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Investigating the impact of digital storytelling on EFL learners' language motivation levels

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Highlights

- To increase student motivation and engagement, instructional materials, methods, and techniques are crucial to the language learning and teaching process.
- The current study examines how the creation of digital storytelling affects learners' L2 motivation levels in terms of various factors, including gender, frequency of computer use, computer use in foreign language learning, and computer self-efficacy perceptions.
- Incorporating digital stories into language instruction is considered beneficial since it increases student motivation.

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Keywords: *Digital storytelling, EFL learning, motivation*

Abstract

Motivation has been studied in many contexts and is acknowledged as one of the most significant aspects of language instruction. To increase student motivation and engagement, instructional materials, methods, and techniques are crucial to the language learning and teaching process. The current study examined how the creation of digital storytelling affected learners' L2 motivation levels. Sixty-three prep school students in a Turkish public university participated in the study. The study was conducted using a mixed method research methodology and the nonequivalent control (comparison) groups design. Two surveys, the English Language Learning Motivation Questionnaire and the Motivation Level of Making Digital Short Stories Questionnaire, and a semi-structured interview were used to gather the data. The SPSS software was used to evaluate quantitative data, and content analysis was used to assess the qualitative data. The results showed that the experimental group's motivation level differed from the control group in a statistically significant way. Additionally, the results showed that although the experimental group's L2 motivation level increased, the control group's post-test scores decreased. Several factors, including gender, computer use frequency, and computer self-efficacy beliefs, were also examined, and these factors were found to have no statistically significant effect on learners' L2 motivation levels. Consequently, incorporating digital stories into language instruction is considered beneficial since it increases student motivation.

1. Introduction

Stories have evolved over time, adapting to each new medium that has emerged (Malita & Martin, 2010). As computer technology has advanced, the art of storytelling has also undergone a digital transformation, moving away from oral storytelling as it was in the past and toward using various multimedia tools to tell personal stories and share them with people worldwide through social media and other online platforms (Castañeda, 2013; Peshevska & Koceska,2024). As a result of the increasing prevalence of digital technologies in modern society, the use of digital devices has become inevitable. Thus, integrating technology into educational settings has become more efficient, allowing students to create and edit videos and movies to share their own stories with others (Chung, 2006). This has led to the rise of the concept of

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digital storytelling, which is defined as a short and generally personal narrative that includes video footage and photos audio-recorded and accompanied by music (Castañeda, 2013) to describe or illustrate a significant character, event, or location (Chung, 2006).

Storytelling has been widely linked to and incorporated into education due to its positive effects on learners' knowledge construction and enhancement of L2 motivation. According to Robin (2008), digital storytelling helps and motivates students to have discussions on the subjects covered in the story and also makes it possible for them to arrange the information they have gathered in a more understandable manner. Additionally, Tsou et al. (2006) indicate that learners in virtual environments greatly benefit from using computers or digital technology in the language teaching and learning process. According to Bran (2010), the ability of digital storytelling to deliver materials with various visuals, words, and sounds may also increase learners' attention and aid in improving their language learning performance.

Sadik (2008) addresses the idea that digital storytelling serves as an effective method due to the functions that enable students to be able to collect information, give them the opportunity to create or form new ideas and help learners enhance their comprehension of the curricular content. From a pedagogical perspective, digital storytelling could serve as a useful material to enhance learners' performance by providing an increase in their motivation level by attracting their interest through several functions in terms of audio-visual effects that it has (Sylvester & Greenidge, 2009). The idea related to an increase in learners' motivation or interest in the learning process is also discussed in the literature, as Lowenthal and Dunlap (2010) express that digital storytelling helps learners get involved in learning through several integrated multimedia tools. It has the potential to improve student learning outcomes and motivation when used through an appropriate pedagogical procedure (Liu et al., 2018). Therefore, the present study aims to analyze the effects of digital storytelling on EFL learners' motivation levels via a quasi-experimental study along with several variables, including gender, computer use frequency, and computer self-efficacy beliefs.

2. Literature

2.1. Motivation

The word "motivation" comes from the Latin "movere," which means to move and is defined as an internal force that drives action and establishes its course (Singh, 2011). Throughout history, several schools of thought—including behaviorist, cognitive, and constructivist—have held differing views on motivation. The concept of reward expectation served as the foundation for the behavioral perspective that gave rise to motivation theory. According to this hypothesis, which is seen to be crucial in explaining human behavior, a person acts in a way that will result in more excellent reinforcement because of their desire for and prior experiences with positive reinforcement. Additionally, it is maintained that motivation and outside factors are closely related (Brown, 2007). On the other hand, motivation is viewed from a cognitivist perspective as a far more significant influence on people's choices. It considers some of the needs or drives that underlie our choices. Additionally, it is suggested that cognitivists place a high value on the motivational element for students seen as knowledge seekers and problem solvers (Deubel, 2003). Constructivists think about motivation in terms of social interaction with other individuals as well as personal decisions or self-determination (Brown, 2007). According to the constructivist viewpoint, meaningful learning occurs through learning by doing and the opportunity for group collaboration, which applies to both language acquisition and material comprehension (Morchio & Muñoz, 2013). When looking at the idea of motivation from all three aspects, it is stated that the term has been used in various ways, referring to necessities like the expectation of reward, individual decisions, and social situations. Given the importance of motivation in many areas, it has also been examined in relation to language learning, where Brown (2007) contends that all three degrees of motivation are required.

Motivation has been examined by several schools of thought not just in relation to their ideas but also in terms of other factors that influence it. These factors are known as intrinsic/extrinsic motivation and integrative/instrumental motivation. Several important studies on the connection between motivation and language learning were conducted by people like Robert Gardner and Wallace Lambert (1972, as cited in Brown, 2007). They looked at the influence of motivation in relation to two distinct elements: integrative

and instrumental. The notion of learning a language to pursue a vocation, some technical materials, and the ability to translate are all considered to be part of the instrumental orientation of motivation. The integrative approach, on the other hand, refers to learning a second language to be able to participate in social interactions within the target language's community and integrate into its culture (Brown, 2007).

From the linguistic perspective, motivation is regarded to be an affective element related to an individual's adaptation to learning a second or foreign language (Norris-Holt, 2001) and is widely recognized as playing a crucial role as there is a close connection between motivation and the process of learning a second or foreign language. Theory and research on the topic indicate that several factors influence this process. Among these, the selection of materials is seen to be among the most crucial. The effects of computer-assisted language learning (CALL), which has been the focus of research for many years, have been studied. As computers and related materials entered our daily lives in the 1960s, they have replaced traditional teaching methods in educational settings regarding the various facilitating elements they served since earlier periods.

It is widely acknowledged that the teaching and learning of languages has become more practical and pleasurable due to the incorporation of computers into educational settings, mainly through its effects on language classrooms. By utilizing the technology's powerful features, teachers can identify the strengths and weaknesses of their students and adjust their lesson plans accordingly. When students are given the chance to use different multimedia programs or software versions that have been created for them to improve their skills, it is suggested that technology helps them become more motivated, participate more actively in the courses, and become more interested in learning because they act as excellent stimuli for language learning (Lai & Kritsonis, 2006; Nobar & Ahangari, 2012). Computers play a significant role in interacting with students to help them deal with errors by providing immediate feedback (Nabah et al., 2009). Additionally, computers can improve language skills through various communicative and interactive activities (Lai & Kritsonis, 2006). This contrasts with earlier teaching methods like textbooks and tape recordings, which give students rules and some solutions but no feedback on their errors specific to certain problems.

