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Effects of offline vs. online digital storytelling on the development of EFL learners' literacy skills

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Abstract: The present study investigated the effects of offline vs. online digital storytelling on the development of EFL learners' literacy skills (reading and writing). Forty-two lower intermediate language learners participated in the study as the experimental ($n = 21$) and control groups ($n = 21$). The Reading-Writing section of the Key English Test was administered to both groups before the treatment so as to assess their reading and writing skills in English as a foreign language. Process-oriented writing instruction was subsequently given to both groups for a period of five months. The experimental group was trained to undertake the process of writing using an online platform, while the control group benefited an offline content producing program in writing instruction. Both groups' literacy skills were assessed once more at the end of the intervention. The results of Analysis of Covariance primarily revealed that the literacy skills of those who produced their stories with the online platform improved significantly in comparison to the control group, who had worked with the offline software. Further, the results revealed a positive and significant correlation between the hours members of the experimental group spent on working with computers and the development of their literacy skills.

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1. Introduction

Storytelling is an essentially human experience to convey information about oneself, others, or the world (McDrury & Alterio, 2003). Telling a story is common for the purpose of teaching, getting

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PUBLIC INTEREST STATEMENT

The effects of an online digital storytelling platform on the development of young language learners' literacy were examined. Two groups of learners participated in the study. One group experienced writing instruction using the online digital story maker Story Jumper. The other group worked with an offline program. Both groups' literacy skills were measured before and after the instruction. At the end of the course, it was found that literacy skills of those who produced their stories with the online platform improved significantly in comparison to those who had worked with the offline software. Further, a positive relationship between the hours of working with the online platform for instructional purposes and the development of literacy skills was found.

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information, and entertainment. Stories help human beings to understand their own and other cultures and perceive the world around (Glassner, 2001). More importantly, stories have the empowering potentials of helping individuals learn skills and acquire knowledge as human's "brain is wired to organize, retain and access information through story and that every relationship experience and object is recorded in the mind as a story" (Eck, 2006, pp. 10–11). Storytelling is suggested to be the original form of teaching (Pedersen, 1995) and an effective way to develop literacy, critical thinking, and imagination (Marsh, 1986). Stories can be used to teach different school subjects, inspire autonomous learning, reinforce conceptual development, and teach the notions of citizenship, diversity and multiculturalism (Ellis & Brewster, 2014).

Storytelling has a significant role in building language skills (Wilson, 1997). Carefully selected stories provide language learners with great chances of practicing English (Nilson, 2010) through exposing them to comprehensible and meaningful input. Storytelling plays a crucial role in promoting interaction and negotiation of meaning in language classes as storytelling is dialogic (Bakhtin, 1986) and "provides a two-way interaction connecting the storyteller and listener(s)" (National Storytelling Network, 2012, as cited in Bozdogan, 2012, p. 126). Storytelling in teaching language to young learners has certain functions including: "(a) making sense of experiences, (b) portraying roles played by various characters in stories, (c) making past events present and abstract events more vivid, and (d) forging relationships and facilitating language skills" (McCabe, 1996, ac cited in McCarthey, 2004, p. 29).

In recent years, the pervasive influence of technology on all aspects of people's life has led to the emergence of a new generation of stories, i.e. digital storytelling. Digital storytelling, as the integration of computer-based technologies and the art of storytelling, "blends media to enrich and enhance the written or spoken word" (Frazel, 2011, p. 9). Digital storytelling is both a valuable teaching content and procedure that inspires active learning and "creates atmosphere of excitement and fun; fosters appropriate use of technology within curriculum; bridges school and community; weaves into all subject areas; [and is] effective for both visual and auditory learners" (Frazel, 2011, p. 11). Digital storytelling has been found to facilitate self-expression and communication skills and enhance the development of problem-solving ability, motivational practices, and cooperative learning (Ohler, 2013).

As the core element of digital stories is language, the impact of making digital stories on language learning has attracted the attention of language educationists recently. Positive effects of digital stories on improving language learners' written (Sarıca & Usluel, 2016) and oral skills (Hwang et al., 2016), language learning motivation (Tecnam, 2013), and critical thinking (Yang & Wu, 2012) have been reported in the literature. The findings of these studies generally postulate that with telling stories digitally, students have more opportunities for cooperative and discovery learning which provide them with cognitive and social development through using language skills (Tecnam, 2013).

