computers as I am working with basic word processing software. | 13 | 1.77 | .927 | 1 | 4 | 1.274 | .616 | 1.524 | 1.191 |
| I feel that I will be able to keep up with the advances happening in the computer field. | 13 | 2.00 | .816 | 1 | 4 | 1.086 | .616 | 2.277 | 1.191 |
| I dislike working with machines that are smarter than I am. | 13 | 2.23 | 1.013 | 1 | 4 | .599 | .616 | -.363 | 1.191 |
| I feel apprehensive about using computers. | 13 | 2.62 | 1.387 | 1 | 5 | .161 | .616 | -1.282 | 1.191 |
| I have difficulty in understanding how a computer works. | 13 | 1.85 | .987 | 1 | 4 | .967 | .616 | .160 | 1.191 |
| It scares me to think that I could cause the computer to destroy a large amount of information by hitting the wrong key. | 13 | 2.62 | 1.502 | 1 | 5 | .435 | .616 | -1.226 | 1.191 |
| I hesitate to use a computer for fear of making mistakes that I cannot correct. | 13 | 2.00 | 1.225 | 1 | 4 | .965 | .616 | -.618 | 1.191 |
| You have to be a genius to understand all the special commands contained in most computer software. | 13 | 2.54 | 1.050 | 1 | 5 | 1.157 | .616 | 1.472 | 1.191 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| If given the opportunity I would like to learn about and use computers. | 13 | 1.46 | .776 | 1 | 3 | 1.413 | .616 | .546 | 1.191 |
| I have avoided computers because they are unfamiliar and somewhat intimidating to me. | 13 | 1.92 | .954 | 1 | 4 | .854 | .616 | .221 | 1.191 |
| I feel computers are necessary tools in both educational and work settings. | 13 | 1.39 | .650 | 1 | 3 | 1.576 | .616 | 1.801 | 1.191 |
| The challenge of learning computers is exciting. | 13 | .92 | .954 | 1 | 4 | .854 | .616 | .221 | 1.191 |
| I feel that understanding computers will make me a more productive individual. | 13 | 4.31 | .630 | 3 | 5 | -.307 | .616 | -.317 | 1.191 |
| I am never quite sure of myself when I am speaking in English. | 13 | 3.00 | 1.528 | 1 | 5 | .000 | .616 | -1.395 | 1.191 |
| I am afraid of making mistakes in English classes. | 13 | 3.00 | 1.354 | 1 | 5 | .000 | .616 | -1.056 | 1.191 |
| I tremble when I know that I am going to be called on in English classes. | 13 | 2.77 | 1.363 | 1 | 5 | .023 | .616 | -1.358 | 1.191 |
| I get frightened when I don't understand what the teacher is saying in English. | 13 | 2.85 | 1.144 | 1 | 4 | -.442 | .616 | -1.215 | 1.191 |
| I start to panic when I have to speak without preparation in English classes. | 13 | 3.15 | 1.625 | 1 | 5 | -.153 | .616 | -1.642 | 1.191 |
| I get embarrassed to volunteer answers in English classes. | 13 | 2.69 | 1.377 | 1 | 5 | .203 | .616 | -1.415 | 1.191 |
| I feel nervous while speaking English with native speakers. | 13 | 2.77 | 1.481 | 1 | 5 | -.080 | .616 | -1.743 | 1.191 |
| I get upset when I don't understand what the teacher is correcting. | 13 | 3.08 | 1.382 | 1 | 5 | -.160 | .616 | -1.225 | 1.191 |
| I don't feel confident when I speak English in classes. | 13 | 2.54 | 1.506 | 1 | 5 | .605 | .616 | -1.107 | 1.191 |
| I am afraid that my English teacher is ready to correct every mistake I make. | 13 | 2.54 | 1.506 | 1 | 5 | .605 | .616 | -1.107 | 1.191 |
| I can feel my heart pounding when I am going to be called on in English classes. | 13 | 2.46 | 1.506 | 1 | 5 | .778 | .616 | -.909 | 1.191 |
| I always feel that the other students speak English better than I do. | 13 | 2.77 | .927 | 1 | 4 | -.211 | .616 | -.546 | 1.191 |
| I feel very self-conscious about speaking English in front of other students. | 13 | 3.92 | .862 | 2 | 5 | -.758 | .616 | .852 | 1.191 |
| I get nervous and confused when I am speaking in English classes. | 13 | 2.46 | 1.330 | 1 | 5 | .474 | .616 | -.784 | 1.191 |
| I get nervous when I don't understand every word my English teacher says. | 13 | 2.92 | 1.320 | 1 | 5 | -.093 | .616 | -1.406 | 1.191 |
| I feel overwhelmed by the number of rules I have to learn to speak English. | 13 | 2.77 | 1.092 | 1 | 4 | -.373 | .616 | -1.034 | 1.191 |
| I am afraid that the other students will laugh at me when I speak English. | 13 | 2.54 | 1.330 | 1 | 5 | .530 | .616 | -.946 | 1.191 |
| I get nervous when the English teacher asks questions which I haven't prepared in advance. | 13 | 3.15 | 1.519 | 1 | 5 | -.304 | .616 | -1.268 | 1.191 |
| The teacher asks me a question in English in class | 13 | 2.38 | 1.325 | 1 | 5 | .674 | .616 | -.554 | 1.191 |
| Speaking informally to my English teacher out of class. | 13 | 2.00 | 1.414 | 1 | 5 | 1.254 | .616 | .209 | 1.191 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Taking part in a group discussion in class. | 13 | 2.00 | 1.155 | 1 | 4 | .768 | .616 | -.825 | 1.191 |
| Taking part in a role-play or dialogue in front of my class. | 13 | 2.23 | 1.235 | 1 | 4 | .427 | .616 | -1.464 | 1.191 |
| Giving an oral presentation to the rest of the class. | 13 | 2.54 | 1.664 | 1 | 5 | .626 | .616 | -1.356 | 1.191 |
| When asked to contribute to a formal discussion in class. | 13 | 2.31 | 1.316 | 1 | 4 | .365 | .616 | -1.732 | 1.191 |
| Talking to administrative staff of my language school in English. | 13 | 2.54 | 1.391 | 1 | 5 | .345 | .616 | -1.236 | 1.191 |
| Taking part in a conversation out of class with more than one native speaker of English. | 13 | 2.31 | 1.377 | 1 | 4 | .249 | .616 | -1.981 | 1.191 |
| Starting a conversation out of class with a friend or colleague who is a native speaker of English. | 13 | 2.23 | 1.481 | 1 | 5 | .990 | .616 | -.128 | 1.191 |
| A lecturer/supervisor in my intended university faculty of study asks me a question in English. | 13 | 2.30 | 1.193 | 1 | 4 | .148 | .616 | -1.502 | 1.191 |
| Asking for advice in English from a lecturer/supervisor in my intended university faculty of study. | 13 | 2.23 | 1.301 | 1 | 5 | .840 | .616 | -.021 | 1.191 |
| A native speaker I do not know asks me questions. | 13 | 2.15 | 1.405 | 1 | 5 | .959 | .616 | -.390 | 1.191 |
| Studying English is important to me because I can understand the cultures and traditions of English-speaking countries. | 13 | 4.46 | 776 | 3 | 5 | -1.114 | .616 | -.155 | 1.191 |
| Studying English is important to me because I can understand English stories, novels, and literature. | 13 | 4.62 | .650 | 3 | 5 | -1.576 | .616 | 1.801 | 1.191 |
| Studying English can be important for me because I will be able to communicate with my neighbors in any English-speaking countries. | 13 | 4.46 | .967 | 2 | 5 | -1.831 | .616 | 2.704 | 1.191 |
| Studying English can be important for me because it will help me to get an ideal job in the future. | 13 | 4.62 | .650 | 3 | 5 | -1.576 | .616 | 1.801 | 1.191 |
| Studying English can be important for me because I will need it for my future career. | 13 | 4.69 | .630 | 3 | 5 | -2.051 | .616 | 3.711 | 1.191 |
| Studying English can be important for me because it will make me a more knowledgeable person. | 13 | 4.69 | .751 | 3 | 5 | -2.179 | .616 | 3.223 | 1.191 |
| Studying English helps me to better understand the ways of life of the English-speaking countries. | 13 | 4.31 | .751 | 3 | 5 | -.611 | .616 | -.776 | 1.191 |
| Studying English helps me to easily make friends with foreigners. | 13 | 4.38 | .768 | 3 | 5 | -.611 | .616 | -.776 | 1.191 |
| Studying English helps me to associate with the neighbors in English- speaking countries and learn about their values and beliefs. | 13 | 4.38 | .768 | 3 | 5 | -.849 | .616 | -.580 | 1.191 |
| Studying English can be important for me because other people will respect me more if I know a foreign language. | 13 | 4.38 | .768 | 3 | 5 | -.849 | .616 | -.580 | 1.191 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Studying English can be important for me because it will help me to further my studies. | 13 | 4.62 | .650 | 3 | 5 | -1.576 | .616 | 1.801 | 1.191 |
| Studying English can be important for me because it will help me search for information and materials in English on the Internet. | 13 | 4.77 | .599 | 3 | 5 | -2.682 | .616 | 6.964 | 1.191 |
| Studying English helps me to be open-minded and friendly like native English speakers. | 13 | 4.00 | 1.000 | 3 | 5 | .000 | .616 | -2.273 | 1.191 |
| Studying English is important to me because it will help me when I travel abroad. | 13 | 4.85 | .376 | 4 | 5 | -2.179 | .616 | 3.223 | 1.191 |
| Studying English is important to me because it will help me to achieve at school. | 13 | 4.62 | .768 | 3 | 5 | -1.760 | .616 | 1.615 | 1.191 |
| The Americans and British are kind and cheerful. | 13 | 3.15 | 1.68 | 1 | 5 | .132 | .616 | 1.055 | 1.191 |
| I enjoy watching English news and movies. | 13 | 4.54 | .776 | 3 | 5 | -1.413 | .616 | .546 | 1.191 |
| I enjoy reading English books, articles, newspapers, and magazines. | 13 | 4.15 | 1.345 | 1 | 5 | -1.542 | .616 | 1.403 | 1.191 |
| I study English diligently because I want to earn a university degree. | 13 | 3.92 | 1.441 | 1 | 5 | -1.028 | .616 | -.395 | 1.191 |
| I study English diligently because it is an important tool for communication. | 13 | 4.54 | .877 | 2 | 5 | -2.327 | .616 | 5.902 | 1.191 |
| Valid N (listwise) | 13 | | | | | | | | |

As the minimum and maximum values of the indices show, all the scores collected by the Likert scales are in the legal range of 1 to 5 and no data deviation is observed, although later in the pre-screening section, we will examine the deviated data from the study in detail and in the form of boxplots. However, to determine the normality of the data distribution of a reflective questionnaire, the only appropriate indicators are skewness and kurtosis (Hair & Ringle, 2012). Numerous articles and books have stated different limits for these two indicators, however, most researchers used the Hair and Ringle 2012 values for their skewness, which are -3 and 3, and for the kurtosis, -5 and 5. The results of Table 4-6 show that the statistics of skewness and kurtosis are in the allowable range of -3, 3, -5 and 5, respectively. Therefore, a necessary condition for the normal distribution of data is met.

