

Improving EFL Students' Writing Skills through Digital Storytelling

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Abstract

With the outbreak of Covid-19, online education has gained more momentum, and language teachers have been encouraged to implement more innovative teaching practices to improve students' learning. This study attempts to unveil the effect of digital storytelling (DST) on improving EFL students' writing skills and to examine their perception of the use of this learning approach. The study sample consisted of 40 tenth-grade Iranian EFL students. They were divided into two groups and were taught EFL writing by using DST for 24 sessions. Data were collected through students' writing essays, interviews, and a questionnaire. The results indicated that there was a significant difference between the students' pretest and posttest writing scores, which confirmed the efficiency of DST in teaching EFL writing. In addition, the participants believed that DST could promote their linguistic competence, motivation, teamwork, creativity, self-confidence, and social skills.

Keywords: Digital storytelling, EFL students, writing skills, Online education, Students' perception

Introduction

The realm of language teaching has undergone a plethora of changes with the outbreak of the Covid-19 which forced educational systems to shift to online classes more than before. In addition, in the age of technology and communication advancement, language teaching has been facilitated by means of online applications, computer devices, and even social media. Therefore, it is vital to implement student-friendly approaches which stimulate a rich student-centered environment supported by technology and educational software.

Being in the era of technology, writing is one of the leading ways of communication, and thus it has been given much attention and importance in the field of language teaching. However,

despite its importance, writing is complex, challenging, and the most difficult language skill to learn (Alsamadani, 2010; Kurk & Atay, 2007). Expressing thoughts, feelings, emotions, and facts to support the key question in writing, and dealing with content, organization, vocabulary, language use, and mechanics such as spelling and punctuation are the factors that make EFL writing difficult for students. Likewise, there are some other problems caused by a large number of students in the process of teaching (Karatay, 2011). Therefore, there is an urge for proposing a way to overcome these flaws and add efficiency to classroom methodologies aided by technology (Ganaat Pisheh et al., 2020).

Continuing with the issue of novel practices for teaching/learning strategies and their effect on developing students' communication ability, digital storytelling (DST) is one of those practices which can make room for itself in this field. DST stimulates students to experience a more enjoyable way of learning while doing activities alone, in pairs, or in groups. DST is widely accepted to be effective in a variety of skills, namely, speaking, writing, critical thinking, and problem-solving (Jitpaisarnwattana, 2018). It benefits not only high proficient learners but also low proficient ones like K-12 learners in EFL contexts so that they can express their intended meaning by means of pictures and narration (Reinders, 2011).

Considering the importance of writing skills and the complexities involved in their teaching, more studies should be conducted to examine the effectiveness of using innovative approaches to teach writing especially to the K-12 learners in online classes considering the paucity of studies carried out with these learners. The review of the literature indicates that the majority of studies undertaken in this area have been conducted with tertiary-level students (Azis, 2020; Tanrikulu, 2020), whereas few studies have focused on K-12 learners (Girmen et. al., 2019). To the best of the researchers' knowledge, no studies could be found regarding the investigation of the effects of DST on K-12 students' writing in terms of content, vocabulary, organization, language use, and mechanics. Therefore, in order to fill the existing gap, the focus of this study is to investigate the effect of DST on improving EFL learners' writing, and to understand students' perception of DST, using online synchronous platforms. The following questions guide this study:

1. Does DST have significant effects on Iranian EFL learners' writing features, i.e. content, organization, vocabulary, language use, and mechanics?
2. What is the EFL learners' perception toward the implementation of DST in the class?

Literature review

Distance Learning

In the literature, there have been ever-changing definitions for distance learning or distance education (DE), yet with slight differences (Spector et al., 2008). One of the basic definitions of DE refers to the absence of both teachers and students in the same physical environment (Kaplan & Haenlein, 2016). Thereafter, the definitions and application of distance learning have evolved

as mentioned earlier. Gradually, computers have become involved in the definition of distance learning where they have been used to deliver education to learners while they can use their own printed materials and attend online classes simultaneously, or they can use audio-visual materials such as video clips, podcasts, tests, etc. instead.

Recent studies and research on DE show the tendency of changes in definitions toward new technological devices including computers and mobile phones that are available to learners (Moore et al., 2011). As changes are reported in the literature to define DE, it is fair to say even that distance learning pedagogies and activities have also evolved (Anderson & Dron, 2011). However, what remains constant is that DE has been used as an umbrella term for many names and sub-categories that have emerged (Keegan, 2013).

There is a controversial debate over whether the terms distance learning and distance education can be used interchangeably. As King et al. (2001) brought to view in their study, these terms cannot be used interchangeably since the terms are different. As they put it, the former is known more as ability, while the latter is recognized as an activity within the ability of distance learning. Despite the few differences in meaning, they all solve the problem of those who have limitations of being present in on-site classes at a specific time and place (Volery & Lord, 2000).

Digital storytelling

DST means to tell a story electronically (Reinders, 2011). In other words, students produce stories by mixing different types of multimedia, i.e., texts, pictures, videos, recorded audio narration, and music, while the multimedia do not necessarily need to be exclusively theirs, for example, they can use pictures and videos which can be freely downloaded. They can also produce a voice-over video based on the story script they had already written with added pictures using different colors to show the mood in their stories.