2.2. Storytelling

Storytelling, which is characterized as a constructed experience that engages the listener and the narrator in a highly dynamic and creative process, is a natural way for people to connect and interact with one another (Mello, 2001). It has been widely used in social interactions (Chung, 2006) to help people share values and wisdom, exchange knowledge, and create understanding (Malita & Martin, 2010) because it enables people to understand better complex concepts or information (Chung, 2006). Because of its features that allow individuals to explain and interpret events, experiences, or circumstances while also giving them the chance to create new meaning and knowledge, storytelling has been used for many kinds of human interaction throughout history. Additionally, storytelling can be used to link generations, past and present or future, to transmit or reformulate written or oral beliefs or ideals (Chung, 2006). It has also been extensively discussed in the context of learning because of its advantages and purposes for both listeners and storytellers.

Storytelling and learning are closely related because they allow people to construct meanings through various processes (Malita & Martin, 2010). Tsou et al. (2006) assert that storytelling is a useful and effective instructional tool that is frequently used by both teachers and students in the language teaching and learning process due to its ability to foster a supportive and cooperative classroom setting that teachers can utilize to help their students improve their linguistic skills. Furthermore, using storytelling in the curriculum for language instruction and learning may assist students in becoming more proficient in those areas (Nazir Atta-Alla, 2012). In a similar vein, Hung et al. (2012) indicate that storytelling has been widely used in the learning process due to its benefits in enhancing students' knowledge construction and motivation to learn. Storytelling helps lower students’ affective filter, allowing them to use their imagination and collaborate more effectively. Through classroom activities based on storytelling, students are given the opportunity to express their ideas orally while also improving their oral communication skills (Nazir Atta-Alla, 2012).

Many teachers view storytelling as a fundamental component of their language teaching instruction, using it to help students develop and enhance their receptive and productive language skills as well as increase their understanding of cultural aspects. Therefore, it is possible to conclude that storytelling aids in the teaching and learning of languages for both educators and students. Nazir Atta-Alla (2012) states that ESL/EFL students can improve and enhance their language proficiency through storytelling.

2.3. Digital Transformation: From Storytelling to Digital Storytelling

A new era of user-generated content and storytelling with updated multimedia programs among various resources began with the advent of Web 2.0 tools (Alexander, 2011). The concept is also consistent with that of Lankshear and Knobel (2011), who contend that literacy has evolved into a new form that differs from earlier views of print-bound from a single point but is iconic and calls for a number of 21st-century digital skills that are also transversal in non-print formats because new forms of literacy view text as any type of material that can be read, understood or created in order to share meaning. Additionally, it could be applied to a wide range of skills, including speaking, listening, reading, and writing (Skinner & Hagood, 2008). This is because virtually any digital material or device that many professionals and amateurs utilize can be used to create digital stories. Their genres could include short stories that are created using one or more media, as well as personal, fiction, or nonfiction (Alexander, 2011).

Based on the notion that people are surrounded by various multimedia tools in their virtual world, students are also seen to become digital natives, eager to use digital tools and applications (Chigona, 2014). It is also suggested that they benefit from digital tools like a second language, for whom creating digital stories is an appealing function (Alexander, 2011). This leads their educators to consider how they can offer them opportunities to convert traditional methods into virtual environments (Yoon, 2013) shaped by cyberculture (Alexander, 2011). In this regard, it will be advantageous to employ digital learning resources that will inspire students, ease their learning, and improve communication. These tools come in a wide variety of forms, including digital storytelling tools (Şahin & Kara, 2022).

It appears that integrating technology into EFL (English as a Foreign Language) instruction improves students' motivation. Digital storytelling, which combines text, animation, voice, and audio, is an effective strategy that can be utilized to increase students' motivation in EFL classes (Adara & Haqiyyah, 2020; Parsazadeh et al., 2021). Choi (2012) also suggests that digital storytelling is an innovative way of conveying stories by combining elements such as text, images, sounds, and videos to create a digital format that people may share. Additionally, Alexander (2011) defines digital storytelling as sharing stories using digital technologies and views stories as transforming narratives using cyberculture features. According to Meadows (2003), digital storytelling also includes personal multimedia narratives produced using various devices, including computers, digital cameras, and software.

2.4. The Benefits of Digital Storytelling

Several aspects related to the benefits of digital storytelling have been discussed in the literature by various researchers. Alexander (2011) addresses the idea that through the construction of digital stories, students have the opportunity to create their own creative projects; in other words, they are integrated into the narrative process themselves. In constructing a digital storytelling project, learners can benefit from the pedagogical approaches of constructivist learning, which are most evident in the story creation process, which also addresses the concept of meaningful learning. It is also suggested by Castañeda (2013) that digital stories not only provide learners and the audience with information but also go further by creating meaningful information for them, and Chung (2006) expresses that thanks to the developments in technology, learners could be able to create their own sense of learning and knowledge. Furthermore, it helps learners enrich their own ideas through their digital projects and communicate via them in terms of the real world. Thanks to the meta-cognition perspective, learners are provided with the opportunity to make connections between their own work and their meaningful learning (Alexander, 2011)

Construction of digital stories is utilized in terms of improving language skills as it refers to the idea that digital storytelling not only helps learners enhance the production of the output but also serves as a good practice for learners in terms of writing because it is suggested that like in the teaching of first language,

the process approach that is utilized by digital storytelling, also contributes to improving second language writing skills as through this approach, several additional goals are also set that require to combine the presentation of the story with the use of technology to be able to enrich it (Castañeda, 2013). A participatory approach is discussed within the scope of digital storytelling, creating an interaction between the storyteller and the listener. Furthermore, through digital storytelling, learners can have new opportunities to engage in dialogues via various communicative practices (Flottemesch, 2013).

Among the other benefits of digital storytelling, Roby (2010) suggests that taking advantage of digital storytelling in the classroom integrated with sound, music, photos, and video enables instructors to capture learners' interest because digital storytelling gives learners of different ages the opportunity of designing multimodal stories through which their experiences and interests could be represented (Skinner & Hagood, 2008). Çoruk and Seferoğlu (2020) indicate that activities involving digital storytelling can help students enhance their capacity for reflective thinking. Furthermore, Yang and Wu (2012) address the idea that digital storytelling provides learners with authentic scenarios related to their personal experiences, making the subject matter more crucial and valuable. From a pedagogical perspective, digital storytelling could also be utilized by learners as an opportunity to apply the knowledge that they have to their own learning process, which addresses learning in different forms, such as auditory, kinesthetic, and visual (Flottemesch, 2013).

With the help of digital technology, digital stories that provide learners with background information can be uploaded to various websites, allowing them to access them whenever needed and desired, even outside the classroom (Choi, 2012). Yang and Wu (2012) address the idea that thanks to the integration of developments in technology, digital storytelling has turned out to be an up-and-coming technology-supported approach to assist learners in improving their learning process, acquiring the subject matter, enhancing critical thinking skills, fostering motivation and literacy level regarding information. It is suggested that the construction of digital short stories helps learners control the language learning process, encourages them to develop confidence in language learning, highlights the importance of task value, and improves their language learning motivation level.

2.5. Previous Studies on Digital Storytelling

Several research studies have been conducted in search of the effects of digital storytelling. Yang and Wu (2012) sought to investigate whether digital storytelling (DST) affected senior students' academic achievement, critical thinking style, and motivation levels when learning English as a foreign language. The study found that DST positively affected participants' understanding of the course material and their eagerness to explore and think critically—two skills that are extremely important in preparing students for the rapidly evolving 21st century. Condy et al. (2012) examined the effects of using digital storytelling to reflect on pre-service student teachers' experiences with the concept of diversity in their classrooms, and the results indicated that digital storytelling gave students access to new media resources that allowed them to have a wide range of rich sources that they could utilize while learning languages. Yoon (2013) conducted a study to examine how digital storytelling affected the attitudes and views of Korean English Language Learning students in the study of the English language in an after-school English classroom. The study found that DST had a favorable effect. The suggestions are also in line with the findings of a research study that was conducted by Mello (2001), who aimed to investigate the impact of storytelling on the language learning process and concluded that learners regarded it as a powerful tool to improve their L2 language skills.