### 4.2.3 Descriptive statistics of research variables

Table 4-7

Descriptive Statistics of Research Variables

| | N | Minimum | Maximum | Mean | Std. Deviation | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| C.anx.before | 13 | 1.35 | 3.55 | 2.1038 | .59458 | 1.160 | .616 | 1.652 | 1.191 |
| F.L.anxiety.before | 13 | 1.22 | 4.72 | 2.8547 | 1.13980 | .195 | .616 | -1.067 | 1.191 |
| S.L.anxiety.before | 13 | 1.00 | 4.50 | 2.2756 | 1.25434 | .591 | .616 | -1.078 | 1.191 |
| S.Motivation.before | 13 | 3.15 | 5.00 | 4.4038 | .58397 | -1.347 | .616 | 1.172 | 1.191 |
| Valid N (listwise) | 13 | | | | | | | | |

Figure 4-6

Histogram diagram of latent variable of speaking motivation

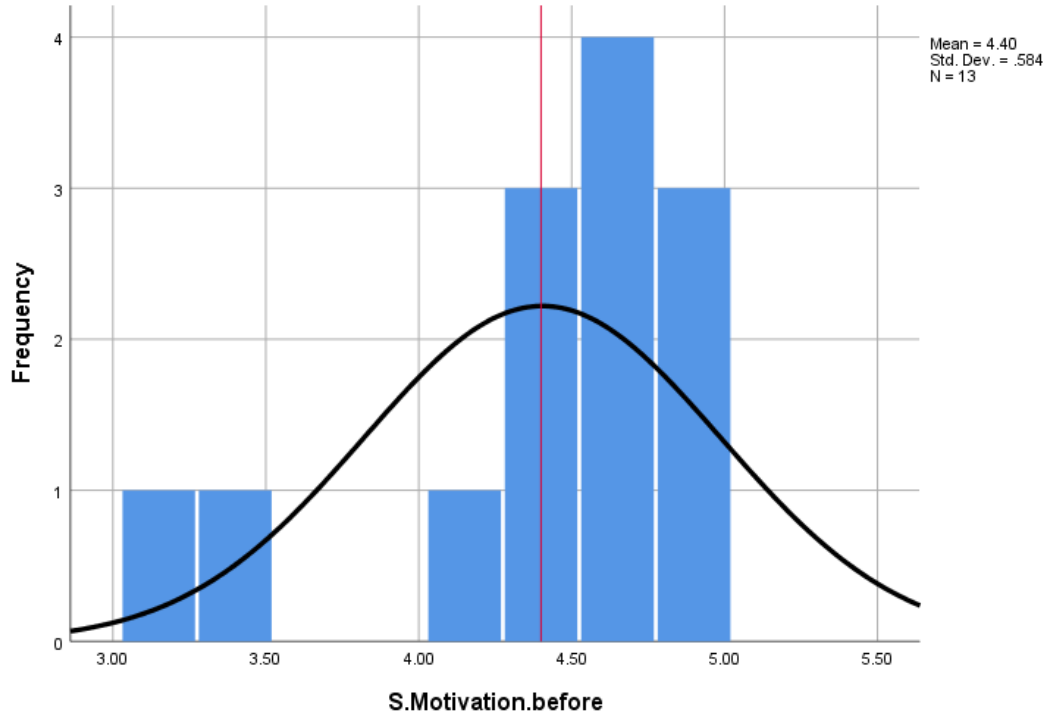


Figure 4-6

Histogram diagram of latent variable of second language speaking anxiety

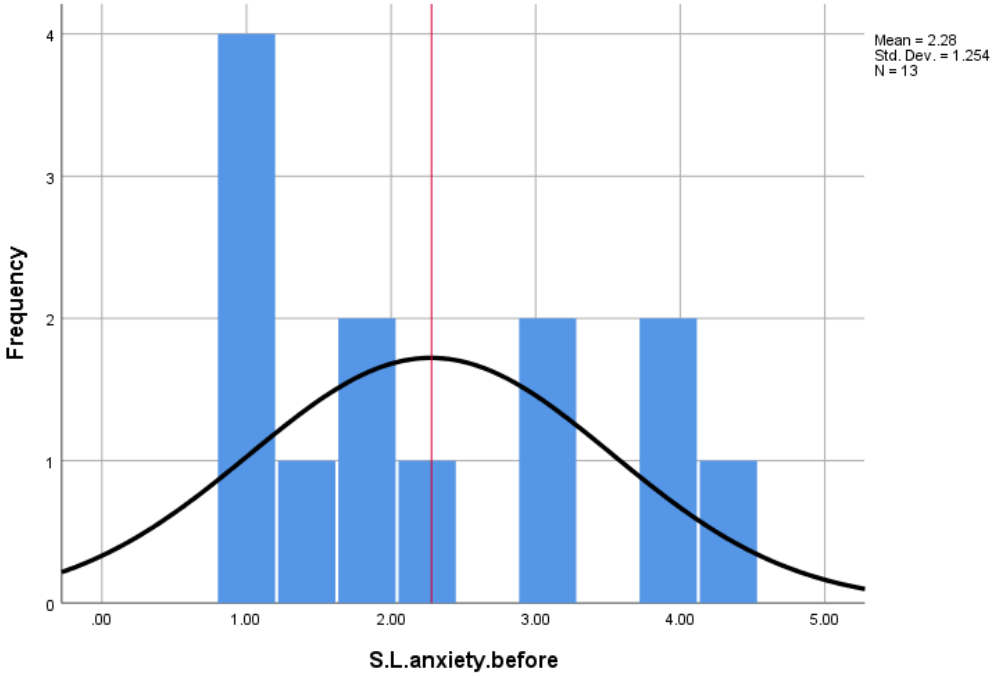



Figure 4-6

Histogram diagram of latent variable of foreign language speaking anxiety

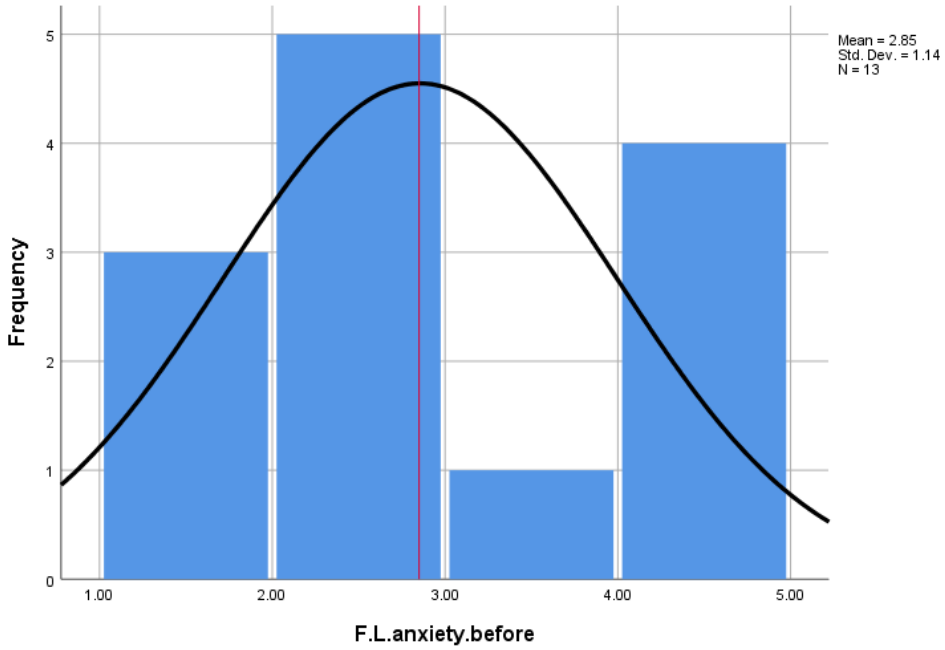
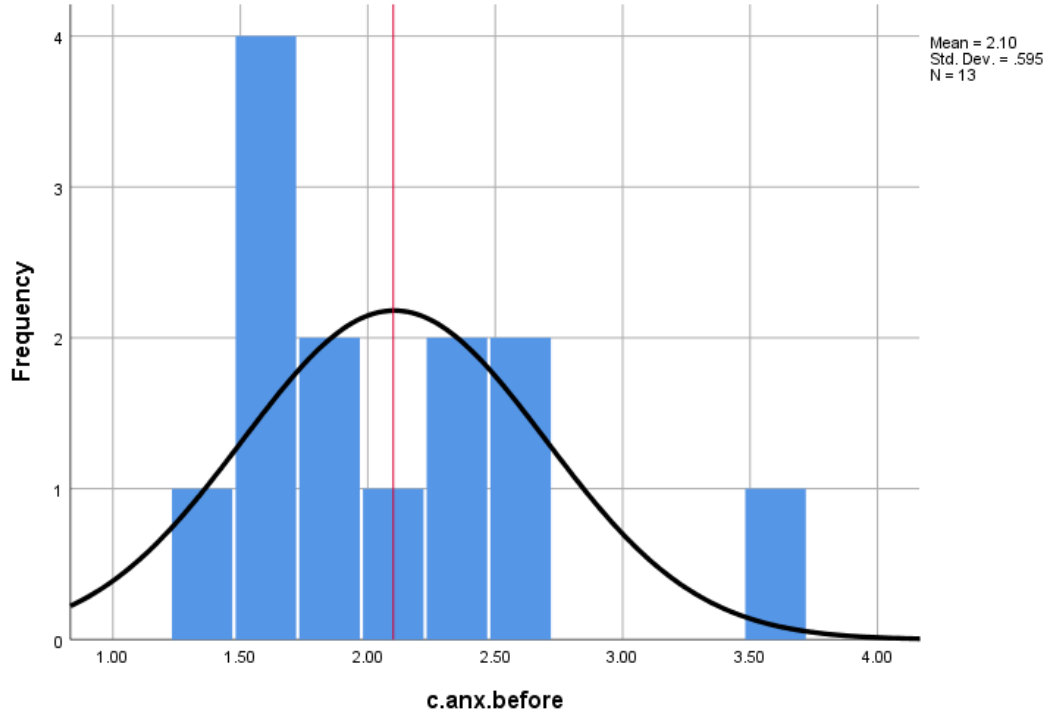


Figure 4-6

Histogram diagram of latent variable of computer use anxiety




For normality, as a sufficient condition both the indicators measuring variables as well as the research variables should be normal. The results in Table 4-7 show that the mean of some variables within the sample is not greater than 3, while the range is 5. That is, in all variables, respondents do not have relative agreement within the sample. Stevens (2002) stated that the data of a study is free from indifferent people when the stdev.p value less than 0.3 or the scatter of answers for each participant's answer for each of the above variables must be 0.5. Table 4-7 confirms this and all standard deviation values are above 0.5. In addition, the stdev.p for each participant was calculated in the excel file and it was fortunately confirmed that there was no indifferent participant.

| Stdev.p pretest | means | Stdev.p posttest | means |
|---|---|---|---|
| 1.800737 | 2.414286 | 0.474664 | 1.057143 |
| 0.74724 | 2.885714 | 1.393059 | 2.728571 |
| 1.466705 | 2.814286 | 1.229236 | 3.057143 |
| 1.33409 | 3.385714 | 1.652209 | 2.314286 |
| 1.575644 | 2.214286 | 1.535963 | 2.428571 |
| 1.514623 | 2.814286 | 1.343161 | 2.714286 |
| 1.220572 | 2.714286 | 1.114011 | 2.757143 |
| 1.668496 | 2.757143 | 1.696575 | 2.514286 |
| 1.655171 | 2.342857 | 1.72739 | 2.242857 |
| 1.071048 | 3.9 | 1.439955 | 2.428571 |
| 1.119767 | 3.942857 | 1.346272 | 2.957143 |
| 1.438253 | 3.4 | 1.74151 | 2.1 |
| 1.293942 | 3.2 | 1.58925 | 2.4 |

It can be seen from the histograms that the skewness and kurtosis values of some of the research variables have not complied with the allowable limit, and considering the necessary condition and the establishment of a sufficient condition, data distribution of all variables do not follow a normal bell pattern. Therefore, the analyses proceeds with the use of non-parametric statistical tests and software for the research variables which do not have a normal bell curve (so for the variable "anxiety" in the study, Wilcoxon is used) and parametric statistical tests of significance for the research variable which has a normal distribution (for example "motivation" is examined with a paired sample t-test) to answer to the research questions.