It has been shown in the literature that several studies seek the employment of specific educational frameworks informing DST and its effects (Robin, 2008). In line with constructivist theory, DST is an ideal practice for learners to construct their own learning (Green, 2013; Smeda et al., 2014). Considering Jean Piaget and Lev Vygotsky as pioneers in the realm of constructivism, the former believes students construct knowledge through their experience and the latter gives credence to constructing knowledge through collaboration and scaffolding for solving certain tasks. Given this, students apply this when they learn to accomplish a writing task. Green (2013) asserted that DST, in her study as “story structure”, helps its users with learning the target language repeatedly and intentionally, and she highlighted that such uses enriched students’ vocabulary learning, and developed their linguistic accuracy and fluency more effectively.

There are also other studies investigating the impact of DST on students’ language learning and other related aspects in EFL contexts. Regarding speaking skills, the studies of Abdolmanafi-Rokni and Qarajeh (2014) and Tahriri et al., (2015) yielded that DST could significantly improve students’ speaking skills compared to conventional methods of teaching speaking. Likewise,

Hwang et al. (2016) found that Taiwanese students taught English through the use of the DST method were able to achieve greater speaking skills compared to students taught with other more traditional methods.

A great body of recent research has documented the effect of DST on students' mastery of writing and related skills. Azis (2020) by drawing on the use of DST in collaborative teaching of writing reported that not only had it significantly improved students' writing, but it could enhance their English language skills development, engagement, motivation, and interpersonal relationships. Furthermore, in a study conducted by Tanrikulu (2020) on students' perception toward improving their writing using DST, it was unveiled that they had a positive attitude toward DST which had improved the structure of their texts.

Drawing on the aforementioned studies, there is an impetus for the deployment of DST in this study. First, although several studies investigated the effect of DST on writing, few of them examined the effect of DST on K-12 learners in EFL contexts. Besides, there is a scarcity of empirical research on scrutinizing the effect of DST on students' writing features, i.e., content, organization, vocabulary, language use, and mechanics. In addition, EFL students' ideas about using DST in EFL classrooms have not been well documented. Therefore, the present study tries to examine the effect of DST on improving students' writing, and investigate students' perception of DST implementation in the class.

Methodology

Participants

The participants in the study were initially 56 Iranian EFL students. All participants, who were selected through convenience sampling, were males aged 16 who enrolled in grade 10 at high school for gifted students where the students are selected based on a country-scale entry examination. Although English language is not one of those criteria involved in their entry examination, almost all students have acceptable English proficiency in Senior high school both due to the rigid language program at school and attending private institutes. Female students were not recruited considering the segregated educational system in Iran. It is noteworthy to mention that none of the participants had previously experienced DST before taking part in the study. After a placement test to assess their proficiency level in writing, 40 students whose test scores were within one standard deviation below or above the mean were selected as the homogeneous group of pre-intermediate EFL learners.

Instrumentation

Two sets of data, quantitative and qualitative, were collected by means of a designed questionnaire and interviews, as well as by administering pre-and post-tests.

Students' perception of the DST questionnaire

An attitude questionnaire was developed for this study by the authors. It consisted of 13 five-point Likert scale items measuring students' attitudes toward DST based on five distinct categories: language improvement, intrinsic motivation, collaborative task engagement, self-efficacy, and critical thinking. For content validity, the questionnaire was examined by 11 EFL experts whose degrees were M.A. in Applied Linguistics, and they had at least 7 years of experience in teaching English both at public schools and private institutes. Content validity ratio (CVR) and content validity index (CVI) were further measured which were reported to be 0.8 and 0.94, respectively. According to Almanasreh et al. (2019), the reported indices and the number of experts who examined the items available in this questionnaire yield the required criteria for its content validity. The reliability index of the questionnaire was further measured using Cronbach α which was reported to be 0.82.

Interviews

Individual semi-structured interviews were conducted online via two platforms: Shad, which is an instant messaging service developed by the Ministry of Education in Iran, and WhatsApp, which is both an instant messaging application and a voice-over-internet-protocol (VOIP) application. One week after taking students' posttest, they were informed of an interview about DST whose concept was fully explained to them and all the classroom procedure was based on this. Their response to the questions were collected in two ways, some of them were available for a VOIP call and the rest of them responded as instant text messages.

The three open-ended questions adopted from Hava (2019) which were asked in the interview sessions were the following:

1. What are your general opinions on digital storytelling?
2. What are your opinions on the use of digital storytelling in EFL education?
3. Do you think that the use of digital storytelling in EFL education is a good method?
Please give reasons for your answer

Pretest and posttest

In order to evaluate the effectiveness of the treatment which is explained in detail in the following section, a pretest, and posttest were administered. Two topics related to the same theme, in the case of our research was "travelling", were assigned to the students for each test. They had already been informed to include the following parts in their writings: thesis statement, at least two subtopics, specific supports, and a conclusion. As for the pretest, they were required to write on "why traveling alone is a great idea?", and as for the posttest, the topic was "The best way to travel is travel in a group led by a tour guide. To what extent do you agree or disagree?". The students' writings for the pretest and posttest were assessed by two English language instructors who had experience in teaching EFL writing and IELTS based on an analytical scoring profile that was

developed by Jacobs et al. (1981). The final grade of each learner was calculated by inter-rater reliability. The inter-raters' reliability for all features of writing was at least $p > 0.763$.

Data collection and procedure

The study was conducted during the Spring semester of the 2020-2021 school year when school classes were held online due to the Covid-19 outbreak. Two grade 10 classes where the DST principles, such as developing stories effectively and working with related software applications, could be applied by the students were chosen. The two classes, each with 20 students, were held separately but the same treatment was applied to both.