Within this framework, one string of research has focused on examining the role of making digital stories in writing instruction. Considering the cognitive and social nature of writing, digital storytelling can provide student writers with "numerous opportunities to interact and use language in authentic and personally meaningful ways" (Rance-Roney, 2008, p. 30). It is emphasized that digital storytelling has this capacity to increase students' motivation to write "unconsciously" and can stimulate students who do not have tendency to write or confidence in writing itself (Xu, Park, & Baek, 2011). There is also evidence to support the effects of digital storytelling on the development of writing skills among second language learners through collaboration and team work (e.g. Sarıca & Usluel, 2016). However, little is known about the impact of making and telling digital stories on language learners' literacy skills (both writing and reading comprehension). Besides, while a variety of technologies have been used in the literature of digital storytelling, the comparative effects of online and offline digital storytelling on language skills progress is open to further research.

2. Review of literature

2.1. Digital storytelling

The concept of digital storytelling was initially introduced at the Center for Digital Storytelling in California by Joe Lambert. Digital storytelling is the combination of multimedia (e.g. images, audio, video, and web publishing) and storytelling to enrich the spoken and written expression and to present stories digitally not orally to others. Digital documentaries, digital essays, computer-based narratives, interactive storytelling, and electronic memoirs are some other terms used interchangeably for digital storytelling. Digital storytelling can be simply defined as "sharing one's story through multiple mediums of imagery, text, voice, sound, music, video and animation" (Lambert, 2002).

Digital storytelling has been called a new variation to storytelling. According to the Digital Storytelling Association (2002), digital storytelling adds modern expression to the ancient forms of storytelling. For a long time, people conveyed their wisdom, values, and knowledge through narrating stories, while new technologies have now facilitated presenting and watching stories on both silver and computer screens (Digital Storytelling Association, 2010). Further, digital storytelling gives every individual the opportunity to share their unique experiences with others and create a social community through telling their personal stories (Meadows, 2003).

Digital stories are categorized into three major groups: personal narratives that include some important events in one's life, stories that examine historical events, and stories that are primarily used to inform or instruct people on a specific subject (Robin, 2008). The Seven Elements of Digital Storytelling are identified as (Robin, 2006):
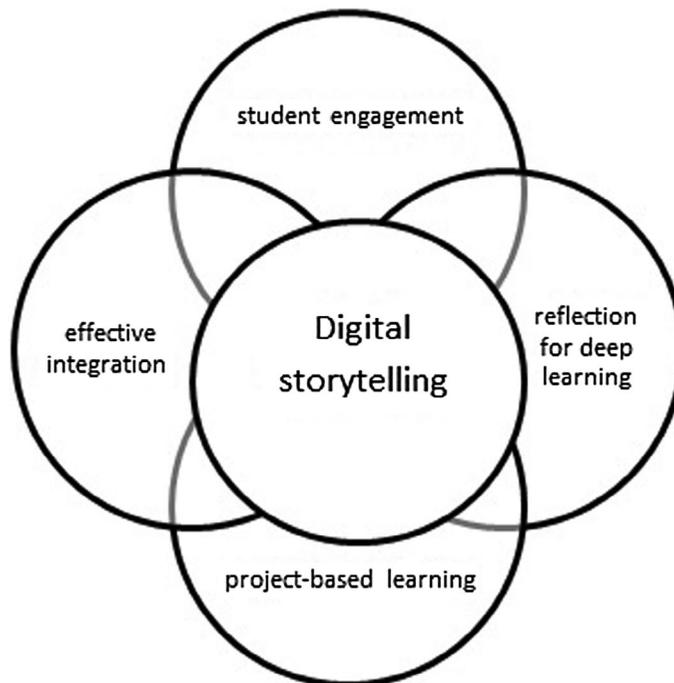
(1) Point of view (What is the main point of the story and what is the perspective of the author?),
(2) A dramatic question (A key question that keeps the viewer's attention and will be answered by the end of the story.),
(3) Emotional content (Serious issues that come alive in a personal and powerful way and connect the audience to the story.),
(4) The gift of your voice (A way to personalize the story to help the audience understand the context.),
(5) The power of the soundtrack (Music or other sounds that support and embellish the story.),
(6) Economy (Using just enough content to tell the story without overloading the viewer.),
(7) Pacing (The rhythm of the story and how slowly or quickly it progresses.).