## 4.3 Data pre-screening

The research data must pass through the filter of pre-screening indicators so as not to create bias in the research results. Now we will screen the data with these indicators.

### 4.3.1 Identification and removal of indifferent cases

Unfortunately, because the time, place, people, etc. are not suitably selected in a research study, there are always people who answer the questions of a questionnaire or checklist indifferently. There are two ways for identifying indifferent cases, stated by Hair (2012). The first way is the apparent way and in fact looking at how the numbers are placed based on reflective questionnaires, but the second way in both combined and reflective questionnaires is to identify people who have answered indifferently and the researcher should take action to eliminate them. In the second method, the formula of standard deviation for each person's answers is used and we have to calculate the stdev.p formula for each person. If the value is less than 0.3, the person has a small scatter of responses and arguably they should be removed from the data set.

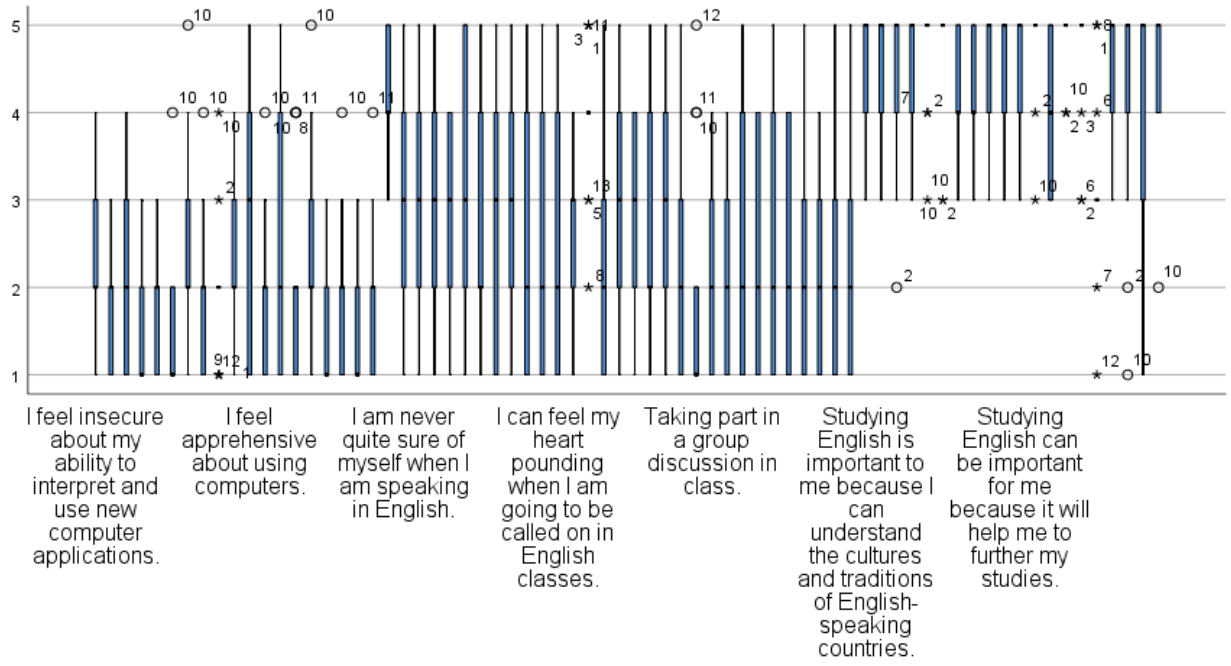
After calculating standard deviations of each person's answers, no participant was removed from the study.

### 4.3.2 Identifying and managing junk data

There are data that are beyond the scope of the researcher's structured response tool. This data sometimes occurs due to user’s typing errors and sometimes it is real and it occurs in the category of numbers. However, this data drastically changes the researcher's final results in one direction. Therefore, the researcher must first identify them and then manage them scientifically. The best tool for identifying junk data is a box chart or box plot.

Figure 4-6

Box diagram for junk data detection




Fortunately, the box diagram of all 70 items is in the range of 1 to 5 Likert scale and no junk data is observed.

### 4.3.3 Cronbach's alpha

Cronbach's alpha is an index of internal consistency that is used to assess whether the items in a questionnaire related to a particular variable or construct are correlated as a group. It is, therefore, a measure of scale reliability. (It is not, however, a measure of 'unidimensionality' -- this is a feature that would require additional analyses such as factor analysis). Byrne (2005) recommends that Cronbach's alpha for each variable or component should be at least 0.7; otherwise the text of the question must be corrected and the researcher is not allowed to remove the index (question) from the set of questions under the pretext that alpha is less than 0.7.

Table 4-8

Cronbach's Alpha Coefficient

| Interpretation | *Cronbach's alpha* | Number of Questions | Latent Variables |
|---|---|---|---|
| Excellent | **Reliability Statistics**<br>Cronbach's Alpha: .907 — N of Items: 20 | Q1-Q20 | Computer Anxiety |
| Excellent | **Reliability Statistics**<br>Cronbach's Alpha: .975 — N of Items: 18 | Q21-Q38 | Foreign Language Anxiety |
| Excellent | **Reliability Statistics**<br>Cronbach's Alpha: .984 — N of Items: 12 | Q39-Q50 | Second Language Anxiety |
| Excellent | **Reliability Statistics**<br>Cronbach's Alpha: .940 — N of Items: 20 | Q51-Q70 | Speaking Motivation |

Fortunately, all variables in the study have an acceptable Cronbach's alpha score.

## 4.4 Inferential Statistics

Inferential statistics means the discovery of patterns of relationship or differences within a sample representing the population to which the researcher seeks to generalize the results. In the present study, the researcher sought to investigate the difference in anxiety and motivation for speaking English as a foreign and second language in front of others before and after the DST intervention.

### 4.4.1 The first research hypothesis

This hypothesis seeks to investigate how the use of digital storytelling (DST) reduces the anxiety of English learners when speaking to others.

Because this hypothesis is one of the differential hypotheses and our variable (anxiety) is ordinal (low, medium and high) and because the distributions of the anxiety variables do not follow a normal bell pattern, only the Wilcoxon test, a

non-parametric test, is used for comparing a variable in two time periods, before and after, the digital storytelling intervention. Using the Wilcoxon test, the difference was calculated in SPSS software version 26 and then analyzed and interpreted by the researcher.

Table 4-9

Ranking Averages for F.L Anxiety before & after DST

| | | N | Mean Rank | Sum of Ranks |
|---|---|---|---|---|
| F.L.anx.after - F.L.anx.before | Negative Ranks | 10[a] | 7.10 | 71.00 |
| | Positive Ranks | 2[b] | 3.50 | 7.00 |
| | Ties | 1[c] | | |
| | Total | 13 | | |

a. F.L.anx.after < F.L.anx.before
b. F.L.anx.after > F.L.anx.before
c. F.L.anx.after = F.L.anx.before

Table 4-10

Wilcoxon Test for F.L Anxiety before & after DST

| | F.L.anx.after - F.L.anx.before |
|---|---|
| Z | -2.514[b] |
| Asymp. Sig. (2-tailed) | .012 |

a. Wilcoxon Signed Ranks Test
b. Based on positive ranks.

Our null hypothesis and alternative hypothesis:

H0 Lack of difference

H1 Existence of difference

In interpreting the results of the Wilcoxon test, in order to find out whether there is a difference in the level of participants' anxiety between the two times before and after the DST intervention, we must use the results of the second table (Test Statistics). Based on the results that sig = .012 and its value is less than 0.05 or the Z Value (-2.514) which is out of range and bigger than +/- 1.96, it can be said that

statistically with 0.95 confidence, the H0 hypothesis is rejected and the H1 hypothesis is meaningful and accepted. That is, there is a difference between the participants' anxiety before and after the DST intervention. In other words, the level of participants' anxiety before and after DST intervention is different. The direction in difference is specified through a. F.L.anx.after < F.L.anx.before showing that foreign language speaking anxiety is lower and less after the intervention.

In addition to determining the significant difference or non-difference in the level of participants' anxiety in the two times before and after the DST intervention, we can find out when anxiety is higher and when it is lower. For this purpose, we can use the results of the first table. According to the results of this table, the average rank of anxiety in the time after the DST intervention (3.50) was lower than the amount in the time before the DST intervention (7.10). Therefore, after the DST intervention, the participants' anxiety has decreased. We cannot, of course, strictly speaking, attribute this difference to the intervention, given there is no comparison group.

Table 4-11

Ranking Averages for S.L Anxiety before & after DST

| | | N | Mean Rank | Sum of Ranks |
|---|---|---|---|---|
| S.L.anx.after - S.L.anx.before | Negative Ranks | 6[a] | 7.50 | 45.00 |
| | Positive Ranks | 4[b] | 2.50 | 10.00 |
| | Ties | 3[c] | | |
| | Total | 13 | | |

a. S.L.anx.after < S.L.anx.before

b. S.L.anx.after > S.L.anx.before

c. S.L.anx.after = S.L.anx.before

Table 4-12

Wilcoxon Test for S.L Anxiety before & after DST

| | S.L.anx.after - S.L.anx.before |
|---|---|
| Z | -1.784[b] |
| Asymp. Sig. (2-tailed) | .074 |

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Regarding the variable second language anxiety, sig = .074 and its value is a little bigger than 0.05 or the Z Value (-1.784) which is almost close to +/- 1.96. Considering that at the level of 95%, the level of error acceptance or sig = 0.05 and since the level of confidence in rejecting and accepting the research hypotheses is 95%, it can be interpreted that this hypothesis is not accepted at this level. According to the results in table 4-11, the average rank of anxiety after the intervention is (2.50) which was lower than the amount at the time before the intervention (7.50). Therefore, after the DST intervention, the participants' second language anxiety has decreased, though the difference is not statistically significant..

### 4.4.2 The second research hypothesis

This hypothesis seeks to investigate how the use of digital storytelling (DST) enhances students' motivation to speak English with others.

Because this hypothesis is one of the differential hypotheses and our variable (motivation) is a scale, and because the distribution of motivation variables follows a normal bell pattern, a paired sample t-test, which is a parametric test, is used for comparing the variable in two time periods, before and after the DST intervention. The test statistic was calculated in SPSS software version 26 and then analyzed and interpreted by the researcher.