After taking the pretest, students were informed about DST and the procedure which they were expected to undergo during each session on a synchronous platform, namely Adobe Connect, provided by the school. The students were introduced to some enriched samples of DST both in text and video formats. Then, they were divided into five groups of four in each class because the class time did not allow us to give feedback on individuals' assignment so that the authors could guarantee every person would benefit from the feedback given to them. Thus, they were asked to write a story in a group with each member responsible for writing the story until it was well developed. Each group head was in charge of reporting the group member activities and in order to make sure all group members were involved, the instructor asked them to explain their reasons for developing ideas in each paragraph while reading and giving feedback.

In the next session, the groups presented their first drafts, which they had prepared, aided by video conference calls and Google Docs; they also received feedback on their writing and their errors were corrected. Their draft was screenshared each session and sentence by sentence both the teacher and their peers would give feedback regarding their word choice, punctuation, grammar, and cohesive devices. Then, one more time the whole class would read the draft to check the content and overall coherence of the text. For the next sessions, they were required to finish writing their story; during each session, they constantly received feedback on their drafts. Feedback was provided while students were present on the synchronous platform and their Google Docs screen was shared by the teacher so that all students could see and understand their feedback.

Once their final draft was ready, they were asked to prepare their story script before making videos and narrating their stories. In this phase, students were expected to assign a related picture or video to the corresponding part of the text in their story. Finally, they were asked to prepare their story video and narrate the story. In their stories, there were usually a narrator and three characters, so that all students in the group had the chance to narrate and record their own voice.

After applying the treatment, a posttest was given to the participants to check if there was any significant difference in learning essay writing by using DST. For data analyses, comparative analyses of the means of two dependent samples, the Wilcoxon test and one-sample *t*-test were used. Furthermore, the interviews were analyzed through thematic analysis. Students' responses

to the questions were analyzed, and repeated patterns of meaning (themes) were identified and reported.

Results

Descriptive statistics

The descriptive statistics of the students' writing scores in the pretest and posttest for all of the subscales of writing including content, organization, vocabulary, language use, and mechanics is presented in Table 1. As indicated in the table, the scores in the posttest for all subscales are higher than those in the pretest.

Table 1

Descriptive statistics of the variables in the pretest and posttest

Variable	Status	Mean	Std. Deviation	Min	Max	Skewness	Kurtosis	Skew Error	Kurtosis Error
Content	Pretest	16.94	4.09	11	28	1.15	0.93	0.37	0.73
	Posttest	22.50	5.54	14.50	30	0.12	-1.52	0.37	0.73
Organization	Pretest	14.67	2.57	10.50	18.75	0.13	-1.30	0.37	0.73
	Posttest	17.79	1.81	11.25	20	-1.44	2.98	0.37	0.73
Vocabulary	Pretest	7.98	1.15	7	11	1.51	1.67	0.37	0.73
	Posttest	10.91	3.35	7	19.50	0.93	0.22	0.37	0.73
Language Use	Pretest	17.66	3.53	6	23	-1.71	4.04	0.37	0.73
	Posttest	20.93	2.20	17	24.50	-0.10	-1.30	0.37	0.73
Mechanics	Pretest	3.22	0.63	1.50	4.25	-0.51	0.19	0.37	0.73
	Posttest	3.92	0.57	2.50	5	-0.35	0.03	0.37	0.73
Total	Pretest	60.48	7.77	40	70.25	-0.43	0.31	0.37	0.73
	Posttest	76.06	8.99	58	94.50	0.23	-0.61	0.37	0.73

Inter-raters' reliability

In Table 2, Cronbach's alpha coefficient is reported, which shows that the scores recorded by the first and second raters for the variables have acceptable reliability.

Table 2

Inter-raters' reliability for variables in the pretest and posttest

Variable	Status	Cronbach's Alpha Coefficient
Content	Pretest	0.901
	Posttest	0.9896
Organization	Pretest	0.989
	Posttest	0.993
Vocabulary	Pretest	0.988
	Posttest	0.979
Language Use	Pretest	0.969
	Posttest	0.934
Mechanics	Pretest	0.944
	Posttest	0.919
Total	Pretest	0.897
	Posttest	0.763

The Cronbach's alpha coefficients for all variables ($p > .05$) indicate that the scores of the first and second raters are highly reliable.

Inferential statistics*The effect of using DST in teaching EFL writing*

The first research question of this study tried to investigate the effects of DST on the EFL learners' writing features, i.e., content, organization, vocabulary, language use, and mechanics. In order to address this question, the assumptions for running a parametric test were first checked. As indicated in Table 3, the data for content, organization, and total variables are normal, and therefore, a *t*-test can be used to examine the level of differences. However, the assumption of normality was not met for other variables including language use, vocabulary, and mechanics, and therefore, the Wilcoxon test was used to analyze the differences.

Table 3

Kolmogorov-Smirnov test to check the normality of variables

Variable	Z	No.	Sig.
Content	0.122	40	0.13
Organization*	0.131	40	0.08
Vocabulary*	0.150	40	0.04
Language Use*	0.141	40	0.04
Mechanics	0.152	40	0.02
Total	0.122	40	0.13

As indicated in Table 4, Paired *t*-test shows that there is a significant difference between the mean scores of the pretest and post-test in the content, organization, and total score ($p < .05$). The scores of content and organization, and total in pretest are 16.94, 14.67, and 60.48, and the scores of these variables in posttest are 22.50, 17.79, and 76.06, respectively, showing a significant increase.