With reference to the connection between digital storytelling and motivation, Adara and Haqiyyah (2020) employed a quasi-experimental approach to investigate how digital storytelling impacted the motivation of a group of Indonesian EFL students. According to the findings, the experimental group was marginally more motivated than the control group. The respondents also thought that digital storytelling helped them become more creative and proficient in English. In addition, following treatment, students in the experimental class outperformed those in the control group on an English test. Similarly, Alemi et al. (2022) used a mixed-method approach to examine how DST affected young EFL learners' writing abilities and motivation. The analysis revealed that using DST enhanced the motivation and attitude of young EFL learners toward writing. According to Roy's (2024) investigation into the influence of digital storytelling

on motivation in middle school English classes, using digital storytelling techniques (DST) improved students' motivation, engagement, and comprehension of the English language more effectively than conventional teaching methods.

3. Method

3.1. Significance of the Study

Considering all these studies, it is proposed that the creation of digital stories has been examined in terms of its impact on learners' performance or second/foreign language acquisition skills. Therefore, several studies have been conducted for various reasons and in different contexts. While there are studies on how DST affects learning outcomes like language literacy and speaking abilities, far fewer studies examine how digital storytelling affects student motivation and satisfaction (Hava, 2021), and few studies concentrate on L2 learning (Roy, 2024). In this sense, the current study sheds light on the literature regarding the creation of digital short stories that explore the motivation of young adults to learn English in a different setting. Moreover, considering the variables, this study will contribute to the understanding of the extent to which learners' L2 motivation levels vary in terms of gender, frequency of computer use, frequency of Internet use for learning English, and perceived computer self-efficacy in relation to the creation of digital stories.

Unlike most studies in the field that have been carried out to analyze the effects of participants' digital stories through descriptive analysis and classroom observation (Girmen et al., 2019; Munajah et al., 2023), this quasi-experimental research study is believed to be beneficial to researchers because it reveals online practices regarding the influence of digital storytelling on students' motivation level for language learning through both quantitative and qualitative research methods. By offering particular examples from students' digital storytelling projects and tutorials on how to utilize a digital program to generate digital tales, the current study is particularly significant in terms of assisting teachers in utilizing the structure of digital storytelling.

This study's primary goal is to find out how the creation of digital storytelling affects the motivation of students enrolled in both optional and compulsory preparatory classes at a state university in Türkiye. Analyzing whether factors like gender, computer use frequency, computer self-efficacy beliefs, and the frequency of using the internet to learn English influence students' motivation level for language acquisition addresses the study's other goals. Gender has been considered a variable in digital storytelling studies. Despite the idea that technology is a male-dominated field, digital storytelling, made possible by information and communication technologies, is a powerful tool for empowering marginalized women. The chance to share their personal stories empowers women because they realize that they are not alone in their emotions (Shishko, 2022). Furthermore, the frequency of computer use and computer self-efficacy beliefs regarding digital storytelling were also discussed in previous literature (Giannakou & Klonari, 2019; Okumus, 2020). In this regard, the research questions of the present study are as follows:

1. What is the effect of digital storytelling on EFL learners' L2 motivation levels?

2. Do EFL learners' perceptions of digital storytelling change by their gender?

3. Do EFL learners' perceptions of digital storytelling change by the frequency of computer use on their L2 motivation level?

4. Do EFL learners' perceptions of digital storytelling change by the frequency of computer use to learn English on their L2 motivation level?

5. Do EFL learners' perceptions of digital storytelling change by their computer self-efficacy levels?

6. What are EFL learners' views of digital storytelling on their L2 motivation levels?

3.2. Design of the Study

This study employed a mixed-methods research design, defined as a class of research that combines both quantitative and qualitative research methods, techniques, approaches, and concepts within a single study (Johnson & Onwuegbuzie, 2004). Mixed methods studies, which are regarded as the third primary research technique or paradigm, involve the collection or analysis of both qualitative and quantitative data using one or more research process strategies (Johnson et al., 2007). Researchers claim that using a mixed methods study design enables them to broaden the area of their investigations and improve their analytical capabilities (Sandelowski, 2000). Since the data in this study are primarily analyzed using quantitative data from two questionnaires and are supported by qualitative methods from a semi-structured interview, it was based on the quantitative dominant mixed method research design. It is also suggested that supporting the results of a quantitative analysis with qualitative findings would enhance the validity and reliability of the study.

One of the quasi-experimental research designs, known as "the nonequivalent control (comparison) groups design," was used to perform the current study. The benefit of using a nonequivalent control group design is the chance to gather data from participants' pre-test scores, which allows researchers to ascertain whether the experimental and control groups are homogeneous or similar at the start of the study. Additionally, the researcher can compare participants' post-test mean scores in addition to their pre-test mean scores using this quasi-experimental research design (Nunan & Bailey, 2009).

The theoretical assumptions of the research design reveal that the participants are not chosen at random. However, the groups were assessed using the pre-test results to determine whether they were homogeneous or equal. The results showed that both groups were distributed equally based on their L2 motivation level as measured by the English Language Learning Motivation Questionnaire. After ensuring that all students were equally motivated to learn English, the experimental group participated in a two-month study where they received instruction on creating digital stories using Photo Story 3, which is a multimedia application designed for Windows users that offers several features, including the ability to create filmstrips by combining many images and the option to include a piece of soundtrack for digital projects. Although it lacks all the media features of CDs-level for digital tale projects, its readily accessible function could serve as an introduction that allows users to create new videos, images, sound, and voices with simple outcomes (Alexander, 2011). On the other hand, the control group received instruction using the conventional pen-and-paper method.

3.3. Data Collection Instruments

The "English Language Learning Motivation Questionnaire" and the "Motivation Level of Making Digital Short Stories Questionnaire" were the two questionnaires used in this study to collect data as a pre-test and a post-test. The items on these questionnaires were directly transferred or adapted from Gardner's (2004) Attitude/Motivation Test Battery (AMTB), which the researchers developed and is frequently used in motivation research studies. The "English Language Learning Motivation Questionnaire" consisted of 24 items, including two negative (items 14 and 21) and 22 positive statements. Regarding closed items, the questionnaires were designed using a five-point Likert scale ranging from strongly disagree to strongly agree. In terms of the survey's reliability, Cronbach's Alpha was calculated, yielding a value of .772.

The second questionnaire, the Motivation Level of Making Digital Short Stories Questionnaire, likewise has 24 items adapted by the researchers from Gardner's AMTB using a 5-point Likert scale to examine the extent to which participants' perceptions of how digital short stories improved their language skills. The Cronbach’s Alpha value was determined to examine the reliability of the data collection tool, which was found to be .846.

The researchers created a semi-structured face-to-face interview as an additional data collection instrument, which functioned as a qualitative approach to determine how students felt about the assertions regarding the influence of digital storytelling construction. Ten questions created by the researchers specifically for the study were asked during the interview. It was carried out to examine students' answers and viewpoints on the open-ended statements about the process of creating digital stories. Participants’ responses were

entered into a computer and subjected to content analysis. The participants were also asked whether there were any questions that were difficult to understand in terms of the purpose. Therefore, the transcriptions were done to ensure that there was no ambiguity in the questions. Regarding the trustworthiness criteria for qualitative data, prolonged engagement, which refers to the researcher's engagement with the study environment and the development of a relationship with participants in order to ascertain their perceptions (Guba & Lincoln, 1989 as cited in Lynch, 1996), was ensured. Furthermore, the researchers ensured persistent observation by managing the treatment procedure and conducting the research study.