Table 4-13

Paired Samples Statistics for Speaking Motivation before & after DST

| | | | | Bootstrap[a] | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | 95% Confidence Interval | |
| | | | Statistic | Bias | Std. Error | Lower | Upper |
| Pair 1 | Sp.Mot.before | Mean | 4.4038 | -.0162 | .1741 | 3.9305 | 4.7023 |
| | | N | 13 | | | | |
| | | Std. Deviation | .58397 | -.04062 | .14245 | .25066 | .78089 |
| | | Std. Error Mean | .16197 | | | | |
| | Sp.Mot.after | Mean | 4.2423 | -.0083 | .2831 | 3.6599 | 4.5671 |
| | | N | 13 | | | | |
| | | Std. Deviation | .99286 | -.16052 | .46390 | .14291 | 1.54831 |
| | | Std. Error Mean | .27537 | | | | |

a. Unless otherwise noted, bootstrap results are based on 100 bootstrap samples

The monitoring of the sample of students shows that the average motivation of students after DST intervention is 4.2423, which is marginally lower than before the intervention that is 4.4038. We would like to test this unexpected pattern discovered by inferential statistics in the general student population.

Table 4-14

Paired Samples Correlations for Speaking Motivation before & after DST

| | | | | | Bootstrap for Correlation[a] | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | 95% Confidence Interval | |
| | | N | Correlation | Sig. | Bias | Std. Error | Lower | Upper |
| Pair 1 | Sp.Mot.before & Sp.Mot.after | 13 | -.265 | .382 | .136 | .362 | -.564 | .702 |

a. Unless otherwise noted, bootstrap results are based on 100 bootstrap samples

b.

The correlation results show that according to the p value obtained (.382), indicating sig >0.05, H1 is rejected and the H0 hypothesis is accepted. That is, motivation is not affected by DST before and after the intervention.

Table 4-15

Paired Samples Test for Speaking Motivation before & after DST

| | | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|---|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference Lower | Upper | | | |
| Pair 1 | Sp.Mot.before - Sp.Mot.after | .16154 | 1.27821 | .35451 | -.61087 | .93395 | .456 | 12 | .657 |

Our statistical assumption:

H0 Lack of difference

H1 Existence of difference

Given the value of sig >0.05 the null hypothesis, Ho, is accepted and the t Value which is within range (-1.96, 1.96), the alternative research hypothesis, H1, is rejected. That is, there is not a difference in motivation before and after the DST intervention.

Therefore, the use of digital storytelling (DST), as an independent variable, does not appear to have a significant impact on English learners' speaking motivation and the second hypothesis of the research is rejected.

### 4.4.3 Computer Anxiety

| Items | | Mean | SD |
|---|---|---|---|
| 1. | I feel insecure about my ability to interpret and use new computer applications. | 2.31 | 1.032 |
| 2. | I look forward to using a computer on my job. | 1.77 | .832 |
| 3. | I do not think I would be able to learn a new computer language. | 2.08 | 1.115 |
| 4. | I am confident I can learn computer skills. | 1.54 | .660 |
| 5. | Anyone can learn to use a computer if they are patient and motivated. | 1.69 | .630 |
| 6. | Learning to operate a computer is like learning any new skill. The more you practice the better you become. | 1.54 | .877 |
| 7. | I am afraid that if I begin to use computers I will become dependent on them and lose some of my reasoning skills. | 2.54 | 1.198 |
| 8. | I am sure that with time and practice I will be as comfortable working with computers as I am working with basic word processing software. | 1.77 | .927 |

| | | | |
|---|---|---|---|
| 9. | I feel that I will be able to keep up with the advances happening in the computer field. | 2.00 | .816 |
| 10. | I dislike working with machines that are smarter than I am. | 2.23 | 1.013 |
| 11. | I feel apprehensive about using computers. | **2.62** | 1.387 |
| 12. | I have difficulty in understanding how a computer works. | 1.85 | .987 |
| 13. | It scares me to think that I could cause the computer to destroy a large amount of information by hitting the wrong key. | **2.62** | 1.502 |
| 14. | I hesitate to use a computer for fear of making mistakes that I cannot correct. | 2.00 | 1.225 |
| 15. | You have to be a genius to understand all the special commands contained in most computer software. | 2.54 | 1.050 |
| 16. | If given the opportunity I would like to learn about and use computers. | 1.46 | .776 |
| 17. | I have avoided computers because they are unfamiliar and somewhat intimidating to me. | 1.92 | .954 |
| 18. | I feel computers are necessary tools in both educational and work settings. | 1.38 | .650 |
| 19. | The challenge of learning computers is exciting. | 1.92 | .954 |
| 20. | I feel that understanding computers will make me a more productive individual. | 4.31 | .630 |
| Total | | **42.09** | **19.21** |

The scores of the research participants on the CARS instrument ranged from a low of 25 to a high of 69 (The absolute possible low and high scores could be 20 and 100). The mean score was 42.09 (see Table 4-4-3). It is clear that more than 90 percent of the students had a low anxiety score, suggesting that the level of computer anxiety of students in this sample is rather low. The reason is that most of the participants in this sample are digital natives with more experience using computers. The items that presented the highest levels of anxiety for the respondents were the “fear of hitting the wrong key and destroying a large amount of information||”, and the “fear of using computers”. As additional information despite the fact that computer anxiety was not a research hypothesis in this study, results of the Wilcoxon test below (tables 4-16, 4-17)showed that the use of digital storytelling (DST) as an independent variable did not have a significant impact on English learners’ computer anxiety.

Our null hypothesis and alternative hypothesis:

H0 Lack of difference

H1 Existence of difference

In interpreting the results of the Wilcoxon test, in order to find out whether there is a difference in the level of participants' computer use anxiety between the two times before and after the DST intervention, we must use the results of the second table (Test Statistics). Based on the results that sig = .091 and its value is bigger than 0.05 or the Z Value (-1.691) which less than +/- 1.96, it can be said that the H0 hypothesis is accepted and the H1 hypothesis is rejected. That is, there is a not a difference between the participants' computer use anxiety before and after the DST intervention. In other words, the level of participants' computer use anxiety before and after DST intervention is the same. This can be attributed to the fact that learners of the current generation are quite familiar with computer technology and they exactly know how to use computer software, applications and games both at home and at school for edutainment purposes on a daily basis.

Table 4-16

Ranking Averages for Computer Use Anxiety before & after DST

| | | N | Mean Rank | Sum of Ranks |
|---|---|---|---|---|
| C.anx.after - C.anx.before | Negative Ranks | 7[a] | 8.64 | 60.50 |
| | Positive Ranks | 5[b] | 3.50 | 17.50 |
| | Ties | 1[c] | | |
| | Total | 13 | | |

a. C.anx.after < C.anx.before

b. C.anx.after > C.anx.before

c. C.anx.after = C.anx.before

Table 4-17

Wilcoxon Test for Computer Use Anxiety before & after DST

| | C.anx.after - C.anx.before |
|---|---|
| Z | -1.691[b] |
| Asymp. Sig. (2-tailed) | .091 |

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

# Chapter 5

# CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

## 5.1 Introduction

This chapter is divided into two main parts. The first part is the conclusion and a brief summary of the study including the purpose of the study, the sample, the research procedures, the instruments as well as its findings. In addition; to validate the results produced from the research data which were analyzed in the previous chapter, this research study is linked to the result of other studies conducted in the same domain. The second part discusses the limitations which the researcher encountered as well as the recommendations, based on the obtained results, for future researchers investigating the use of digital storytelling as a medium to increase motivation and minimize anxiety of speaking English as a foreign language.

The aim of this study was to investigate and determine the efficiency of the digital storytelling approach in improving the English-speaking skills of Iranian students, increasing their speaking motivation and reducing their anxiety to talk to others in a foreign language. Two hypotheses were set and the dependent variables of speaking motivation and anxiety were studied and evaluated before and after the DST intervention in this study. Quasi-experimental research was considered as the appropriate method of conducting this study in the form of a group pre-test and post-test design with an intervention group (taught by DST). The research was conducted on a group of 13 Iranian male adult EFL learners at the pre-intermediate level of English selected based on a convenience sampling method participants from among those studying at the Tehran International School (TIS) in Tehran, Iran. The research procedure consists of two parts. The first part was the development of digital stories through software by students using day-to-day and discussion-based topics which was designed to create an environment where everybody is encouraged to actively engage and share ideas and personal experiences. In addition, to answer the two research questions, the researcher analyzed and interpreted the data from the two main research instruments in the form of questionnaires administered before and after the intervention. The intervention consisted of 10 sessions or classes concerning digital storytelling.

## 5.2 Results

The results of the research can be summarized as follows:

### 5.2.1 Computer Anxiety

Regarding computer anxiety, the results of the Wilcoxon test showed that there was not a significant difference in the scores of students' pre-test and post-test. Based on the results that sig = .091 and its value is bigger than 0.05 or the Z Value (-1.691) which less than +/- 1.96, it can be said that the H0 hypothesis is accepted and the H1 hypothesis is rejected. That is, there is a not a difference between the participants' computer use anxiety before and after the DST intervention. In other words, the level of participants' computer use anxiety before and after DST intervention is the same. This can be attributed to the fact that learners of the current generation are quite familiar with computer technology and they exactly know how to use computer softwares, applications and games both at home and at school for edutainment purposes on a daily basis.

However; if there is any computer anxiety, according to Chu and Spires (1991), computer anxiety is a multi-dimensional construct and it can be reduced, treated and changed through enhancing an individual's experience with computers and incorporating technologies into the culture of learning. Little knowledge and the limited number of weekly hours of computer use may contribute to computer anxiety levels and using technology in teaching and learning helps students to show positive attitude towards learning and gaining more confidence in computer use, although more than 90 percent of the students in this study had a low anxiety score, suggesting that the level of computer anxiety of students in this sample is overall rather low. The reason is that most of the participants in this sample are digital natives with more experience using computers. Their computer experience has been mainly obtained through engaging in games and web browsing activities.

### 5.2.2 Foreign Language Anxiety

The first research hypothesis posited that digital storytelling (DST) reduces the anxiety of English learners when speaking to others. The results of the Wilcoxon

test showed that there was a significant difference in the scores of students' pre-test and post-test. In other words, the level of participants' anxiety before and after DST intervention is different and foreign language speaking anxiety is lower and less after the intervention.

The findings support a significant difference between speaking anxiety before and after the digital storytelling (DST) intervention. Therefore, the use of digital storytelling (DST) as an independent variable may have a significant impact on reducing the anxiety of English learners when speaking to others.