Table 4

Paired t-test examining the mean differences of variables

Variable	Mean Difference	Std. Deviation	Std. Error of Mean	t	Sig.
Content (Pretest – Posttest)	-5.56	4.44	0.70	-7.91	0.0001
Organization (Pretest – Posttest)	-3.11	3.16	0.50	-6.22	0.0001
Total (Pretest – Posttest)	-15.58	7.75	1.22	-12.70	0.0001

As the assumption of normality was not met for the three variables of vocabulary, language use, and mechanics, the Wilcoxon test was run. Table 5 shows the descriptive statistics for these variables.

Table 5

Descriptive statistics for vocabulary, language use, and mechanics variables

Variable	Status	No.	Mean Rank	Sum of Ranks
Vocabulary (Pretest – Posttest)	Negative	3	7.50	22.50
	Positive	32	18.98	607.50
	Equal	5	-	-
Language Use (Pretest – Posttest)	Negative	6	11	66
	Positive	33	21.64	714
	Equal	1	-	-
Mechanics (Pretest – Posttest)	Negative	6	11.75	70.50
	Positive	33	21.50	709.50
	Equal	1	-	-

Table 6 shows the differences among the scores of vocabulary, language use, and mechanics in the pretest and posttest. The mean scores of vocabulary, language use, and mechanics in the pretest were 7.98, 17.66, and 3.22, while in the posttest they were 10.91, 2.93, and 3.92, respectively. As indicated in the Table, the scores increased significantly in the post-test ($p < .05$).

Table 6

The Wilcoxon test

	Vocabulary Pretest – Posttest	Language Use Pretest – Posttest	Mechanics Pretest – Posttest
Z	-4.79	-4.52	-4.47
Sig.	0.0001	0.0001	0.0001

Therefore, it can be concluded that the students' scores for all the features of writing which were examined increased significantly from the pretest to the posttest phase, thus confirming the efficiency of using DST in teaching EFL writing.

EFL Students' perception of DST

The second research question of this study aimed at examining the learners' perception of implementing DST in EFL classes. In order to answer this question, both the quantitative (questionnaire) and qualitative (interviews) data collected are analyzed respectively in this section.

Students' perception of the DST questionnaire

The students' responses to the 13-Likert items in the questionnaire which were about their perception of using DST for teaching writing were analyzed. First, the assumption of normality was checked. As indicated in Table 7, the data for this variable were normal (sig. > .05). Therefore, a *t*-test was used to test the students' perception of DST.

Table 7

Kolmogorov-Smirnov test to check the normality of the perception variable

Z	No.	Sig.
0.08	40	0.20

To examine the students' perception of DST, their responses to the items (from 1-5) were counted, and number 3 as the mean of 1-5 was chosen as the criterion number, and then the *t*-test was run to compare the total means with the criterion score. As indicated in Table 8, given the significance level ($p < .05$), it can be concluded that the average score is significantly higher than the criterion number 3. In other words, students' satisfaction with DST is at a significant level.

Table 8

One-sample t-test for students' perception toward DST

Variable	Mean	t	df	Sig.	Mean Difference with number 55	95% of Confidence Interval of the Difference	
						Lower Bound	Upper Bound
Satisfaction	4.05	16.76	39	0.0001	1.05	0.93	1.1

Analysis of students' interviews about DST

The analysis of interviews showed that almost all students agreed that DST offers many advantages in learning EFL writing. In general, they believed that implementing DST made a great contribution to their improvement in essay writing. Some excerpts of students' ideas are presented in this part by using thematic analysis of the data:

Scriptwriting and giving feedback

Based on the students' ideas, scriptwriting and giving feedback were of those factors helping them improve their essay writing skills as they stated: *"In my opinion, DST could improve my writing and all of this happened by script writing and your feedback"* (Student No. 2), or as another student said: *"No matter how well we produce a video for our story, what improved my writing was the script that at the beginning we had no idea how helpful it will be. We were writing and then you or our classmates were finding our errors and correcting us. I'm sure I never forget my errors"* (Student No. 12). This is in line with Girmen et al. (2019) who maintained that feedback has a positive role in improving students' writing using DST.

Motivation

In addition, the students mentioned that implementing DST could give them more motivation in classroom activities as shown in their comments: *"When it comes to online classes, students aren't willing to attend the sessions, but DST made us eager to do our teamwork and see the results in the feedback session"* (Student No. 15). Similarly, other students believed that *"Attending the online class makes us bored, but going through amazing stages in order to write and produce a story was the most exciting experience of having this online class"* (Student No. 28), or *"Believe it or not, it helped me a lot to speak and show myself more in my English classes in the language institute that I participate in, because I know more and do it better than others. That's the reason I didn't like the sessions to be finished"* (Student No. 25). The findings of some studies in the literature confirm students' comments that motivation is a booster to their engagement and collaboration to the task being done using DST in EFL classrooms (Abiola, 2014; Gözen & Cırık, 2017; Foley, 2013; Normann, 2011; Vasudevan et al., 2010).

Collaboration / Teamwork

Considering the classroom dynamics, the students believed that it could improve their teamwork: *"In other English classes, we were just doing pair work only by making conversations, while here we did more than that and we enjoyed doing our group assignments together"* (Student No. 13); *"I learned a lot from my teammates. Vocabulary, grammar, creativity and the most important of all how to work in a group"* (Student No. 24); *"I have never had such an experience which enforces teamwork. DST taught me to work as a team; it wasn't like my previous experiences"* (Student No. 40). The factors which students pointed out in collaboration with other students, namely joy, learning from each other, and learning how to work together as a team are prime results of doing DST collaboratively in the classes as Chen and Chuang (2021) reported in their study.