The researchers also developed a Demographic Information Form to gather information about the participants' demographics, such as their gender, major, program types, perceived computer proficiency and motivation levels, frequency of computer use and internet use for English language learning, whether they had computer training, and whether they had previously written short stories.

3.4. Participants

Sixty-three prep school students enrolled in both optional and compulsory programs at a state university participated in the current study. They were divided into two groups: an experimental group with 33 participants and a control group with 30 learners. A demographic information form was conducted to reveal participants' demographic descriptions, and the results revealed that they share similar characteristics. It is indicated that one significant element that is thought to improve the study's dependability is the use of thorough descriptive analysis for the study's participants (Yıldırım & Şimşek, 2003). For this reason, to compare the experimental and control groups in terms of an indicator of their normal distribution, thorough descriptive analyses of the participants in both groups were carried out, and the results are revealed as follows:

Table 1.

Findings regarding participants' demographic features (in number)

Demographics	Experimental (N= 33)	Control (N = 30)
Gender		
Female	16	16
Male	17	14
Department		
Public Administration	6	9
Tourism	13	5
History	3	8
International Relations	10	8
Foreign Trade	1	
Prep School Types		
Optional	4	1
Compulsory	29	29
Access to the Internet		
Yes	26	20
No	7	10
Training for Computers		
Yes	8	11
No	25	19
Perceived Computer Proficiency Levels		
Low	10	5
Medium	16	18
High	7	7
Time for Computer Use a Day		
Less than 5 hours	11	10
5-8 hours	10	11
9 hours and over	12	9
The Frequency of Computer Usage to Learn English		
Never		3
Rarely	7	6

Sometimes	14	12
Often	9	7
Always	3	2
Story Perceptions		
Yes	24	17
No	9	13
Story Experiences		
Yes	7	3
No	26	27
Digital Storytelling Term		
Yes	4	9
No	29	21

As shown in Table 1, both the experimental and control group participants share similar demographic features, which validates the purposes of the study.

3.5. Data Analysis

The Statistical Package for Social Sciences (SPSS version 20.0) software was used to evaluate the data gathered through surveys. Firstly, the pre-test and post-test results were examined to see if they followed a normal distribution. The Shapiro-Wilk and Kolmogorov-Smirnov tests could be used to check if the data are normally distributed. When the data are greater than 29, the Kolmogorov-Smirnov test is performed; when the data are less than 29, the Shapiro-Wilk test is conducted (Kalaycı, 2006). In this context, the Kolmogorov-Smirnov test was employed to determine whether the groups were normally distributed, given that there were more than 29 individuals. Non-parametric tests such as the Mann-Whitney U and Wilcoxon signed-rank test were included in the analytical process because some of the data did not indicate a normal distribution.

In parametric studies, the Mann-Whitney U test is the nonparametric alternative of the t-test (Kalaycı, 2006). The t-test is used to determine if two groups differ statistically significantly when examining parametric or normally distributed data (Can, 2013). The significance value of two related scores is also examined using the Wilcoxon signed-rank test, which is the nonparametric alternative of the dependent sample t-test (Kalaycı, 2006). Analysis of variance (ANOVA), a parametric test that examines the effects of various types and combinations of factors on a variable's mean (Bewick et al., 2004), was also used to examine the data because some significance values for more than two groups were normally distributed. Regarding qualitative data, participants' responses were entered into a computer and subjected to content analysis in terms of determined codes, including learner motivation, increased engagement to the course, and usefulness for L2 learning.

3.6. Piloting Process

A pilot study was performed prior to the implementation of the main study to identify any issues or shortcomings with the treatment and data collection tools. In this sense, the pilot study allowed the researchers to adjust any aspect of the treatment or data collection tools for the objectives of the study. Three field experts' opinions were taken to ensure the reliability and validity of the data collection tools. The piloting process was also conducted to find out if the participants had any issues using the application or understanding the semi-structured interview questions. Additionally, the researchers were able to test the validity and reliability of the data-gathering tools with the aid of the pilot study. It also allowed the researchers to plan the entire study in accordance with the research goals.

32 voluntary students enrolled in optional and compulsory preparatory classes participated in the two-week pilot study. Demographic information regarding participants' gender revealed that 17 were female and 15 were male. The students were from various departments, taking English language courses for one year, which was considered suitable for the purposes of the study.

To examine how students perceive the influence of creating digital short stories on their motivation for learning English, two questionnaires were used: the English Language Learning Motivation Questionnaire and the Motivation Level of Making Digital Short Stories Questionnaire. Additionally, a semi-structured

interview was conducted to examine the findings. A Demographic Information Form was conducted, and students were asked to provide personal information in the first section, including their gender, age, department, and program types. They also had to indicate whether they had a computer at home with internet access, had previously completed a computer training program, had heard of or created the term "digital storytelling," and which option best suited their level of computer proficiency and how often they used the internet to learn English.

The following are the proposed statements that were revised in light of the information gathered from the pilot study:

About how much time do you spend a day using computers?

The question was initially open-ended, but because the responses ranged widely and were hard to evaluate, it was divided into three categories: 0-4, 5-8, and 9+ hours a day.

English Prep School Program Type Level: Elementary Pre-Intermediate

The item that would no longer be a variance was removed from the questionnaire because the students were elementary English learners who would become pre-intermediate learners during the study process.

Six students in the pilot study were interviewed to meet the validity and reliability requirements of the instrument. Their answers to the questionnaires were then recorded and entered into a computer to test the instrument for potential issues or ensure that the questions were clear.

Participants' answers were recorded and subjected to content analysis. It was revealed that there were no unclear or irrelevant questions. Therefore, to gather qualitative data, the semi-structured interview was also considered reliable and valid.

3.7. Data Collection Procedures

Following the formal procedures, the participants were given an informed consent form, briefed on the study's objectives, and given a pre-test called the English Language Learning Motivation Questionnaire. Owing to the availability of internet connectivity, the training on how to use the program to create students' digital stories was conducted in computer laboratories. During the first week, the participants were given a tutorial to introduce and explain how to use the program called Photo Story 3, which they would use to design their digital stories.

A story called "Christmas Presents" by Jennifer Bassett, which was part of Bookworms Club Reading Circles, was chosen and given to the participants after the tutorial to assist students in visualizing the system in a digital narrative project. When choosing the short story, factors that are generally acknowledged to be extremely important were learners' age, L2 language competency, and prior understanding of the subject (Khatib et al., 2011). Students were given instructions on how to develop digital storytelling after the lesson, and they finished a number of steps. First, students were encouraged to come up with a digital narrative of their own. They were then given an outline over email to help them organize their thoughts before they could construct the story's characters, time, setting, problem, and solution. When the outlines were prepared, they were instructed to return them to the researcher for confirmation. The next week, students used the application to build their digital stories by transferring text and images from their storyboards. Storyboards are introduced to students during the digital story-building process to assist them in efficiently organizing their stories and planning the use of specific digital storytelling parameters, including time duration, image, audio, and video transitions, as well as special effects (Chung, 2006). To put it another way, it acts as a comprehensive plan that allows students to create an effective blueprint for their digital stories (Choi, 2012). This is because the use of storyboards makes it easier to narrate events that will be used in the digital storytelling project in a logical order, as the writer may have the opportunity to make multiple changes to the draft before performing it in the event of a gap or break in the story (Sylvester & Greenidge, 2009). As the next step, the students chose the music and sound design as well as a number of unique effects for their narration after the transfer. The participants told their stories to their friends once they were finished. Six individuals were questioned after the treatment, and their answers were

recorded before being uploaded to a computer for content analysis. The control group was also instructed to locate or create images for their pen-and-paper narrative. After that, they were given storyboards to utilize or upload their own images and construct the words for the narration. In addition to receiving feedback, the participants submitted their storyboards to the researcher. Both groups were instructed to create an ending and continue their stories during the post-stage activity. The control group members read their stories to their friends after writing them down on a piece of paper.