### 5.2.3 Second Language Anxiety

Regarding second language anxiety, since sig = .074 and its value is a little bigger than 0.05 or the Z Value (-1.784) which is a little smaller than +/- 1.96, it can be interpreted that statistically with 0.90 probability that the intervention of digital storytelling has reduced second language anxiety. That is, there is a difference between the participants' anxiety before and after the DST intervention. In addition to determining the difference or non-difference in the level of participants' second language anxiety in the two times before and after the digital storytelling intervention, we can find out when the level of anxiety is higher and when it is lower. For this purpose, we can use the results of the first table (Test Statistics). According to the results of this table, the average rank of anxiety after the intervention is (2.50) which was lower than the amount in the time before the intervention (7.50). Therefore, with the DST intervention, the participants' second language anxiety has decreased. That is, as it was clear in the sample, there is a difference in anxiety before and after the intervention within the research community. The reason behind this 0.90 probability of difference of second language anxiety before and after digital storytelling intervention goes back to the difference between second language and foreign language. It can be argued that some of our research participants have the experience of visiting foreign countries and they learn and use English as a second language while being exposed to foreigners. Therefore, they demonstrate less anxiety in communicative settings. In addition, the second language speaking anxiety scale (SLSAS) used as our research instrument in this study reflects the communicative situations the participants were

likely to encounter according to the communicative setting, interlocutor (speaker/listener) variables and the nature of the communication.

The findings of this study align with the study conducted in 2014 by Yuichi Ono in Japan where the motivational effects of digital storytelling on the English language of Japanese students were examined. In this study, two groups were used to study the research hypothesis. The main purpose of this study was to investigate the effects of a project-based learning approach to construct digital stories for presentation in English language classes and its effectiveness under one-to-one computer-assisted language learning. With statistical analysis conducted in this study, the author suggests that a project-based learning approach to construct digital presentations reduces students' anxiety and also improves deep thinking as well as resulting in better performance in various English language skills (Ono, 2014).

The findings of this study also align with a study entitled *Developing English Speaking Skills of Thai Undergraduate Students by Digital Storytelling through Websites* conducted in 2013 by Manussanun and colleagues, that highlighted the importance of digital storytelling in education. The aim of this study was to investigate the effect of digital storytelling on speaking skills and student learning satisfaction. In this study, 50 undergraduate students who had enrolled to learn English were participants. Pre-test and post-test measures were also used to collect data. Students were asked to prepare their presentations based on the digital storytelling method and upload them on the website as well as presenting in class in the presence of their classmates. Eventually, all the data were collected and statistically analyzed. The results showed that students had a significant improvement in speaking skills. This method also became popular with teachers because it helped them to design a more effective teaching method so that they can train more active students as self-taught learners (Somdee & Suppasetseree, 2013).

Overall, anxiety is an emotion which is an important part of being. Emotions play an important role in adapting behavior to better adjust to the current situation by creating cognitive, psychological and behavioral changes and these behavioral adaptations and adjustments eventually lead to evolution. Therefore, the results of the study show that DST intervention impacts learners’ level of speaking anxiety

because learners need to change and better adjust themselves to the new situation as well as the new way of learning. There is no doubt that anxiety influences learning and learning effort negatively because excessive worry results in task-irrelevant cognitions which interrupt working memory, the recall of information active learning, creativity and fantasy while the DST intervention makes it easier to work on learning activities which provide abundant opportunities to use language in a non-threatening context.

### 5.2.4 Foreign Language Speaking Motivation

The second research hypothesis pointed out that digital storytelling (DST) enhances English learners' motivation when speaking to others. The results of the paired sample t test showed there is not a difference in motivation before and after the DST intervention. Therefore, the use of digital storytelling (DST) as an independent variable does not have a significant impact on English learners' speaking motivation and the second hypothesis of the research is rejected.

DST usually provides students with authentic contexts suited to their personal experiences, interests and expectations. DST emphasizes two motivational constructs which are task value and self-efficacy for learning. Task value refers to students' judgments on usefulness and significance of the course content while self-efficacy refers to the judgment of one's capability to perform an academic task (Pintrich, 1999). It can be argued that motivation to speak is a larger change in disposition or a person's inherent qualities of mind and character, judgments, choices and decisions that would require more positive experiences over a longer period of time. That is, motivation may require more time and effort to change than levels of anxiety.

## 5.3 Limitations of the Study

Although the study reveals that digital storytelling can reduce students' anxiety, there are some limitations:

1. Although students know how to use computers and the internet, it takes time to teach them multimedia tools to a point they can use them effectively in their presentations. Not all students have equal experience and skills in creating multimedia lessons.
2. Due to slow speed Internet, online classes were a real struggle for the researcher in terms of implementing the DST. In addition, uploading and downloading materials was a challenge.
3. Sample size was small (n-13) and in most comparisons non-parametric tests were used as the data was not normally distributed. Therefore, power was very low.
4. The design is a pre-test-posttest single group evaluation study design. Without a comparison or control group, it is not possible to attribute changes in the variables to the DST intervention, strictly speaking. Internal validity for such a design is low, given the different possible confounds that may have resulted in the changes over the two times the instruments were administered. Despite these limitations, and given the broader body of research concerning the effects of the story-telling strategy, the study provides support for, and a justification for, the use of the DST strategy in the context at hand.
5. As an English teacher who firmly believes in communicative language teaching and understands what the new generation of learners look for considering the fact that they are more into technology, the positive implication is that digital storytelling is more welcome because it creates a positive communicative context where learners have an almost equal share of collaboration rather than competition for both language learning as well as sharpening their technological skills within the language learning context. Regarding the data collection, I concluded that learners were really interested in answering the questions because they had experienced the topic of the research in their language learning process. Therefore, none of them were indifferent and they tried to provide me with honest and real

answers to the questions. Although I am really into communicative way of language teaching who attempts to provide learners with tasks and activities tailored towards learners needs, wants and expectations, I tried to eliminate bias towards the use of digital storytelling by having an observer (a third-party) to control how I implement the procedure; help me control my emotions and mitigate the impact of social desirability bias. In addition, there is no social desirability bias in this research because as above-said, they had experienced the topic of this research in their language learning process and they were willing to provide factual and real answers to see how using this teaching medium plays a key role in helping them overcome foreign language speaking anxiety. The negative implication was that digital storytelling needs a great internet connection if classes are supposed to be online. Internet disconnection during my research sometimes made the experience a little tiring and disappointing.

## 5.4 Implications of the Present Study

Based on the results of the present study, the implications are as follows:

1. Project work or project-based learning (PBL) in the form of creating digital stories helps learners to have less speaking anxiety and to focus on communication without being overly concerned about language errors, peer's assessment as well as the consequences of "imagined failure" (MacIntyre, Noels, and Clement, 1997: 269).

## 5.5 Recommendations

The following recommendations based on the results of this study are presented and proposed for the students, the teachers, and the future researchers.

### 5.5.1 Students

This study may help EFL learners to gain a better perspective on how to integrate technology into their language learning to reach better learning outcomes. After the students learn how to use digital storytelling as a medium, it is suggested that

students continue creating and using digital storytelling to improve not only their presentation skills but also their language skills, especially speaking skills. In addition, they learn how digital storytelling not only facilitates meaningful as well as autonomous use of technology and language at the same time, but it also provides learning motivation.

### 5.5.2 Teachers

Based on the first research hypothesis that digital storytelling (DST) reduces the anxiety of English learners when speaking to others, the findings of the current study confirm what other researchers have found with more significant results. This supports the assertion teachers should try to improve their teaching skills, methods and class activities by considering digital media in an attempt to minimize students' EFL speaking anxiety.

### 5.5.3 Future Researchers

It is highly recommended that this type of research be conducted on teaching and learning process at different levels of education, different genders as well as with different subjects of study. It is also recommended that a qualitative research component be added in the form of interviews addressing the experience and motivation of learners under DST conditions, to support the quantitative data and results. It is also advisable that classes be held over a longer time span with multiple post-tests and a larger sample of students to make the effect and stability of this teaching approach more vivid. Ideally, data concerning learning (what skills and knowledge are acquired) should also be collected. Quasi-experimental, control group comparisons or within- subjects designs could also cast some light on the effectiveness and relative efficiency of DST as an instructional modality. More fin-grained designs could also usefully look at the effects of DST for different subgroups (high vs. lower anxiety participants, males vs. females, different age groups, different fluency levels).

## 5.6 Conclusion

The results of this study showed that the use of digital storytelling in teaching speaking skills of English as a foreign language can minimize students' speaking anxiety. This finding primarily emphasizes the effective role of designing appropriate speaking activities in teaching speaking skills because one of the most effective ways of reducing anxiety lies in the use of appropriate and engaging activities and tasks which can make speaking enjoyable and fun. Speaking is considered to be a complicated cognitive, linguistic and neurological process during which the speaker is required to create meaning by actively using imagination and mental schema as well as constant interaction with the speaker.

The ability to imagine and visualize is the basis for creative imagination which has a positive impact on cognition. There is evidence that digital storytelling helps listening comprehension as well as speaking ability and teachers should take the most advantage of storytelling in language learning for reinforcing speaking skills, imagination, cognition and creativity. If the speaker is not able to manage or control the linguistic input due to low language skills, speed of speech as well as exercises and type of activities, they will face a lot of unprocessed data which disrupts and interferes with comprehension which in return leads to misunderstanding and misinterpretation in listening and speaking. In the short run, the fear of misunderstanding and not being understood ends in becoming shy of speaking in front of others which by itself causes more anxiety. Although speaking anxiety is closely linked to students' level of language proficiency and lower level students suffer from higher levels of anxiety, the findings of this research study show that the use of appropriate teaching materials can reduce speaking anxiety even among high-level-anxiety students.

This study supports the positive use of digital storytelling and it educational value in teaching speaking of English as a foreign language. The reason for this positive impact lies in the fact that digital storytelling mixes the art of storytelling with technology tools and a multimedia environment. Listening to stories helps students pay more attention to pronunciation, vocabulary and syntax and how to use them in their speech with precision. Mastery over linguistic input can impact students'

speaking efficacy which in return minimizes speaking anxiety. However; when the art of storytelling occurs in a multimedia context, its impact as an educational technique increases because a multimedia context not only mixes text, picture, music, video and storytelling, but it can also activate students' multiple cognitive or mental resources like emotional intelligence simultaneously and help accurate processing of data. As a result, fear and anxiety in language use lessens and students can process the data more quickly and comfortably. Multimedia experiences, well-designed, can boost active and meaningful learning which results in students' increased learning motivation. Based on the findings of this research study, digital storytelling must be a continuous rather than a short-term teaching process if it is to help students overcome their speaking anxiety because Iranian students have had unhappy experiences with speaking and it is not an issue which can be solved overnight. In fact, overcoming speaking anxiety requires constant use of proper teaching materials tailored towards students' needs, interests and expectations as well as correct teaching methods while teaching speaking.

## References

Abdolmanafi-Rokni, S. J., & Qarajeh, M. (2014). Digital storytelling in EFL classrooms: The effect on the oral performance. *International Journal of Language and Linguistics, 2*(4), 252- 257. https://doi.org/10.11648/j.ijll.20140204.12

Akkakoson, S. (2016). Speaking Anxiety in English conversation classrooms among Thai Students. Malaysian Journal of Learning and Instruction, *13*(1), 63–82. https://doi.org/10.32890/mjli2016.13.1.4

Alizadeh, M. (2016). The impact of motivation on English language learning. *International Journal of Research in English Education, 1*(1), 11-15.

Andrade C. (2020). Understanding the difference between standard deviation and standard error of the mean, and knowing when to use which. *Indian Journal of Psychological Medicine*, *42*(4), 409-410. https://doi.org/10.1177/0253717620933419

Averill, J. R. (2015). Emotion and anxiety: Sociocultural, biological, and psychological determinants. In M. *Zuckerman* & C.D. Spielberger (Eds.), *Emotions and anxiety* (PLE: Emotion) (pp. 99-142). Psychology Press.