Language development

Furthermore, the use of DST could help students learn new words, and grammatical rules including punctuation more effectively. The use of DST could help students learn new words and the appropriate context which they could use them: *"We had to review the words which we learned before and we had to ask and check the proper use of the words"*, (Student No. 10); *"I was checking the examples in the dictionary all the time to see if I'm using it right in the context or*

not" (Student No. 34), or "The more we went on, the more I learned about word knowledge and power. I am now familiar with how and when to use the words" (Student No. 9). In addition, mastering grammatical rules was another improvement which students admitted: "I could distinguish the tenses, but I had no idea when and where to use them in a sentence. The feedback sessions helped me learn them practically" (Student No. 7); "As an English language enthusiast, once I got corrected either by you or students, I felt a bit ashamed. Therefore, I myself tried to be conscious toward grammatical accuracy in my sentences" (Student No. 29), or "I knew the basic grammar, but I was still producing faulty sentences. Observing my friends and their correcting of my errors in the group helped me to produce error-free sentences" (Student No. 31). DST also could help students to make a considerable improvement in their essay writing in terms of their punctuation: "Your and our peers' correction of the errors helped us a lot in terms of punctuation" (Student No. 3); "Now, I know about coherence and the way the cohesive devices should be used. Before this class, I wasn't even sure when to use a comma" (Student No. 11), or "Prepositional phrases, conjunctive adverbs, coordinators, cohesion and coherence, and unity are the terms I learned in this class. Above all, their punctuation in the sentence" (Student No. 5). The findings of studies conducted by Girmen et al. (2019), Rong and Noor (2019), and Karatay (2011) are in line with the students' comments.

Amusement

Despite some students may find online classes boring, the use of DST made the classroom atmosphere more interesting for the students: "We were learning while we had a lot of fun writing the script and making our PowerPoint slides in the group" (Student No. 27). Another student said, "It was great. I didn't know I can learn while having fun and enjoying with my classmates" (Student No. 8), or "Time was flying. It was so fascinating for me. It was so entertaining" (Student No. 23).

Media / Digital literacy

Throughout the whole process, the students used some software and applications namely, Google docs, Skype, Camtasia, voice recorders, Paint, Photoshop, etc. They believed: "Since we had to check the Internet and social media and use some software packages to produce videos, we improved a great deal of digital skills" (Student No. 35). One student said, "I thought of myself as a dumb in computer. At least, I can make something now and my digital literacy has been improved" (Student No. 32). Another student maintained, "For example, Ehsan is a techie in multimedia and we know it all. By working together, I learned how to use software to make clips. I don't envy him anymore" (Student No. 1). In a similar study by Tanrikulu (2020), students' digital literacy has been improved as a result of doing DST.

Creativity

It was discussed at the beginning of the class that the students should produce their genuine stories. Thus, they had to come up with a notion and develop it which required imagination and creativity.

In line with Dollar and Tolu (2015) and Salpeter (2005), digital storytelling was an aid to the students' creativity: *"Because we were asked to write a story and develop a scenario, we were encouraged to use our imagination and creativity"* (Student No. 4); *"It forced us to use our dreams, imagination, and creativity to write the story"* (Student No. 14), or *"It was hard to come to a conclusion because we all thought we had the best idea ever"* (Student No. 20).

However, there were only two students who believed DST is not worth using more than two or three sessions. This is how they reflected: *"Of course it was helpful; however, not for many sessions. Instead, we could do more other activities or tests"* (Student No. 29), or as another student said *"DST must be considered as a supplementary activity for the classroom procedure. It shouldn't be the focus of the whole class"* (Student No. 24).

Table 9 summarizes the categories emerged from the analysis of interviews and their frequency.

Table 9

Categories emerging from the analysis of Qualitative Data

Categories	Sample Excerpts	F	%
Motivation	When it comes to online classes, students aren't willing to attend the sessions, but DST made us eager to do our team work and see the results in the feedback session.	18	45
Collaboration / Team Work	In English classes, we were just doing pair work only by making conversations, while here we were more than that and we enjoyed doing our group assignment together.	17	42.5
Vocabulary Development	We had to review the words which we learned before and we had to ask and check the proper use of words.	16	40
Grammar and Structure	I could distinguish the tenses, but I had no idea when and where to use them in a sentence. The feedback sessions made me learn them practically.	16	40
Amusing	We were learning while we had a lot of fun writing the script and making our power point slides in group.	15	37.5
Conversational Skills	While I was reporting our group work and also the script, I could see how well it helps me with my speaking.	10	25

Media / Digital Literacy	Since we had to check the Internet and social media and use software packages to produce videos, we improved a great deal of digital skills.	8	20
Creativity	Because we were asked to write a story and develop a scenario, we were forced to use our imagination and creativity.	5	12.5
Punctuation	Your and our peers' correcting the scripts errors helped us a lot in terms of punctuation.	3	7.5
Time-taking	The process of writing the script and preparing the final voice-narrated video took such a long time.	3	7.5
Difficult	Due to its novelty, it seemed all Greek to me.	2	5

Discussion

This study endeavored to examine the effect of using DST on K-12 students' essay writing development and to provide an in-depth understanding of their perception toward implementing DST in the class. By analyzing the quantitative and qualitative data, this study showed that implementing DST could positively influence EFL students' writing performance. Furthermore, the students had a positive view of the classroom experience they underwent.