The rationale behind the use of various activities in the groups was to examine whether the creation of digital storytelling affected the degree of motivation they had for learning English in relation to the experimental group's treatment. The same questionnaires were applied as post-tests, and the experimental group's members were also asked to share their thoughts during the semi-structured interview. The study procedure was also revealed in Table 2 as follows:

Table 2.

Study Procedure

	PROCEDURES	
	Experimental Group	Control Group
Step 1	Pre-test: Questionnaire 1: English Language Learning Motivation Questionnaire Questionnaire 2: Motivation Level of Making Digital Short Stories Questionnaire	Pre-test: Questionnaire 1: English Language Learning Motivation Questionnaire
Step 2	Treatment: Construction of Digital Stories through *Photo Story 3* **Tutorial* * *A digital story sample by the researchers* **Storyboard creation by the students* **Feedback by the researchers*	No Treatment: Traditional teaching approach as pen-paper
Step 3	Post-test: Questionnaire 1: English Language Learning Motivation Questionnaire Questionnaire 2: Motivation Level of Making Digital Short Stories Questionnaire	Post-Test: Questionnaire 1: English Language Learning Motivation Questionnaire

As shown in the table, while the experimental group received treatment, including the construction of digital short stories via a multimedia program, Photo Story 3, the control group was instructed through the traditional pen-and-paper method.

4. Findings

4.1. Findings Regarding Research Question 1

In search of the 1st research question, which examined the effect of digital storytelling on EFL learners' L2 motivation levels, a Test of Normality was performed first before running any analysis. The Kolmogorov-Smirnov test was used because the data in each group comprised more than 29. The findings showed that

the experimental groups' pre-test scores (p=.04, skewness=-1.51, kurtosis=2.15) and control groups' pre-test scores (p=.00, skewness=-1.07, kurtosis=.17) were not normally distributed. Similarly, the experimental groups' post-test scores (p=.02, skewness=1.59, kurtosis=3.73) and control groups' post-test scores (p=.04, skewness=-.59, kurtosis=-.74) were not normally distributed. Therefore, the Mann-Whitney U test, one of the non-parametric tests, was used to examine each type of data, and the following were the results:

Table 3.

Mann-Whitney U Test Results of the Pre-test and Post-test Scores of Groups

Group	N	Mean	Mean Rank	Sum of Ranks	M-Whitney U	p
Experimental pre-test	33	3.50	35.08	1157.50	393.500	.162
Control pre-test	30	3.35	28.62	858.50		
Experimental post-test	33	3.97	47.00	1551.00	.000	.000
Control post-test	30	3.16	15.50	465.00		

As shown in Table 3, the results reveal that the experimental group has a mean score of 3.50, and the control group has a mean score of 3.35. This suggests that the mean scores are comparable. On the other hand, considering the significance value, the Mann-Whitney U test revealed a statistically significant difference between the experimental and control groups in terms of their L2 motivation level, as indicated by post-test scores ($U = .000$, $p < 0.05$).

A test of Normality was run to compare the pre-test and post-test scores of the experimental group regarding their L2 motivation level, and the results indicated not a normal distribution ($p<0.05$). Therefore, the Wilcoxon signed-rank test was performed, and the findings were revealed as follows:

Table 4.

Wilcoxon Signed-Rank Test Results of the Experimental Groups' Pre-Test and Post-Test Scores

	N	Mean Rank	Sum of Ranks	z	p
Negative Ranks	0^a	.00	.00	-5.015^b	.000
Positive Ranks	33^b	17.00	561.00		
Ties	0^c				
Total	33				

*Based on negative ranks, $p<0.05$

A statistically significant difference between the experimental group's pre-test mean (M= 3.50, SD=.27) and post-test mean (M= 3.97, SD=.16) scores is revealed by the analysis results and accounting for the significance value (p=.000). Additionally, the results, which were presented through rank scores, showed that every participant's post-test scores showed a positive degree of L2 motivation.

Normality Test findings ($p < 0.05$) revealed that the control group's pre-test and post-test scores, based on L2 motivation level, were not normally distributed. For this reason, the Wilcoxon signed rank test, one of the non-parametric tests related to paired samples, was performed, and the findings are as follows:

Table 5.

Wilcoxon Signed-Rank Test Results of the Control Groups' Pre- and Post-Test Scores

	N	Mean Rank	Sum of Ranks	z	p
Negative Ranks	23^a	17.13	394.00	-3.329^b	.001
Positive Ranks	7^b	10.14	71.00		
Ties	0^c				
Total	30				

*Based on positive ranks, $p<0.05$

Table 5 indicates that the control group's pretest and post-test scores differed statistically significantly (p=.001). In addition, it is believed that 23 of all participants had lower post-test mean scores (M=3.16, SD=.30) than pre-test mean scores (M=3.35, SD=.39) based on an analysis of the positive ranks of the statistics. Further evidence suggests that the control group's post-test mean scores decreased.

4.2. Findings Regarding Research Question 2

Since the number based on participant gender types is less than 30, the data were examined using the Shapiro-Wilk Statistic table, which showed a significant value of p<0.05. Thus, the Mann-Whitney test was used to analyze whether there was a statistically significant difference between the experimental group's pre-test and post-test scores of the male and female students. The results are indicated as follows:

Table 6.

Mann-Whitney U-test Results of the Experimental Group Based on Gender

Group	N	Mean Rank	Sum of Ranks	M-Whitney U	p
Male pre-test	17	17.47	297.00	128.000	.772
Female pre-test	16	16.50	264.00		
Male post-test	17	18.38	312.50	112.500	.393
Female post-test	16	15.53	248.50		

As a result of the findings, it is evident that there is no statistically significant difference between the mean pre-test scores of male (M=3.52) and female (M=3.48) participants (p > 0.05). Likewise, according to the results shown in Table 6, there is no statistically significant difference between the experimental group's perceptions of male and female learners (p > 0.05) in their post-test scores. In other words, it is shown that participants' perceptions are not statistically impacted by their gender.

The test of Normality results for the control group revealed that while the pre-test mean scores of male and female learners are not normally distributed (p < 0.05), the post-test mean scores of both groups are (p > 0.05). Therefore, an Independent Sample T-test was conducted to examine perceptions of the control group based on post-test mean scores, while the Mann-Whitney U test was employed to determine whether there was a statistically significant difference between the pre-test scores of male and female learners.

Table 7.

Mann-Whitney U-Test Results of the Pre-Test Scores of the Control Group Regarding Gender

Gender	n	Mean Rank	Sum of Ranks	M-Whitney U	p
Male	14	15.64	219.00	110.000	.934
Female	16	15.38	246.00		

p>0.05

According to the analysis in Table 7, the pre-test mean scores of the control group's male (M=3.42) and female (M=3.29) learners regarding their opinions of the usage of digital storytelling do not differ statistically significantly (p>0.05).

Table 8.

Independent Sample T-test Results of the Post-test Scores of the Control Group Regarding Gender

Group	N	X	S	SD	T	P
Male	14	3.1994	.29516	28	.605	.550
Female	16	3.1302	.32663			

p>0.05

Using the t-test to analyze the results, it was discovered that the statistically significant level is p>.05. Therefore, the post-test results of male and female students do not differ statistically significantly. It could be concluded that participants' views are not statistically significantly impacted by their gender based on the mean scores of male (M=3.19) and female (M=3.13) learners.