Digital storytelling has the potential to be integrated in educational settings as a dynamic tool for teaching different subjects and concepts. It allows students to improve a wide range of learning skills (e.g. critical thinking, cooperation, self-regulation, etc.), literacies (e.g. technology, visual, digital, global, and informational) and cognitive/academic abilities (comprehension, self-expression, reflection, etc.). These skills lead to the development of various types of competencies including research-based competence; presentation, writing, technology, interview, assessment, and interpersonal skills; and organization and problem-solving ability (Alcantud-Díaz, Ricart-Vayá, & Gregori-Signes, 2014).

Nowadays teachers of many subjects use digital storytelling in their classes to make difficult learning issues more concrete and understandable (Ohler, 2013). In this regard, digital storytelling has been reported to increase the convergence of four student-centered learning strategies (Barrett, 2006):

• student engagement,
• reflection for deep learning,
• project-based learning, and
• the effective integration of technology into instruction (Figure 1).

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Figure 1. Convergence of four student-centered learning strategies in digital storytelling.

Investigating the use of digital storytelling in educational contexts, the Instructional Technology Department of the University of Houston (2009) recommended four stages for making digital story-telling: (1) the storyteller should choose a topic for the digital story and determine the purpose of making the story; (2) the storyteller chooses specific audios, images, texts, and contents for the story; (3) the storyteller creates the story by inserting the audio/visual materials, narration, music, and animation into a media producer program on the computer; and (4) the story is presented to the audience and their feedback is asked for.

Digital storytelling has emerged as an instructional tool to teach different school subjects to raise students' attention and interest (Robin, 2008) and teaching languages is no exception in this regard. Research shows that digital storytelling offers a lot of several opportunities for language learners. It helps learners to improve their communicative competence in a learner-centered environment us-ing language authentically and meaningfully in a personal manner (Rance-Roney, 2008). The signifi-cant role of digital storytelling in listening comprehension (Abdolmanafi-Rokni & Qarajeh, 2014), reading and vocabulary learning (Chuang, Chiang, Su, & Chang, 2013), oracy skills and motivation (Tahriri, Danaye Tous, & MovahedFar, 2015); learning achievement, writing skill and verbal skills, and critical thinking ability (Yuksel, Robin, & McNeil, 2011) is also evident.

2.2. Digital storytelling and writing instruction

Writing is a basic communication and productive language skill and a fundamental process in learn-ing language literacy. Writing is both a physical and a mental act with expressive and impressive purposes and can be created following either product-oriented or process-oriented approaches (Sokolik, 2003). Writing is known as a cognitive activity encompassing linguistic and communication levels. While on the linguistic level the student is supposed to make the letters and to acquire the ability to manipulate the grammatical forms accurately, on the communication level, the student's written products are the result of thinking, drafting, and revising procedures.

Writing plays a significant role in the process of creating a digital story (Robin, 2008). The students construct their stories under the supervision of the teacher and their created stories are assessed by the teacher, whole class, and even by other internet users if the stories are published online. They

receive support in different phases of making digital stories including writing process, encoding and decoding messages, story comprehension, reading and writing, vocabulary, etc. (Skinner & Hagood, 2008). In this way, student writers benefit from their peers' creativity and advice on the mechanics of writing to organize their ideas, express their opinions, and construct meaningful narratives reasonably in an accurate and coherent way. The interactive tools in the digitally rich media environments allow language learners to work both collaboratively and individually which enhance their awareness on forms and functions of the language (Blin & Appel, 2011). In the collaborative context of digital technologies "the interaction between students, the flow of ideas and thinking aloud encourage students to foster active learning, in which users discover and address gaps in their understanding when explaining concepts to others" (Sadik, 2008, p. 489). Besides writing authentically in an interactive environment, the students' motivation and creativity are improved (Tan, Ng, & Saw, 2010). Additionally, the process-oriented and collaborative nature of writing in a digitally multi-dimensional environment provides further opportunity for students to focus more on the writing process itself (Ciekanski & Chanier, 2008).