Azizifar, A., Faryadian, E., & Gowhary, H. (2014). The effect of anxiety on Iranian EFL learners speaking skill. *Applied and Basic Sciences*, *8*(10), 1747-1754.

Ball, S., Robinson, A., Shekhar, A., & Walsh, K. (1997). Dissociative symptoms in panic disorder. *The Journal of Nervous and Mental Disease*, *185*(12), 755-760.

Bates, J. A. (1979). Extrinsic reward and intrinsic motivation: A review with implications for the classroom. *Review of Educational Research, 49*(4), 557-576. https://doi.org/10.3102/00346543049004557

Bećirović, S. (2017). The relationship between gender, motivation and achievement in learning English as a foreign language. *European Journal of Contemporary Education, 6*(2), 210-220. https://doi.org/10.13187/ejced.2017.2.210

Bellé, N. (2013). Leading to make a difference: A field experiment on the performance effects of transformational leadership, perceived social impact,

and public service motivation. *Journal of Public Administration Research and Theory, 24*(1), 109-136. https://doi.org/10.1093/jopart/mut033

Benabou, R., & Tirole, J. (2003). Intrinsic and extrinsic motivation. *Review of Economic Studies, 70*(3), 489-520. https://doi.org/10.1111/1467-937x.00253

Bosma, B. (1992). Fairy tales, fables, legends, and myths: Using folk literature in your classroom: Teachers College Press: Teachers College, Columbia University.

Bourke, J. (2003). Fear and anxiety: Writing about emotion in modern history. *History Workshop Journal, 55*(1), 111-133. https://doi.org/10.1093/hwj/55.1.111

Bradley, M. M., & Lang, P. J. (2000). Measuring emotion: Behavior, feeling, and physiology. In R. D. Lane & L. Nadel (Eds.), *Series in affective science. Cognitive neuroscience of emotion* (pp. 242–276). Oxford University Press.

Buss, D. M. (1990). The evolution of anxiety and social exclusion. *Journal of Social and Clinical Psychology, 9*(2), 196-201.

Bygate, M. (1987). *Speaking*: Oxford University Press.

Byrne, B.M. (2005). *Structural Equation Modeling with AMOS* (2nd ed.). Taylor & Francis Group.

Cameron, O. G., Abelson, J. L., & Young, E. A. (2004). Anxious and depressive disorders and their comorbidity: Effect on central nervous system noradrenergic function. *Biological Psychiatry, 56*(11), 875-883. https://doi.org/10.1016/j.biopsych.2004.08.007

Castañeda, M. E. (2013). I am proud that I did it and it's a piece of me": Digital storytelling in the foreign language classroom. *Calico Journal, 30*(1), 44-62.

Cattell, R. B., & Child, D. (1975). *Motivation and dynamic structure*: Halsted Press.

Chu, P., & Spires, E. E. (1991). Validating the computer anxiety rating scale: Effects of cognitive style and computer courses on computer anxiety. *Computers in Human Behavior, 7*(1-2), 7-21. https://doi.org/10.1016/0747-5632(91)90025-v

Dalgleish, T., & Power, M. (2000). *Handbook of cognition and emotion*: John Wiley & Sons.

Decker, Fred. (2018, March 09). How to average Likert Scales. Sciencing. https://sciencing.com/average-likert-scales-6181662.html

Dincer, A., & Yesilyurt, S. (2017). Motivation to speak English: A self-determination theory perspective. PASAA: *Journal of Language Teaching and Learning in Thailand*, 53, 1-25.

Dobson, C. (2012). Effects of academic anxiety on the performance of students with and without learning disabilities and how students can cope with anxiety at school. Michigan. Northern Michigan University. Retrieved.

Dolan R. J. (2002). Emotion, cognition, and behavior. *Science (New York, N.Y.), 298*(5596), 1191–1194. https://doi.org/10.1126/science.1076358

Dörnyei, Z. (1998). Motivation in second and foreign language learning. *Language Teaching, 31*(3), 117-135. https://doi.org/10.1017/s026144480001315x

Elliot, A. J., & Dweck, C. S. (2013). *Handbook of competence and motivation*: Guilford Publications.

Ellis, G., & Brewster, J. (2014). *Tell it again!*: The storytelling handbook for primary English language teachers: British Council London.

Endler, N. S., & Kocovski, N. L. (2001). State and trait anxiety revisited. *Journal of Anxiety Disorders, 15*(3), 231-245. https://doi.org/10.1016/s0887-6185(01)00060-3

Evans, D., & Cruse, P. (2004). *Emotion, evolution, and rationality*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780198528975.001.0001

Eysenck, M., Payne, S., & Derakshan, N. (2005). Trait anxiety, visuospatial processing, and working memory. *Cognition & Emotion, 19*(8), 1214-1228. https://doi.org/10.1080/02699930500260245

Farrell, J. M., Johnston, M. E., & Twynam, G. D. (1998). Volunteer motivation, satisfaction, and management at an elite sporting competition. *Journal of Sport Management, 12*(4), 288-300. https://doi.org/10.1123/jsm.12.4.288

Fatmawaty, T. R. (2017). Topic-based instruction for teaching English for young learners. *KREDO : Journal Ilmiah Bahasa dan Sastra, 1*(1), 58-71. https://doi.org/10.24176/kredo.v1i1.1753

Fetzner, M. G., Teale Sapach, M. J., Mulvogue, M., & Carleton, R. N. (2016). “It's not just about being judged”: Interpersonal distrust uniquely contributes to

social anxiety. *Journal of Experimental Psychopathology, 7*(1), 31-40. https://doi.org/10.5127/jep.042414

Fog, K., Budtz, C., & Yakaboylu, B. (2005). *Storytelling:* Springer.

Fredricks, D. E., & S. Warriner, D. (2016). "We speak English in here and English only!": Teacher and ELL youth perspectives on restrictive language education. *Bilingual Research Journal, 39*(3-4), 309-323. https://doi.org/10.1080/15235882.2016.1230565

Gao, X. (2019). The learner and the learning environment: Section introduction. *Second Handbook of English Language Teaching,* 573-576. https://doi.org/10.1007/978-3-030-02899-2_65

Gardner, R. C. (2014). Attitudes and motivation in second language learning. In bilingualism, multiculturalism, and second language learning (pp. 63-84). Psychology Press.

Greene, D., & Lepper, M. R. (1974). Effects of extrinsic rewards on children's subsequent intrinsic interest. *Child Development, 45*(4), 1141. https://doi.org/10.2307/1128110

Guay, F., Vallerand, R. J., & Blanchard, C. (2000). On the assessment of situational intrinsic and extrinsic motivation: The Situational Motivation Scale (SIMS). *Motivation and Emotion, 24*(3), 175-213. https://doi.org/10.1023/A:1005614228250

Hadjimina, E., & Furnham, A. (2017). Influence of age and gender on mental health literacy of anxiety disorders. *Psychiatry Research,* 251, 8-13. https://doi.org/10.1016/j.psychres.2017.01.089

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2012). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice, 19*(2), 139-152. https://doi.org/10.2753/mtp1069-6679190202

Hatfield, E., Brinton, C., & Cornelius, J. (1989). Passionate love and anxiety in young adolescents. *Motivation and Emotion, 13*(4), 271-289. https://doi.org/10.1007/bf00995539

Hatzigeorgiadis, A., & Biddle, S. (2008). Negative self-talk during sport performance: relationships with pre-competition anxiety and goal-performance discrepancies. *Journal of Sport Behavior, 31*(3), 237-253.

Heckhausen, J., & Heckhausen, H. (2008). *Motivation and Action* (Vol. 22): Springer.

Heinssen, R. K., Glass, C. R., & Knight, L. A. (1987). Assessing computer anxiety: Development and validation of the computer anxiety rating scale. *Computers in Human Behavior, 3*(1), 49-59. https://doi.org/10.1016/0747-5632(87)90010-0

Hizwari, S., Irma, A., Hifzurrahman, A., & NorHaizar, W. (2008). Second language anxiety among diploma students in technical university (Universiti Malaysia Perlis).

Horwitz, E. K. (2010). Foreign and second language anxiety. *Language Teaching, 43*(2), 154-167. https://doi.org/10.1017/s026144480999036x

Howard-Malverde, R. (1989). Storytelling strategies in Quechua narrative performance. *Journal of Latin American Lore, 15*(1), 3-71.

HRONOVÁ, K. (2011). Using digital storytelling in the English language classroom. Masarykova univerzita, Pedagogická fakulta.

Hughes, R., & Reed, B. S. (2016). *Teaching and researching speaking.* Taylor & Francis.

James, N. P. (2013). Exploring the benefits of ACMC for speaking development. *IALLT Journal of Language Learning Technologies, 43*(1), 25-63. https://doi.org/10.17161/iallt.v43i1.8517

Jonas, E., McGregor, I., Klackl, J., Agroskin, D., Fritsche, I., Holbrook, C., Nash, K., Proulx, T., & Quirin, M. (2014). Threat and defense. *Advances in Experimental Social Psychology,* 219-286. https://doi.org/10.1016/b978-0-12-800052-6.00004-4

Katahira, K., Matsuda, Y., Fujimura, T., Ueno, K., Asamizuya, T., Suzuki, C., Cheng, K., Okanoya, K., & Okada, M. (2015). Neural basis of decision making guided by emotional outcomes. *Journal of Neurophysiology, 113*(9), 3056-3068. https://doi.org/10.1152/jn.00564.2014

Keller, J. M. (2016). Motivation, learning, and technology: Applying the ARCS-V motivation model. *Participatory Educational Research, 3*(2), 1-15. https://doi.org/10.17275/per.16.06.3.2

Kendall, P. C., Hudson, J. L., Gosch, E., Flannery-Schroeder, E., & Suveg, C. (2008). Cognitive-behavioral therapy for anxiety disordered youth: A randomized clinical trial evaluating child and family modalities. *Journal of Consulting and Clinical Psychology, 76*(2), 282-297. https://doi.org/10.1037/0022-006x.76.2.282

Kerr, M. E. (1988). Chronic anxiety and defining a self. *The Atlantic Monthly, 9*(9), 35-58.

Kirkwood, W. G. (1983). Storytelling and self-confrontation: Parables as communication strategies. *Quarterly Journal of Speech, 69*(1), 58-74. https://doi.org/10.1080/00335638309383635

Lambert, J., & Hessler, B. (2018). *Digital storytelling: Capturing lives, creating community.* Routledge.