4.3. Findings Regarding Research Question 3

Since some of the statistically significant difference levels show mean values of p>0.05, one of the non-parametric tests, Kruskal Wallis, was used to determine whether there was a statistically significant difference between the amount of time spent using a computer and the level of motivation on the pre-test and post-test scores of the experimental group participants. The results are shown in Table 9 as follows:

Table 9.

Kruskal-Wallis Test Results of the Experimental Group's Pre-test and Post-test Scores Regarding the Frequency of Computer Use

Groups (pre-test)	N	Mean Rank	df	X^2	p
Less than 5 hours a day	11	19.05	2	1.593	.451
5-8 a day	10	18.05			
9 hours and over a day	12	14.25			
Groups (post-test)	N	Mean Rank	df	X^2	p
Less than 5 hours a day	11	15.55	2	1.918	.383
5-8 a day	10	14.95			
9 hours and over a day	12	20.04			

p>0.05

As shown in the table, the significance value (p=.451) revealed that there was no significant difference regarding their pre-test scores (p<0.05). Another Kruskal-Wallis test was also used to determine whether the frequency of computer use had a statistically significant impact on the experimental group's post-test mean scores. It appears from the significance value (p=0.383) that there was no statistically significant difference between the experimental group's post-test mean scores based on computer use frequency (p>0.05).

To find out if the control group participants' mean scores were distributed normally, the Test of Normality was performed. Kruskal-Wallis was employed to examine if the frequency of computer use had a statistically significant impact on participants' perceptions based on pre-test scores, because some of the significance values suggested p<0.05, a non-parametric test. To determine if there was a statistically significant difference in the mean scores of the post-test based on the learners' frequency of computer use, a parametric test and one-way ANOVA were also conducted, based on the results showing p>0.05. The following are the results of the Kruskal-Wallis analysis of the pre-test scores:

Table 10.

Kruskal-Wallis Test Results of the Control Group's Pre-Test Scores Regarding the Frequency of Computer Use

Groups	N	Mean	df	X^2	p
Less than 5 hours a day	10	14.20	2	.626	.731
5-8 a day	11	15.18			
9 hours and over a day	9	17.33			
Total	30				

p>0.05

It was found that there was no statistically significant difference in the control group's pre-test mean scores with respect to the frequency of computer use, as indicated by the significance value (p = .731). Table 11 revealed the findings of a one-way ANOVA depending on the frequency of computer use in relation to the control group's post-test scores as follows:

Table 11.

ANOVA Test Results of the Control Group's Post-Test Scores Regarding the Frequency of Computer Use

Between Groups	Sum of Squares	df	Mean Square	f	Sig.
Between Groups	.065	2	.033	1.311	.285
Within Groups	.744	30	.025		
Total	.809	32			

p>0.05

It was revealed that there was no statistically significant difference in the post-test scores of the control group regarding computer use (p<0.05), which shows the significance value as (p=.285). Thus, it can be said that like the experimental group, the L2 motivation level of the control group participants is unaffected by how frequently they use computers.

4.4. Findings Regarding Research Question 4

Before analysing the effects of computer use frequency on English language learning based on the experimental group's pre-test and post-test scores, a normality test was conducted. Due to the results, some of which show p < 0.05 significance levels, a non-parametric test called the Kruskal-Wallis test was used to examine how participants' L2 motivation levels were affected by using computers to learn English. The results are presented in Table 12. However, one-way ANOVA was also utilized to examine the difference because some of the significance values on the post-test mean scores showed p>0.05. The results are shown in Table 13.

Table 12.

Kruskal-Wallis Test Results of the Experimental Group's Pre-test Scores Regarding Computer Use to Learn English

Groups	N	Mean Rank	df	X^2	p
Rarely	7	11.14	3	4.069	.254
Sometimes	14	17.79			
Often	9	18.28			
Always	3	23.17			
Total	33				

p>0.05

As shown in Table 12, it was revealed that there was no statistically significant difference between the participants' L2 motivation level and how frequently they used computers to learn English (p>0.05). The following are the results of one-way ANOVA of the experimental group's post-test scores regarding the frequency of computer use to learn English:

Table 13.

ANOVA Test Results of the Experimental Group's Post-Test Scores Regarding Computer Use to Learn English

Sum of Squares		df	Mean Square	F	Sig.
Between Groups	.193	3	.064	3.032	.045
Within Groups	.616	29	.021		
Total	.809	32			

p<0.05

There was a statistically significant difference between the variables, as indicated by the significance level of p<0.05. To identify the indicated differences across variables, multiple comparisons were also made, as shown below:

Table 14.

Multiple Comparison Results Regarding the Difference Between Groups

(I) learning	(J) learning	Mean Difference (I-J)	Sig.
	sometimes	-.08631	.583
Rarely	often	-.07011	.776
	always	-.30159*	.027*
	rarely	.08631	.583
Sometimes	often	.01620	.994
	always	-.21528	.116
	rarely	.07011	.776
Often	sometimes	-.01620	.994
	always	-.23148	.103
	rarely	.30159*	.027*
Always	sometimes	.21528	.116
	often	.23148	.103

p*<0.05

According to an analysis of Table 14, it was revealed that the frequency levels marked as "rarely" and "always" differed statistically significantly. For the ANOVA analysis, eta squared effect size (η^2) was calculated and it was determined that computer use for learning English had a large effect on the perceptions of the experimental group regarding digital storytelling according to the post-test scores (η^2=.24). In other words, it can be said that the frequency of computer use is a large effective variable in the perceptions of EFL students regarding digital storytelling.

The Kruskal-Wallis test was used to determine if there was a statistically significant difference between the frequency of computer use to learn English and the L2 motivation level of the control group based on pre-test results, since some of the significance values showed p<0.05. However, one-way ANOVA was also used to examine the results based on post-test mean scores, as several of the significance levels showed p > 0.05.

Table 15.

Kruskal-Wallis Test Results of the Control Group's Pre-test Scores Regarding Computer Use to Learn English

Groups	N	Mean	df	X^2	p
Never	3	14.67	4	.872	.929
Rarely	6	13.42			
Sometimes	12	15.33			
Often	7	16.93			
Always	2	19.00			
Total	30				

p>0.05

Table 15 analysis revealed no statistically significant difference between the control group's motivation level on the pre-test scores and the frequency of computer use in learning English.

Regarding the post-test scores, one-way ANOVA results were also shown as follows:

Table 16.

ANOVA Test Results of the Control Group's Post-Test Scores Regarding Computer Use to Learn English

Sum of Squares		df	Mean Square	F	Sig.
Between Groups	.063	4	.016	.145	.963
Within Groups	2.706	25	.108		
Total	2.769	29			

p>0.05

According to the results, no statistically significant difference existed between the control group's motivation level on the post-test scores and how frequently they used computers to learn English.

4.5. Findings Regarding Research Question 5

The Kruskal-Wallis test was employed to examine experimental group participants' judgments of their own efficacy based on some significance values that showed $p<0.05$. Additionally, one-way ANOVA was used to examine the influence of the group's beliefs on computer self-efficacy based on their post-test scores, as several of the significance values showed $p > 0.05$.

Table 17.

Kruskal-Wallis Test Results of the Experimental Group Regarding Computer Self-Efficacy Perceptions

Groups	N	Mean	df	X^2	p
Low	10	14.35	2	1.132	.568
Medium	16	18.44			
High	7	17.50			
Total	33				

p>0.05

Based on the pre-test results, the significance mean value showed that there was no statistically significant difference between the participants' opinions of their computer self-efficacy and their level of L2 motivation. The significant value of the experimental group's opinions of their computer self-efficacy based on their post-test scores was also examined using a one-way ANOVA.