Digitally collaborative writing has been found to empower students to write together regardless of time limitation and restriction of in-class communication (Hewitt & Scardamalia, 1998). Using collaborative online story-writing platforms (e.g. Storybird) promotes students' imagination, literacy, and self-confidence (Menezes, 2012). Similarly, using other multimedia-authoring software, including PowerPoint and HyperStudio provide instruction and support from teachers and peers and help language learners become more successful in writing especially in planning and presenting digital stories. More importantly, including digital storytelling as a part of literacy instruction assists student to experience discovery learning in which they use their personal experiences to construct knowledge through meaningful learning (Mayer, 2003). Digital storytelling has certain merits for writing instructors, too. The enhanced strategic teaching through digital storytelling facilitates collaboration between teachers' external supervision and students' internal control (Gregori-Signes, 2014). Teachers have shown positive perceptions of the effectiveness of technologies on both their students' writing habits and their role as educators. They believe that interactive online technologies increase their students' abilities to practice writing more effectively and collaboratively (Purcell, Buchanan & Friedrich, 2013).

However, the evolution of digital storytelling and its effectiveness is much dependent on the type of technologies that are used to make digital stories. Hence, by normalization of different types of technologies and widespread access of different groups of people to these technologies and their affordances, examining the effects of different types of digital storytelling platforms and software programs on students' achievement becomes absolutely vital. The present study thus aims at answering the following questions:

(1) Does making digital stories with online platform have any significant impact on the development of literacy skills in comparison to an offline program?

(2) Is there any relationship between learners' working hours with technology and literacy development while making digital stories?

3. Method

3.1. Participants

The participants were 42 first-grade junior high school students. They were all female and ranged in age from 13 to 14 years old. The participants' English proficiency level was at the level of basic user in Council of Europe's Common European Framework of Reference for Languages: Learning, teaching, assessment (2001) at the time of data collection.

The school was a "smart school" that has recently been equipped with many different technologies based on Iranian Ministry of Education's policy to develop technological infrastructures across

all schools of the country. Both offline and online technologies were available in the school. The school had a computer site with a satisfactory internet connection.

The teacher of both classes was an experienced teacher (with more than 15 years of experience). She has an MA in Teaching English as a Foreign Language (TEFL) and is quite technologically literate and skillful. She has carried out several research projects on integrating ICT in language teaching and learning.

3.2. Instruments

3.2.1. Key English test
The Reading–Writing section of Key English Test (KET) (Key English Test, 2010) was used as both pre and posttests. The Reading–Writing test has 9 sections and 56 questions. Parts 1–5 deal with reading skills that expect the participants to read and understand the written materials presented in the form of brochures, signs, magazines, and newspapers. They also should use their basic knowledge of grammar and vocabulary to complete different types of tasks such as filling in the blanks, completing gapped sentences, selecting the right sentence for each gap in a given text, and answering multiple choice questions about a given text.

Writing skill is assessed in parts 6–9. The writing section requires students to use their vocabulary and grammar knowledge to provide words to match definitions, supply words to complete spaces in a text, use information in a text to complete a document, and write a short message of 25–30 words.

3.2.2. IT literacy scale
In order to assess students' IT literacy based on their capability of working with computers prior to the study, the adapted version of Computer Literacy Self-assessment Scale (CLSAS) designed by the Department of Modern Foreign Language University of Stellenbosch was used. CLSAS consists of 51 items along with two questions about computer/internet access devices at home and the amount of computer use. The items in the main part of the scale ask students about their computer and internet knowledge and skills such as the general computer knowledge, file management knowledge, PowerPoint and word processing skills, as well as web skills. The respondents were asked to rate themselves regarding their level of competency in handling the computer and network operations on a three-point Likert scale based on "Yes", "No" and "Not Sure". The reliability of the scale was found to be .86.

3.3. Implementation procedure
The experiment was conducted over a period of five months. The students met twice a week and each session lasted for 90 min. Both experimental and control groups had writing instruction for the same duration of time. At the beginning of the study, the students' entry-level English and IT literacy were assessed. Then, the processes of writing story were explained by the teacher for both groups separately. Moreover, the experimental group was trained to undertake the process of writing using an online platform, while the control group benefited an offline content producing program in writing instruction.

3.3.1 Experimental group
For the experimental group, the teacher introduced Story Jumper in the computer site of the school and made sure all students understood how they have to work with different parts of the platform using some sample stories. Then the teacher created an account for each group on Story Jumper. To ensure that all students have understood what they were to do throughout the project, the teacher asked students to write a sample short story on a free topic in the classroom using Story Jumper, going through the seven phases of the writing process of pre-writing, writing, response providing, revising, editing, post-writing, and evaluating (Weigle, 2014, Table 1).