Larson, G. E., Booth-Kewley, S., Merrill, L. L., & Stander, V. A. (2001). Physical symptoms as indicators of depression and anxiety. *Military Medicine, 166*(9), 796-799. https://doi.org/10.1093/milmed/166.9.796

Lau, C., Kitsantas, A., Miller, A. D., & Drogin Rodgers, E. B. (2018). Perceived responsibility for learning, self-efficacy, and sources of self-efficacy in mathematics: A study of international baccalaureate primary years programme students. *Social Psychology of Education, 21*(3), 603-620. https://doi.org/10.1007/s11218-018-9431-4

Levenson, R. W. (2011). Basic emotion questions. *Emotion Review, 3*(4), 379-386. https://doi.org/10.1177/1754073911410743

MacIntyre, P. D., Noels, K. A., & Clément, R. (1997). Biases in self-ratings of second language proficiency: The role of language anxiety. *Language Learning, 47*(2), 265-287. https://doi.org/10.1111/0023-8333.81997008

Martin, K. A., & Hall, C. R. (1995). Using mental imagery to enhance intrinsic motivation. *Journal of Sport and Exercise Psychology, 17*(1), 54-69. https://doi.org/10.1123/jsep.17.1.54

McLellan, H. (2007). Digital storytelling in higher education. *Journal of Computing in Higher Education, 19*(1), 65 79. https://doi.org/10.1007/bf03033420

Mega, C., Ronconi, L., & De Beni, R. (2014). What makes a good student? How emotions, self-regulated learning, and motivation contribute to academic achievement. *Journal of Educational Psychology, 106*(1), 121-131. https://doi.org/10.1037/a0033546

Moscaritolo, L. M. (2009). Interventional strategies to decrease nursing student anxiety in the clinical learning environment. *Journal of Nursing Education, 48*(1), 17-23. https://doi.org/10.3928/01484834-20090101-08

Na, Z. (2007). A study of high school students' English learning anxiety. *The Asian EFL Journal, 9*(3), 22-34.

Nazir, M., Bashir, S., & Raja, Z. B. (2014). A study of second language speaking-anxiety among ESL intermediate Pakistani learners. *International Journal of English and Education, 3*(3), 216-229.

Nenfeldt, V., & Guralnik, D. (1991). *Webster's New World dictionary of American English* (3rd college edition, p. 985): New York: Prentice Hall.

Niedenthal, P. M., & Ric, F. (2017). *Psychology of emotion*: Psychology Press.

Niemi, H., & Multisilta, J. (2015). Digital storytelling promoting twenty-first century skills and student engagement. *Technology, Pedagogy and Education, 25*(4), 451-468. https://doi.org/10.1080/1475939x.2015.1074610

Norton, P. J., & Asmundson, G. J. (2004). Anxiety sensitivity, fear, and avoidance behavior in headache pain. *Pain, 111*(1), 218-223. https://doi.org/10.1016/j.pain.2004.06.018

Öhman, A. (2008). Fear and anxiety. *Handbook of emotions*, 709-729.

Ono, Y. (2014). Motivational effects of digital storytelling on Japanese EFL learners. *Proceedings of CLaSIC,* 414-431.

Onu, D., Kessler, T., & Smith, J. R. (2016). Admiration: A conceptual review. *Emotion Review, 8*(3), 218-230. https://doi.org/10.1177/1754073915610438

Oxford, R., Park-Oh, Y., It, S., & Sumrall, M. (1993). Japanese by satellite: Effects of motivation, language learning styles and strategies, gender, course level, and previous language learning experience on Japanese language achievement. *Foreign Language Annals, 26*(3), 359-371. https://doi.org/10.1111/j.1944-9720.1993.tb02292.x

Öztürk, G., & Gürbüz, N. (2013). The impact of gender on foreign language speaking anxiety and motivation. *Procedia - Social and Behavioral Sciences,* 70, 654-665. https://doi.org/10.1016/j.sbspro.2013.01.106

Page, R. M., Taylor, J., Suwanteerangkul, J., & Novilla, L. M. (2005). The influence of friendships and friendship-making ability in physical activity participation in Chiang Mai, Thailand high school students. *International Electronic Journal of Health Education*, 8, 95-103.

Park, H., & Lee, A. R. (2005). L2 learners' anxiety, self-confidence and oral performance. Paper presented at the Proceedings of the 10th Conference of Pan-Pacific Association of Applied Linguistics.

Perron, L. (2007). What gestures to perform a collaborative storytelling? *Lecture Notes in Computer Science,* 77-88. https://doi.org/10.1007/978-3-540-77039-8_7

Pinder, C. C. (2014). *Work motivation in organizational behavior.* Psychology Press.

Rao, Z. (2013). Teaching English as a foreign language in China: Looking back and forward. *English Today, 29*(3), 34-39. https://doi.org/10.1017/s0266078413000291

Reeder, K., Heift, T., Roche, J., Tabyanian, S., Schlickau, S., & Golz, P. (2004). Toward a theory of evaluation for second language learning media. *New perspectives on CALL for second language classrooms,* 255-278. https://doi.org/10.4324/9781410610775

Richman, L. S., Kubzansky, L., Maselko, J., Kawachi, I., Choo, P., & Bauer, M. (2005). Positive emotion and health: Going beyond the negative. *Health Psychology, 24*(4), 422-429. https://doi.org/10.1037/0278-6133.24.4.422

Sadik, Alaa. (2008). Digital storytelling: A meaningful technology-integrated approach for engaged student learning. *Educational Technology Research and Development, 56*(4), 487-506. https://doi.org/10.1007/s11423-008-9091-8

Sax, B. (2006). Storytelling and the "information overload". *On the Horizon, 14*(4), 165-170. https://doi.org/10.1108/10748120610708078

Scherer, K. R. (2005). What are emotions? And how can they be measured? *Social Science Information, 44*(4), 695-729. https://doi.org/10.1177/0539018405058216

Schiefele, U. (1991). Interest, learning, and motivation. *Educational Psychologist, 26*(3), 299-323. https://doi.org/10.1207/s15326985ep2603&4_5

Schmidt, R., Boraie, D., & Kassabgy, O. (1996). Foreign language motivation: Internal structure and external connections. University of Hawaii working papers in English as a second language 14(2).

Septiani, R. A., & Sulastri, L. (2019). Teacher strategies using story-telling method: Increase the Courage of students to speak. *PROJECT (Professional Journal of English Education), 2*(6), 838- 844.

Shackman, A. J., Sarinopoulos, I., Maxwell, J. S., Pizzagalli, D. A., Lavric, A., & Davidson, R. J. (2006). Anxiety selectively disrupts visuospatial working memory. *Emotion, 6*(1), 40-61. https://doi.org/10.1037/1528-3542.6.1.40

Shaver, P. R., Morgan, H. J., & Wu, S. (1996). Is love a "basic" emotion? *Personal Relationships, 3*(1), 81-96. https://doi.org/10.1111/j.1475-6811.1996.tb00105.x

Shi, X., Brinthaupt, T. M., & McCree, M. (2015). The relationship of self-talk frequency to communication apprehension and public speaking anxiety. *Personality and Individual Differences*, 75, 125-129. https://doi.org/10.1016/j.paid.2014.11.023

Smeda, N., Dakich, E., & Sharda, N. (2014). The effectiveness of digital storytelling in the classrooms: A comprehensive study. *Smart Learning Environments, 1*(1), 6. https://doi.org/10.1186/s40561-014-0006-3

Somdee, M., & Suppasetseree, S. (2013). Developing English speaking skills of Thai undergraduate students by digital storytelling through websites. Proceeding of Foreign Language Learning and Teaching.

Sood, E. D., & Kendall, P. C. (2007). Assessing anxious self-talk in youth: The negative affectivity self-statement questionnaire–anxiety scale. *Cognitive Therapy and Research, 31*(5), 603-618. https://doi.org/10.1007/s10608-006-9043-8

Spence, K. W., Taylor, J., & Ketchel, R. (1956). Anxiety (drive) level and degree of competition in paired-associates learning. *Journal of Experimental Psychology, 52*(5), 306-310. https://doi.org/10.1037/h0043812

Stein, M. B., & Stein, D. J. (2008). Social anxiety disorder. *The Lancet, 371*(9618), 1115-1125. https://doi.org/10.1016/s0140-6736(08)60488-2

Stenling, A., Hassmén, P., & Holmström, S. (2014). Implicit beliefs of ability, approach-avoidance goals and cognitive anxiety among team sport athletes. *European Journal of Sport Science, 14*(7), 720-729. https://doi.org/10.1080/17461391.2014.901419

Stevens, J. P., & Stevens, J. P. (2002). Applied multivariate statistics for the social sciences. https://doi.org/10.4324/9781410604491

Stipek, D. (1993). *Motivation to learn: From theory to practice* (2nd ed.). Needham Heights, MA: Allyn & Bacon.

Stone-Mediatore, S. (2016). Storytelling/Narrative. *Oxford Handbooks Online.* https://doi.org/10.1093/oxfordhb/9780199328581.013.27

Strijkers, K., & Costa, A. (2016). The cortical dynamics of speaking: Present shortcomings and future avenues. *Language, Cognition and Neuroscience, 31*(4), 484-503. https://doi.org/10.1080/23273798.2015.1120878

Tannen, D. (1991). Teachers' classroom strategies should recognize that men and women use language differently. *The Chronicle of Higher Education, 37*(40), B1-B4.

Theune, M., Linssen, J., & Alofs, T. (2013). Acting, playing, or talking about the story: An annotation scheme for communication during interactive digital storytelling. Paper presented at the international conference on interactive digital storytelling.

Traister, B. (2012). States of exception: Anxiety, panic, and the nation. *Canadian Review of American Studies, 42*(1), 1-6. https://doi.org/10.3138/cras.42.1.1

Tsiplakides, I., & Keramida, A. (2009). Helping students overcome foreign language speaking anxiety in the English classroom: Theoretical issues and practical recommendations. *International Education Studies, 2*(4), 39-44.

Urdan, T., & Turner, J. C. (2005). Competence Motivation in the Classroom. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 297–317). Guilford Publications.

Urhahne, D., Chao, S., Florineth, M. L., Luttenberger, S., & Paechter, M. (2011). Academic self-concept, learning motivation, and test anxiety of the underestimated student. *British Journal of Educational Psychology, 81*(1), 161-177. https://doi.org/10.1348/000709910x504500

Vallerand, R. J., & Ratelle, C. F. (2002). Intrinsic and extrinsic motivation: A hierarchical model. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 37–63). University of Rochester Press.

VanSledright, B., & Brophy, J. (1992). Storytelling, imagination, and fanciful elaboration in children's historical reconstructions. *American Educational Research Journal, 29*(4), 837-859. https://doi.org/10.3102/00028312029004837

Vogel, I., Van de Looij-Jansen, P. M., Mieloo, C. L., Burdorf, A., & De Waart, F. (2014). Risky music listening, permanent tinnitus and depression, anxiety, thoughts about suicide and adverse general health. *PLoS ONE, 9*(6), e98912. https://doi.org/10.1371/journal.pone.0098912

Wahid, S. N., Yusof, Y., & Razak, M. R. (2014). Math anxiety among students in higher education level. *Procedia - Social and Behavioral Sciences,* 123, 232-237. https://doi.org/10.1016/j.sbspro.2014.01.1419

Weiner, B. (2013). *Human motivation*. Psychology Press.

Wise, R. A. (2004). Dopamine, learning and motivation. *Nature Reviews Neuroscience, 5*(6), 483-494. https://doi.org/10.1038/nrn1406

Witt, P. L., & Behnke, R. R. (2006). Anticipatory speech anxiety as a function of public speaking assignment type an earlier version of this paper was presented at the 2005 convention of the national communication association in Boston. *Communication Education, 55*(2), 167-177. https://doi.org/10.1080/03634520600566074

Wright, C., Diener, M. L., & Kemp, J. L. (2012). Storytelling dramas as a community building activity in an early childhood classroom. *Early Childhood Education Journal, 41*(3), 197-210. https://doi.org/10.1007/s10643-012-0544-7

Xu, Y., Park, H., & Baek, Y. (2011). A new approach toward digital storytelling: An activity focused on writing self-efficacy in a virtual learning environment. *Journal of Educational Technology & Society, 14*(4), 181-191.