Table 18.

ANOVA Test Results of the Experimental Group Regarding Computer Self-Efficacy Perceptions

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.066	2	.033	1.335	.278
Within Groups	.743	30	.025		
Total	.809	32			

p>0.05

Based on the results, it was concluded that there was no statistically significant difference between the experimental group's post-test scores ($p>0.05$) and their views of computer self-efficacy and their level of motivation for learning English.

Table 19 presents the results of the Kruskal-Wallis test regarding the control group's pre-test scores, which was conducted because some of the significance values showed $p<0.05$. However, because certain significance values also showed $p>0.05$ on their post-test scores, a one-way ANOVA was also performed, and the results are also shown in Table 20.

Table 19.

Kruskal-Wallis Test Results of the Control Group's Pre-Test Scores Regarding Computer Self-Efficacy Perceptions

Group	N	Mean	df	X^2	p
Low	5	16.90	2	.557	.757
Medium	18	15.92			
High	7	13.43			
Total	30				

p>0.05

Based on the pre-test results, the results indicated that the control group's L2 motivation level was not statistically impacted by computer self-efficacy beliefs ($p>0.05$). Additionally, Table 20 revealed one-way ANOVA results as follows:

Table 20.

ANOVA Test Results of the Control Group's Post-Test Scores Regarding Computer Self-Efficacy Perceptions

Sum of Squares		df	Mean Square	F	Sig.
Between Groups	.041	2	.021	.204	.816
Within Groups	2.727	27	.101		
Total	2.769	29			

p>0.05

The results showed that there was no statistically significant difference between the control group's post-test scores for L2 motivation and their views of computer self-efficacy.

4.6. Findings Regarding Research Question 6

Qualitative Findings on Participants' L2 Motivation

Concerning the 1st research question and the positive impact of DST on learners' motivation levels based on quantitative data analysis, similar findings about the participants' L2 motivation levels were also found in the analysis of the data gathered from their responses in the semi-structured face-to-face interviews. It was determined from the interviews that members of the experimental group had seen a rise and improvement in their motivation level for learning English, which is indicated as follows:

Q7. Are there any changes in your English language learning motivation after the construction of your digital short story?

"At first, I was nervous, but after the study, my opinions certainly changed in a positive way. It helped me improve my grammar skills, and I learned a lot of vocabulary. It helped me improve my motivation level due to visual elements, and it was so nice, and presenting it to my friends enabled me to gain experience. It was a start for me, and I want to continue to create such projects later." (Interviewee 13)

"Absolutely. If I am required to create such a story again, I would really like to do it. All the functions of the project were nice. Creating something on your own makes you feel better. It improves one's motivation level when something happens that was not thought to come true." (Interviewee 11)

"Before I created this story, my motivation level towards learning English had not been high, but after reading the story, I recognised that I had the ability to do that. I suppose I will continue to write stories. It affected me in a positive way." (Interviewee 8)

"Yes. Writing is so important to enhance English language learning, and it has become easier and more enjoyable through this project. It increased my motivation level to learn English because it made it easier to determine the correct tense and use it in a context appropriately. Firstly, I thought that I would not be able to do it; but after you manage to do something, you forget about the previous ideas on that." (Interviewee 3)

The results are likewise consistent with the experimental group participants' answers to the interview questions following the creation of digital short stories, which are shown as follows:

"It was so beneficial for me. I could express myself better. I tried to be better at creating sentences. It improved my English language learning skills. I make a contrast between my previous English proficiency level and that of mine now, and it has improved a lot." (Interviewee 8)

"I recognized that there was a difference between the first moment I started that project and the last one that I created it because a story as good or bad was created while there was nothing for which I could say it is my own work now." (Interviewee 10)

The results are also consistent with the answers to question 4, which asks, "How has the study affected your feelings about creating digital short stories for English language learners?" that were acquired through the interview in the manner described below:

"In my opinion, every one of the learners of prep classes should create such a digital story because I enjoyed it a lot in terms of the selection of photos/pictures. Integrating special effects and music into our stories was much more enjoyable. It was not just an ordinary PowerPoint presentation. I enjoyed doing digital story more thanks to the visual elements." (Interviewee 7)

Qualitative Findings Regarding Participants' Gender

The results regarding participants' gender are indicated as follows:

"My motivation level increased because it was so enjoyable. I also presented my digital story in front of my friends. We had a responsibility regarding the creation of a digital story project, and we did it. I created my story based on my dreams; in other words, it was a story of mine. It was so nice." (Interviewee 7: Female)

"After I created my digital story, I watched it. Then I made a presentation of my story to my friends. You and my friends also watched it, and all of you congratulated me on that, and it was so nice to hear. I was so happy because everybody liked it. We were in interaction because I was a presenter, and they were the audience, and in the end, both of us came together, and it was so nice, too." (Interviewee 3: Male)

Qualitative Findings Regarding Participants' Perceived Computer Self-Efficacy Perceptions

Participants' answers to the interview questions that addressed the notion that computer self-efficacy beliefs had no discernible effect on the participants' L2 motivation revealed similar results, which might be indicated as follows:

"At first, I had difficulty using the program. I had no computer. However, when I started to create the story, I did not have problems; I enjoyed it a lot, especially in terms of finding photos and music." (Interviewee 9)

"I had no problems regarding the use of the program. I just had difficulty finding good photos/pictures to import into my digital story." (Interviewee 5)

5. Discussion and Conclusion

The study aimed to investigate the effects of digital storytelling on EFL learners' L2 motivation level, and regarding the 1st research question, it was concluded that the treatment had a statistically significant difference in experimental group participants' post-test scores. The results are consistent with several studies, including Yang and Wu (2012), which employed a quasi-experimental design to investigate the impact of digital storytelling on the motivation levels of 110 senior high school students in the 10th grade to learn English. Based on the data collected from the participants' mean pre- and post-test scores, it was found that the experimental group performed better than the control group, with a statistically significant difference, particularly in terms of certain pedagogical traits like task value and learners' self-efficacy. Liu et al. (2018) investigated the effect of digital storytelling on students' learning motivation and performance in a formal educational setting, and it was discovered that the digital storytelling method improved students' language proficiency, especially in oral reading fluency and extrinsic motivation. Another study by Yoon (2013) examined the effects of digital storytelling on the attitudes and perceptions of thirty-two Korean ELL students in the fifth grade toward learning English in and out of school over the course of twelve weeks. The possible benefits of creating digital storytelling were found to have a positive effect on participants' perceptions and changes in their attitude toward learning English, according to the results based on mean scores of the post-test about learners' self-evaluation and instructors' lecture review reports and surveys. The results showed that using digital storytelling improved students' comprehension of the material, allowing them to participate more willingly and actively in class discussions and engagement. It was suggested that digital storytelling not only increases students' motivation and interest but also gives them confidence in learning English by involving them in the content of the story. It can be concluded that

the creation of digital storytelling has a beneficial effect on learners' motivation levels regarding learning English, based on the results and related research studies included in the literature, which show an increase in L2 motivation levels of learners through digital storytelling. The effect of digital storytelling was analyzed regarding the experimental group in terms of pre-test and post-test. As a result, participants' positive perceptions were also revealed. The results align with several studies published in the literature. One such study was conducted by Pop (2012), who aimed to determine whether using digital storytelling affected learners' motivation levels and language proficiency. Based on the experimental group's post-test results, it was found that students' interest in learning English had increased. As a result, both qualitative and quantitative data showed that the experimental group's post-test mean scores increased in comparison to their pre-test scores. This finding may be related to the notion that creating digital short stories improved the motivation level of the experimental group's participants to learn English. However, the analysis of the control group's L2 motivation level revealed a decrease in their post-test scores. The results are consistent with a different study by Verdugo and Belmonte (2007) that aimed to examine how digital storytelling affected the language proficiency of young Spanish speakers learning English. They found that the control group's post-test scores decreased in comparison to their pre-test mean scores. Yılmaz (2012) conducted a study to examine the effects of integrating short stories via computers. The results showed that the control group's motivation level for learning English significantly decreased, as indicated by the post-test mean scores. The results and research studies in the literature suggest that learners' L2 motivation level declines on the post-test following the conventional pen-and-paper storytelling method.