It appears that in contrast to this study that examined the impact of using DST on improving EFL writing subscales (content, vocabulary, organization, language use, and mechanics), the majority of the previous studies have investigated the effect of DST on writing improvement as a whole (Azis, 2020; Rahimi & Yadollahi, 2017; Rong & Noor, 2019; Sarica & Usluel, 2016).

In line with the findings of this study, the results of the previous studies also showed that DST can contribute to students' creativity, innovation, collaborative learning, and motivation in reading and writing (Dollar & Tolu, 2015; Salpeter, 2005). One of the important advantages of using DST in the EFL classroom is that it can enhance students' motivation by boosting learners' engagement and collaboration during the learning process (Abiola, 2014; Gözen & Cırık, 2017). The increase in students' motivation can play an important role in their educational success (Foley, 2013; Normann, 2011; Vasudevan et al., 2010). An extensive body of research has also revealed the fact that DST can enhance the students' reading and writing skills (Bagui, 1998; Balaman, 2018; Campbell, 2012; Herrera Ramírez, 2013; Michalski et al., 2005). Given that digital storytelling necessitates students incorporate multimedia elements which may promote optimal learning conditions, this approach could motivate increased student writing output (Michalski et al., 2005; Sylvester & Greenidge, 2009).

Furthermore, compared with in-person classes, more students are inclined to be passive in online classes, and it is the teacher's responsibility to implement innovative techniques and strategies to encourage students' engagement and participation. Using DST appeared to provide more opportunities for learners in this study to be active, given that student collaboration can improve active participation in classroom activities (Babiker, 2018; Villarreal & Gil-Sarratea, 2020).

Taken together, all writing sub-skills (content, vocabulary, organization, language use, and mechanics) were significantly improved in this study. Writing content can be better improved when students are allowed to comfortably use and apply a great deal of vocabulary and are familiar with the topic. While writing a story, different genres, situations, contexts, and topics are involved. In this study, the participants were introduced to similar texts which were previously written with the same requirements that we expected the students to do, in order to familiarize them with what and how they needed to write their own stories. Another factor that can improve one's writing content is developing critical thinking (CT) on different issues as an outcome of students' collaboration (Chen & Chuang, 2021). The findings of this study showed that students could enrich their writing content through team working and collaboration since their group peers had the chance to scaffold their knowledge of language components.

Besides, students searched for the words and expressions they needed for writing a story which not only accounts for their success in writing content but is an indicator of their success in the vocabulary subscale as they pointed out in their interviews that using words and receiving feedback helped them with better retention and use of words. Highlighting the term "script" which has already been mentioned, there have been some studies proving script as one of the main effective and organizing role which pave the way for successful writing (Xu et al., 2011). They also observed the other groups' presentation of their scripts, which exposed them to learn more vocabulary. Due to the active participation resulting from the joint production of texts, mastery of words was outstanding. This is because DST could result in better implicit learning of vocabulary with which students could convey the meaning of their story more naturally and fluently than the inappropriate use of words, which is in line with the findings of Leong et al., (2019). In addition, this corroborates Azis (2020) and Hava (2019) in which DST significantly improved the use of vocabulary in students' writing in the same way. Despite the difficulty that presenting the produced texts and giving feedback brought to the classroom, these activities were essential to significantly support learners' development. According to Ellis (2009), implicit learning means exposing students into an "enriched" environment with the target feature. In the same vein, throughout the treatment phase of the current study which lasted for 24 sessions, students were presented with feedback and scaffolding on the part of their teacher. While reading their script in each session, they came across modification and explanation for both use and usage of words in specific contexts. The students themselves pointed out in their comments that they learned how to use words automatically in their essays. Relatedly, it could be a constructive factor leading to implicit learning of vocabulary.

In addition, Rong and Noor (2019) reported that DST can positively influence students' writing, especially the element of "Good Grammar Language Use" (p.124) which is in line with the findings of this study showing that using DST improved the students' knowledge of grammar. In our study, students could use a wide range of error-free compound and complex sentences in their writing compared to their pretest version where they produced a limited number of compound sentences. In addition, they added variety to their sentences since they used different ways to make a sentence compound like coordinators, conjunctive adverbs (interrupters), and even paired conjunctions, and in rare cases, it was observed that they adhered to the grammatical points which are used less frequently like "inversion structures".

The students' production of texts had significantly increased because writing is at the heart of digital storytelling; it, in fact, urges students to outline and plan across the stages of their story writing (Sarica & Usluel, 2016). While doing so, students had to embed various incidents and issues happening in different contexts in their story, so they had to make all details and contexts related to each other so that they could keep the coherence in their story. The same, similarly, applies within stages where they had to write a united context in which all the incidents keep the flow and do not disturb the conveyed meaning and their reader/listener could follow their leads in the story within a singular context; therefore, students pay more careful attention to both the inter- and intra-sentential organization of their texts as found in the present study which confirms the results of Girmen et al. (2019). Considering one of the students' stories into consideration, there was a severe argument between a couple at home, and then it moves on to a chief for solving their problems. Then, as a sign of appreciation, the young couple invite the chief and his family to a pilgrimage. After that, it is the time to hold some cultural religious-bound ceremonies. All in all, reading their whole story happening in different contexts showed their increased ability in writing and the way they organize sentences, paragraphs, and contexts coherently, and their astute use of vocabulary which assisted them in conveying the exact meaning with the proper sense.