Yang, Y. C., & Wu, W. I. (2012). Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation: A year-long experimental study. *Computers & Education, 59*(2), 339-352. https://doi.org/10.1016/j.compedu.2011.12.012

Ya-Ting C. Yang, Wan-Chi I. Wu. (2012). Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation: A year-long experimental study. *Computers & Education 59*(2012), 339–352.

Zeidner, M. (2014). Anxiety in education. *International Handbook of Emotions in Education*. https://doi.org/10.4324/9780203148211.ch14

Zentall, T. R. (2017). The study of emotion in animals. *Animal Sentience, 2*(14). https://doi.org/10.51291/2377-7478.1227

Zhao, L. (2015). The influence of learners' motivation and attitudes on second language Teaching. *Theory and Practice in Language Studies, 5*(11), 2333. https://doi.org/10.17507/tpls.0511.18

# Appendix

## Appendix# 1

## Computer Anxiety Rating Scale (CARS)

## Heinssen, Glass & Knight (1987)

**Q-1 Age Check one**

18-20 ◯

21-25 ◯

26-30 ◯

31-35 ◯

**Q-2 Education**

High school ◯

Bachelor's Degree ◯

Master's Degree ◯

PhD ◯

**Q-3 Living Overseas Experience**

Yes ◯

No ◯

**Q-4 Computer Knowledge & Experience**

No knowledge or skills ◯

Little knowledge and skills ◯

Knowledgeable with skills ◯

Very knowledgeable and skilled ◯

**Q-5 Weekly Computer Usage**

Less than 1 hour ◯

1 to 4 hours ◯

More than 5 hours ◯

Please read the following sentences carefully and answer honestly. Please note the five options: **SA = strongly agree, A = agree, N = neither agree nor disagree, D = disagree, SD = strongly disagree.** Put a cross in the relevant square.

This questionnaire is designed solely for research on finding your computer anxiety levels and will have no effect on your grades. The accuracy of your answers to the following questions can help us achieve our research goals.

**"I have read and signed the consent form for this research study and I participate under the conditions described."**

**Yes ( )** **No ( )**

| | Situation | strongly agree | agree | moderate | disagree | strongly disagree |
|---|---|---|---|---|---|---|
| 1 | I feel insecure about my ability to interpret and use new computer applications. | | | | | |
| 2 | I look forward to using a computer on my job | | | | | |
| 3 | I do not think I would be able to learn a new computer language. | | | | | |
| 4 | I am confident I can learn computer skills. | | | | | |
| 5 | Anyone can learn to use a computer if they are patient and motivated. | | | | | |
| 6 | Learning to operate a computer is like learning any new skill – the more you practice the better you become. | | | | | |
| 7 | I am afraid that if I begin to use computers I will become dependent on them and lose some of my reasoning skills. | | | | | |
| 8 | I am sure that with time and practice I will be as comfortable working with | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | computers as I am working with basic word processing software. | | | | | |
| 9 | I feel that I will be able to keep up with the advances happening in the computer field | | | | | |
| 10 | I dislike working with machines that are smarter than I am. | | | | | |
| 11 | I feel apprehensive about using computers. | | | | | |
| 12 | I have difficulty in understanding how a computer works. | | | | | |
| 13 | It scares me to think that I could cause the computer to destroy a large amount of information by hitting the wrong key. | | | | | |
| 14 | I hesitate to use a computer for fear of making mistakes that I cannot correct. | | | | | |
| 15 | You have to be a genius to understand all the special commands contained in most computer software. | | | | | |
| 16 | If given the opportunity I would like to learn about and use computers. | | | | | |
| 17 | I have avoided computers because they are unfamiliar and somewhat intimidating to me. | | | | | |
| 18 | I feel computers are necessary tools in both educational and work settings. | | | | | |
| 19 | The challenge of learning computers is exciting. | | | | | |
| 20 | I feel that understanding computers will make me a more productive individual. | | | | | |

# Appendix # 2

## Foreign Language Classroom Anxiety Scale (FLCAS)

## Horwitz and Cope (1986)

Please read the following sentences carefully and answer honestly. Please note the five options: **SA = strongly agree, A = agree, N = neither agree nor disagree, D = disagree, SD = strongly disagree.** Put a cross in the relevant square.

This questionnaire is designed solely for research on finding the relationship between using digital storytelling and anxiety levels and will have no effect on your grades. The accuracy of your answers to the following questions can help us achieve our research goals.

**"I have read and signed the consent form for this research study and I participate under the conditions described."**

**Yes ( )** **No ( )**

| | Situations | SA = strongly agree | A = agree | N = neither agree nor disagree | D = disagree | SD = strongly disagree |
|---|---|---|---|---|---|---|
| 1 | I never feel quite sure of myself when I am speaking in my foreign language class | | | | | |
| 2 | I don't worry about making mistakes in language class. | | | | | |
| 3 | I tremble when I know that I'm going to be called on in language class. | | | | | |
| 4 | It frightens me when I don't understand what the teacher is saying in the foreign language. | | | | | |
| 5 | It wouldn't bother me at all to take more foreign language classes. | | | | | |
| 6 | During language class, I find myself | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | thinking about things that have nothing to do with the course. | | | | | |
| 7 | I keep thinking that the other students are better at languages than I am. | | | | | |
| 8 | I am usually at ease during tests in my language class. | | | | | |
| 9 | I start to panic when I have to speak without preparation in language class. | | | | | |
| 10 | I worry about the consequences of failing my foreign language class. | | | | | |
| 11 | I don't understand why some people get so upset over foreign language classes. | | | | | |
| 12 | In language class, I can get so nervous I forget things I know. | | | | | |
| 13 | It embarrasses me to volunteer answers in my language class. | | | | | |
| 14 | I would not be nervous speaking the foreign language with native speakers. | | | | | |
| 15 | I get upset when I don't understand what the teacher is correcting. | | | | | |
| 16 | Even if I am well prepared for language class, I feel anxious about it. | | | | | |
| 17 | I often feel like not going to my language class. | | | | | |
| 18 | I feel confident when I speak in foreign language class. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 19 | I am afraid that my language teacher is ready to correct every mistake I make. | | | | | |
| 20 | I can feel my heart pounding when I'm going to be called on in language class. | | | | | |
| 21 | The more I study for a language test, the more confused I get. | | | | | |
| 22 | I don't feel pressure to prepare very well for language class. | | | | | |
| 23 | I always feel that the other students speak the foreign language better than I do. | | | | | |
| 24 | I feel very self-conscious about speaking the foreign language in front of other students. | | | | | |
| 25 | Language class moves so quickly I worry about getting left behind. | | | | | |
| 26 | I feel more tense and nervous in my language class than in my other classes. | | | | | |
| 27 | I get nervous and confused when I am speaking in my language class. | | | | | |
| 28 | When I'm on my way to language class, I feel very sure and relaxed. | | | | | |
| 29 | I get nervous when I don't understand very word the language teacher says. | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 30 | I feel overwhelmed by the number of rules you have to learn to speak a foreign language. | | | | | |
| 31 | I am afraid that the other students will laugh at me when I speak the foreign language. | | | | | |
| 32 | I would probably feel comfortable around native speakers of the foreign language. | | | | | |
| 33 | I get nervous when the language teacher asks questions which I haven't prepared in advance. | | | | | |

# Appendix# 3

## Second Language Speaking Anxiety Scale (SLSAS) Questionnaire

In the column *Anxiety* fill in the circles according to how anxious you feel when you *speak English* in the following situations.

**"I have read and signed the consent form for this research study and I participate under the conditions described."**

**Yes ( )** **No ( )**

| | *Situation* | Not at all anxious | Slightly anxious | Moderately anxious | Very anxious | Extremely anxious |
|---|---|---|---|---|---|---|
| 1 | The teacher asks me a question in English in class. | | | | | |
| 2 | Speaking informally to my English teacher out of class. | | | | | |
| 3 | Taking part in a group discussion in class. | | | | | |
| 4 | Taking part in a role-play or dialogue in front of my class. | | | | | |
| 5 | Giving an oral presentation to the rest of the class. | | | | | |
| 6 | When asked to contribute to a formal discussion in class. | | | | | |
| 7 | Talking to administrative staff of my language school in English. | | | | | |
| 8 | Taking part in a conversation out of class with more than one native speaker of English. | | | | | |
| 9 | Starting a conversation out of class with a friend or colleague who is a native speaker of English. | | | | | |
| 10 | A lecturer/supervisor in my intended university faculty of study asks me a question in English. | | | | | |
| 11 | Asking for advice in English from a lecturer/supervisor in my intended university faculty of study. | | | | | |
| 12 | A native speaker I do not know asks me questions. | | | | | |

# Appendix# 4

## Attitude Motivation Test Battery (AMTB)

## Gardner (1985)

Please read the following sentences carefully and answer honestly. Please note the five options: **SA = strongly agree, A = agree, N = neither agree nor disagree, D = disagree, SD = strongly disagree.** Put a cross in the relevant square.

This questionnaire is designed solely for research on finding the relationship between using digital storytelling and motivation and will have no effect on your grades. The accuracy of your answers to the following questions can help us achieve our research goals.

**"I have read and signed the consent form for this research study and I participate under the conditions described."**

**Yes ( )** **No ( )**

| | Situation | strongly agree | agree | moderate | disagree | strongly disagree |
|---|---|---|---|---|---|---|
| 1 | Studying English is important to me because I can understand the cultures and traditions of the world. | | | | | |
| 2 | Studying English is important to me because I can understand English stories, novels, and literature. | | | | | |
| 3 | Studying English can be important for me because I will be able to communicate with my neighbors in the English-speaking countries. | | | | | |
| 4 | Studying English can be important for me because it will help me to get an ideal job in the future. | | | | | |
| 5 | Studying English can be important for me because I will need it for my future career. | | | | | |
| 6 | Studying English can be important for me because it will make me a more knowledgeable person. | | | | | |
| 7 | Studying English helps me to better understand the ways of life of the | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | English-speaking countries. | | | | | |
| 8 | Studying English helps me to easily make friends with foreigners. | | | | | |
| 9 | Studying English helps me to associate with the neighbors in the English-speaking countries and learn about their values and beliefs. | | | | | |
| 10 | Studying English can be important for me because other people will respect me more if I know a foreign language. | | | | | |
| 11 | Studying English can be important for me because it will help me to further my studies. | | | | | |
| 12 | Studying English can be important for me because it will help me search for information and materials in English on the Internet. | | | | | |
| 13 | Studying English helps me to be open-minded and friendly like native English speakers. | | | | | |
| 14 | Studying English is important to me because it will help me when I travel abroad | | | | | |
| 15 | Studying English is important to me because it will help me to achieve at school. | | | | | |
| 16 | The Americans and British are kind and cheerful. | | | | | |
| 17 | I enjoy watching English news and movies. | | | | | |
| 18 | I enjoy reading English books, articles, newspapers, and magazines. | | | | | |
| 19 | I study English diligently because I want to earn a university degree. | | | | | |
| 20 | I study English diligently because it is an important tool for communication. | | | | | |