In terms of the second research question, aiming to investigate whether participants' perceptions of digital storytelling change by their gender, it was found that there was no statistically significant difference in both experimental and control group participants' post-test scores. The findings reveal similar results in the literature. The study by Tatum (2009) examined how digital storytelling affected students' understanding of information texts and found that students' gender types did not appear to have a statistically significant impact on their views. However, Bozdoğan (2012), who used Moviemaker to examine the stories written by ELT students in a digital format, concluded that only males generated five different kinds of stories based on shared traits that were deemed undesirable. Furthermore, the gender of the owner was mirrored in the characters employed in their writings; female students utilized female cartoon characters, while male students preferred male cartoon characters. Based on the results gathered from this study, as well as a number of previous relevant research investigations, it is possible to conclude that the creation of digital short tales has a beneficial impact on the L2 motivation level of both male and female learners. In other words, the gender types of participants do not significantly affect their level of motivation for learning English. These findings are consistent with several other research studies, one of which belongs to Normann (2011), who aimed to determine whether there was a statistically significant difference between male and female learners in terms of their learning potentials based on a digital storytelling project, found that gender differences did not have a statistically significant impact on participants' learning potentials.

The third research question investigated whether the frequency of computer use affects participants' perceptions of digital storytelling on their L2 motivation, and it was revealed that there did not appear to be a statistically significant difference. The results are in line with another study by Yılmaz (2012) that found no statistically significant difference between the two variables based on mean scores from the pre-test and post-test on the frequency of computer use and learners' L2 motivation level. Additionally, it is proposed that learners' L2 motivation level is not statistically affected by how frequently they use computers.

The fourth research question aimed to reveal whether the frequency of computer use to learn English affects participants' perceptions, and it was concluded that there were statistically significant differences between the users of 'always' and 'rarely'. The association between computer use and academic achievement has been the subject of numerous research papers in the literature. Bataineh and Hani (2011) suggest this example, showing that computer use positively correlates with students' academic ability in language learning. It is possible to conclude that using computers for L2 learning has a significant impact on learners' L2 motivation level based on the results, which show a statistically significant difference between the post-

test scores of those who use the internet infrequently and those who use it frequently to learn English when compared to their pre-test scores. However, there was no statistically significant difference in the post-test scores of the control group, in contrast to the results obtained from the experimental group's post-test mean scores regarding the use of computers to learn English. Therefore, it might be said that the treatment was beneficial in terms of using computers to raise their level of L2 motivation.

The fifth research question investigated participants' perceived computer proficiency levels and their perceptions of digital storytelling, and the results indicated that there were no statistically significant differences between the experimental and control group post-test scores. Contrary to the current findings, the literature does explore some disparities in computer use. According to Gordon (2011), who aimed to understand the experiences of three secondary teachers in relation to a digital storytelling project with their students, teachers' attitudes about computer use were a major factor in the incorporation of digital storytelling into their curricula. One teacher expressed dissatisfaction with incorporating computers into the curriculum because he did not consider himself a proficient computer user. Similarly, Spicer (2013) suggested that there were statistically significant improvements for the experimental group based on the post-test scores in another study that sought to examine the relationship between first-grade college students' digital storytelling creation projects and their self-efficacy beliefs in terms of media production skills. It is possible to reveal that participants' perceived beliefs about their computer self-efficacy did not significantly affect their level of L2 motivation based on the results of this study. Thus, it may be argued that participants with low, medium, or high computer proficiency levels had equivalent levels of L2 motivation. Moreover, it can be inferred that students can construct a digital short narrative without having to be highly proficient with computers.

With reference to the 6th research question, the findings of the semi-structured interviews likewise confirmed the rise in students' motivation levels. Additionally, the results of this study are consistent with several previous studies that have been published in the literature that focus on the usage of digital storytelling (Bozdoğan, 2012; Yang & Wu, 2012; Yoon, 2013). Most participants said digital storytelling helped them improve their speaking and writing abilities. They also mentioned that the project's entertaining features and visual elements increased their L2 motivation. These responses indicated a positive shift in the participants' motivation level for learning English, which is in line with research in the literature like Pop's (2012) study, which found that students were more interested in using digital storytelling. Furthermore, in another study, Okumus (2020) investigated perceptions and preferences of 8th-grade students in digital storytelling, and as a result of the participants' interview results, she revealed that they liked digital storytelling because it allowed them to create their own narrative and make choices about the plot, characters, and setting. Likewise, in the current study, learners specifically reported that they practiced their writing skills in terms of the construction of sentences that they found particularly challenging and that they learned a lot of new terminology. They also talked about how the satisfaction of creating a piece of content by themselves made them feel joyful because they thought they would do another one, which also increased their motivation. Considering all the data, it was determined that the creation of digital stories raised the experimental group's L2 motivation level in several ways based on the qualitative and quantitative data as a result of the treatment, while the control group, which received instruction using the conventional pen and paper method, saw a decline in post-test mean scores.

6. Implications

It is widely accepted that digital storytelling has many pedagogical implications for instructors. With the use of digital storytelling for educational purposes, teachers can make a difference in terms of recognizing and approving different learning styles and being aware of the digital realities of their age for their digital-native students. Teachers could also benefit from digital storytelling in order to assist learners in enhancing their knowledge and use of technology-based literacy skills by raising awareness regarding their opportunities and responsibilities as individuals for the use of digital technologies and copyright issues. Additionally, from an ethnographic perspective, digital storytelling also helps teachers gain insight by enabling them to have sympathetic connections with learners, their families, and the society that they are residents of (Roby, 2010).

It is suggested that to be able to promote and encourage learners to the active learning process, instructors are needed to design various materials to get learners involved in the learning process and attract their interest in order to motivate them as well (Chang, 2005). Since it has been shown that students are more motivated, excited, and involved in the digital storytelling process, Lowenthal (2009) contends that digital storytelling presents educators with a new and exciting opportunity to engage students like never before. Choi (2012) makes reference to digital storytelling by comparing it to traditional storytelling in that ESL/EFL instructors could be able to eliminate the limitations regarding the traditional ways of teaching and could also provide learners with background information for the subject matter in a more efficient and effective way thanks to the possibilities that digital storytelling approach presents by incorporating all kinds of learning elements to a single media material integrated with several media tools including images, pictures/photos, audio, text and sound that are not possible to benefit in terms of traditional ways of reading activities. Sylvester and Greenidge (2009) suggest that instructors could utilize digital storytelling to enhance the motivation level of struggling writers by allowing them to create their own stories equipped with multimedia tools and turn them into more competent writers. In this regard, since digital storytelling is an entertaining method of practicing language skills, it may be used in speaking, listening, grammar, vocabulary, and writing exercises (Okumus, 2020). Given these issues, teacher- and student-created digital stories can be utilized as useful teaching resources to enhance learning environments. This can be accomplished by offering teachers in-service training. The reason for this is that several elements, including having access to technology, proper user training, and continuous technical support, are necessary for digital storytelling to be successful (Kansoy & Çıbık, 2022).

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