In addition, the ability to use the language accurately is inextricably tied to grammatical knowledge, and it is natural that when language use improves, the writing mechanics will be improved as well which is in line with the study carried out by Hirvela et al., (2012). Due to the constant feedback and revision of their scripts, the students became familiar with punctuation marks and the correct way of punctuation which led to significant improvement of students in punctuation. This corroborates Girmen et al. (2019) whose study aimed to define the role of DST in improving fourth-grade elementary students' writing. One of the main findings that Girmen et al. (2019) presented was the improvement of students' punctuation and spelling in their final produced texts.

Conclusion

This study has attempted to draw on the use of DST to foster EFL students' writing development. The findings of the study revealed that such a pedagogical approach contributes positively to the improvement of learners' writing skills and sub-skills, namely content,

organization, vocabulary, language use, and mechanics. In addition, the study focussed on EFL students' perception of the use of DST in their classes. It found that participants were satisfied with DST implementation because it augmented their collaboration, motivation, creativity, self-confidence, and social skills.

Moreover, the results of the current study highlight the need to implement more innovative and effective pedagogical approaches which give students more opportunities to practice and learn. Teacher training programs as well as educational systems, therefore, should provide teachers with the required knowledge of innovative and effective pedagogy and technology that can offer students classes where they can integrate both their skills and sub-skills, i.e., vocabulary, grammar, etc. which result in better performance of students accompanying weariless experiences, especially for writing which is considered to be complex. This is in line with the ideas of other researchers maintaining that professional development programs should be designed to equip teachers with the knowledge, understanding, and skills necessary to use technology in class (Dong, 2018; Taghizadeh & Hasani Yourdshahi, 2020). Consequently, technology-oriented approaches like DST can be implemented to boost the effectiveness of writing classes, particularly content, vocabulary, organization, language use, and mechanics since writing is at the heart of DST.

The study had some limitations. For example, the participants were selected based on convenience sampling and only male students were included in the study due to their availability. In addition, although the investigation attempted to supplement the results of the questionnaire about the students' perception of DST through interviews, the results of the questionnaire are accurate to the extent that the participants provided honest responses.

Therefore, it is suggested that this study be replicated in other contexts with other EFL students of different ages, gender, or language proficiency levels. Moreover, future researchers can investigate the efficiency of using DST in teaching other language skills such as speaking skills. For example, students can present their stories in the classroom and receive feedback on speaking sub-skills like pronunciation, fluency, accuracy, and coherence.

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.
- Abiola, L. L. (2014). The effect of digital storytelling on kindergarten pupils' achievement in moral instruction in basic schools in Oyo State. *IOSR Journal of Research & Method in Education*, 4(5), 26-34.
- Almanasreh, E., Moles, R., & Chen, T. F. (2019). Evaluation of methods used for estimating content validity. *Research in social and administrative pharmacy*, 15(2), 214-221.

- Alsamadani, H. A. (2010). The relationship between Saudi EFL students' writing competence, L1 writing proficiency, and self-regulation. *European Journal of Social Sciences*, 16(1), 53-63.
- Anderson, T., & Dron, J. (2011). Three generations of distance education pedagogy. *International Review of Research in Open and Distributed Learning*, 12(3), 80-97.
- Azis, Y. A. (2020). Collaborative digital storytelling-based task for EFL writing instruction: Outcomes and perceptions. *Journal of Asia TEFL*, 17(2), 562.
- Babiker, A. (2018). Improving speaking skills in EFL classes through collaborative learning. *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)*, 44(1), 137-154.
- Bagui, S. (1998). Reasons for increased learning using multimedia. *Journal of educational multimedia and hypermedia*, 7, 3-18.
- Balaman, S. (2018). Digital storytelling: A multimodal narrative writing genre. *Journal of Language and Linguistic Studies*, 14(3), 202-212.
- Campbell, T. A. (2012). Digital storytelling in an elementary classroom: Going beyond entertainment. *Procedia-Social and Behavioral Sciences*, 69, 385-393.
- Chen, H. L., & Chuang, Y. C. (2021). The effects of digital storytelling games on high school students' critical thinking skills. *Journal of Computer Assisted Learning*, 37(1), 265-274.
- Dollar, Y. K., & Tolu, A. T. (2015). My first digital story: a case study with 5th grade Turkish English language learners. *ELT Research Journal*, 4(3).
- Dong, C. (2018). 'Young children nowadays are very smart in ICT'—preschool teachers' perceptions of ICT use. *International Journal of Early Years Education*, 1-14.
- Ellis, N. C. (2019). Essentials of a theory of language cognition. *The Modern Language Journal*, 103, 39-60.
- Foley, L. M. (2013). Digital storytelling in primary-grade classrooms: Arizona State University.
- Ganaat Pisheh, E. A., NejatyJahromy, Y., Badri Gargari, R., Hashemi, T., & Fathi-Azar, E. (2020). The effect of teaching with a myth buster scientific method on the critical and analytical thinking of students: the moderating role of social achievement goals. *Quarterly Journal of Child Mental Health*, 7(1), 220-232.
- Girmen, Q. n., Özkanal, Ü., & Dayan, G. (2019). Digital Storytelling in the Language Arts Classroom. *Universal Journal of Educational Research*, 7, 55-65.
- Gözen, G., & Cırık, İ. (2017). Impact of Digital Storytelling on Social-Emotional Behaviours of Preschool Children. *Elementary Education Online*, 16(4), 1882-1896.
- Green, L. S. (2013). Language learning through a lens: The case for digital storytelling in the second language classroom. *School Libraries Worldwide*, 19(2), 23-36.

- Hava, K. (2019). Exploring the role of digital storytelling in student motivation and satisfaction in EFL education. *Computer Assisted Language Learning*, 34(1), 1-21.
- Herrera Ramírez, Y. E. (2013). Writing skill enhancement when creating narrative texts through the use of collaborative writing and the Storybird Web 2.0 tool. *Colombian Applied Linguistics Journal*, 15(2), 166-183.
- Hirvela, A., Nussbaum, A., & Pierson, H. (2012). ESL students' attitudes toward punctuation. *System*, 40(1), 11-23.
- Hwang, W.-Y., Shadiey, R., Hsu, J.-L., Huang, Y.-M., Hsu, G.-L., & Lin, Y.-C. (2016). Effects of storytelling to facilitate EFL speaking using Web-based multimedia system. *Computer Assisted Language Learning*, 29(2), 215-241.
- Jacobs, H., Zinkgraf, S. A., Wormuth, D. R., Hartfiel, V. F., & Hughey, J. B. (1981). *English composition program. Testing ESL composition: a practical approach*. Newbury House.
- Jitpaisarnwattana, N. (2018). Students' Attitudes towards the Use of Digital Storytelling in Foreign Language Classroom: The Zimmer Twins Project. *REFlections*, 25(2), 59-75.
- Kaplan, A. M., & Haenlein, M. (2016). Higher education and the digital revolution: About MOOCs, SPOCs, social media, and the Cookie Monster. *Business Horizons*, 59(4), 441-450.
- Karatay, H. (2011). 4+ 1 planli yazma ve değerlendirme modelinin öğretmen adaylarının yazılı anlatım tutumlarını ve yazma becerilerini geliştirmeye etkisi. *Electronic Turkish Studies*, 6(3).
- Keegan, D. (2013). *Foundations of distance education*. Routledge.
- Kurk, G., & Atay, D. (2007). Students' writing apprehension. *Journal of Theory and Practice in Education*, 3(1), 12-23.
- Leong, A. C. H., Abidin, M. J. Z., & Saibon, J. (2019). Learners' perceptions of the impact of using digital storytelling on vocabulary learning. *Teaching English with Technology*, 19(4), 3-26.
- Michalski, P., Hodges, D., & Banister, S. (2005). Digital Storytelling in the Middle Childhood Special Education Classroom: a teacher's story of adaptations. *Teaching Exceptional Children Plus*, 1(4), n4.
- Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). e-Learning, online learning, and distance learning environments: Are they the same?. *The Internet and Higher Education*, 14(2), 129-135.
- Normann, A. (2011). Digital storytelling in second language learning: A qualitative study on students' reflections on potentials for learning (Master's Thesis). Norwegian University of Science and Technology, Norway.
- Rahimi, M., & Yadollahi, S. (2017). Effects of offline vs. online digital storytelling on the development of EFL learners' literacy skills. *Cogent Education*, 4(1), 1285531.
- Reinders, H. (2011). Digital storytelling in the foreign language classroom. *ELTWO*, 3.

- Robin, B. R. (2008). Digital storytelling: A powerful technology tool for the 21st century classroom. *Theory into practice*, 47(3), 220-228.
- Rong, L. P., & Noor, N. M. (2019). Digital Storytelling as a Creative Teaching Method in Promoting Secondary School Students' Writing Skills. *International Journal of Interactive Mobile Technologies*, 13(7), 117-128.
- Salpeter, J. (2005). Telling Tales with Technology: Digital Storytelling Is a New Twist on the Ancient Art of the Oral Narrative. *Technology & Learning*, 25(7), 18.
- Sarica, H. Ç., & Usuel, Y. K. (2016). The effect of digital storytelling on visual memory and writing skills. *Computers & Education*, 94, 298-309.
- Smeda, N., Dakich, E., & Sharda, N. (2014). The effectiveness of digital storytelling in the classrooms: a comprehensive study. *Smart Learning Environments*, 1(1), 1-21.
- Spector, J. M., Merrill, M. D., Van Merriënboer, J. J., & Driscoll, M. P. (2008). *Handbook of research on educational communications and technology* (Vol. 3): Springer.
- Sylvester, R., & Greenidge, W. I. (2009). Digital storytelling: Extending the potential for struggling writers. *The reading teacher*, 63(4), 284-295.
- Taghizadeh, M., & Hasani Yourdshahi, Z. (2020). Integrating technology into young learners' classes: language teachers' perceptions. *Computer Assisted Language Learning*, 33(8), 982-1006.
- Tahriri, A., Tous, M. D., & MovahedFar, S. (2015). The impact of digital storytelling on EFL learners' oracy skills and motivation. *International Journal of Applied Linguistics and English Literature*, 4(3), 144-153.
- Tanrikulu, F. (2020). Students' perceptions about the effects of collaborative digital storytelling on writing skills. *Computer Assisted Language Learning*, 1-16.
- Vasudevan, L., Schultz, K., & Bateman, J. (2010). Rethinking composing in a digital age: Authoring literate identities through multimodal storytelling. *Written communication*, 27(4), 442-468.
- Villarreal, I., & Gil-Sarratea, N. (2020). The effect of collaborative writing in an EFL secondary setting. *Language Teaching Research*, 24(6), 874-897.
- 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.