Table 1. Phases of the writing process		
Phase	**Definition**	**Examples of teaching and learning activities**
Pre-writing	Structured activities to provide motivation, content, fluency, language practice	Structured language practice, readings, films, discussions, brainstorming, webbing, outlining
Writing	First draft	Focus on content, getting ideas on paper
Response	Reaction of a reader or listener	Peer review, partners or small groups, teacher conferences, written feedback
Revising	Reseeing or rethinking content; second draft	Recognizing, adding details, adding support for arguments
Editing	Refinement and attention to writing conventions, including grammar and vocabulary; third draft	Checklists, grammar logs, exercises, proofreading practice
Post-writing	What students and teachers do with finished pieces	Display, share online, compile class writing into a booklet
Evaluating	How teachers and/or students assess student writing	Rubrics, conferences, self-evaluation, portfolios

Source: Adapted from California State University, Stanislaus, n.d., as cited in Weigle (2014, p. 227).

To prepare digital stories, the following steps were taken in alignment with the above- mentioned phases:

In the first phase, the students started the writing task by selecting an appropriate and interesting topic through asking and answering questions in groups, brainstorming, watching movies and slide shows, and making concept maps. Then, the students started to write the first draft of their stories in groups. They composed their stories on the paper based on the material they had prepared in pre-writing phase. In the third phase, the written stories received the necessary feedback of other groups and the teacher. The comments mainly included changes required for word choice, spelling, capitalization, punctuation, and the structure of the sentences. Next, the students revised the first draft and prepared the second draft of their stories. Meanwhile, they were working on the storyboard in which a graphic representation of the script with specified characters and sequences of events were simply drawn.

In the editing phase, the final product of the story and the storyboard received the comments and reflections of the teacher and groupmates. The comments focused on clarity and intelligibility of the content and the message of the stories. Afterwards, the students were to publish their stories in Story Jumper by making their digital storybooks online. Producing digital stories was completed by finding appropriate pictures based on the storyboard, inserting the texts, pictures, and graphics into the program, and assembling everything into a digital book. Finally, the teacher and all groups read the stories and provided the writers with their feedback. The reflections were made based on the overall format of the story and the selection of graphical materials.

3.3.2. Control group
The control group was supposed to create the digital stories using the PowerPoint program. All students knew how to work with PowerPoint in general. However, the teacher trained them on the parts they might have needed in the process of making stories such as inserting animations or special effects. Then the students went through the same procedures as the experimental group using the PowerPoint program including: pre-writing, writing, response providing, revising, editing, post-writing, and evaluating.

The experiment was carried out in the academic year 2014–2015. At the end of the experiment the Reading-Writing section of KET was administered as the posttest.

4. Results

In order to answer research question 1 and find the impact of offline/online digital storytelling on language learners' literacy skill, One Way Analysis of Covariance (ANCOVA) was conducted. The independent variable was the type of instruction (making digital stories with online platform or with the offline software) and the dependent variable consisted of participants' scores of KET Reading–Writing posttest. Participants' scores on KET Reading–Writing pretest were used as the covariate in this analysis. In this way, the possible effect of pretest scores on participants' posttest performance was neutralized.

Preliminary checks were conducted to ensure that there was no violation of the assumption of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate. The result of Levenes' test of equality of error variances also confirmed that error variance of the dependent variable was equal across groups [F (1, 42) = 5.14, p = .477].

As Table 2 shows, the result of ANCOVA revealed a significant main effect for group [F = 11.680, p = .00; partial eta squared = .222] indicating that there was a significant difference between two groups in literacy posttest. In order to examine the effect size of the intervention, the value of Eta squared was considered (.222). "Eta squared represents the proportion of variance of the dependent variable that is explained by the independent variable" (Pallant, 2005, p. 201). As this value is larger than .16, based on Cohen's guidelines (Cohen, 1988), it can be concluded that there was a large effect with a substantial difference in the literacy skills score obtained before and after the intervention.

Examining the descriptive statistics (Table 3) confirms the fact that the experimental group outperformed (mean = 32.818) the control group (mean = 30.772) in literacy posttest. Accordingly, the conclusion can be drawn that making digital stories with online platform has significantly improved literacy in English as a foreign language in comparison to working with PowerPoint as an offline program.

In order to answer research question 2 and find if there is any relationship between students' working hours with technology and the degree of their literacy development while making digital stories, correlation coefficient was calculated. The result of correlation supported a significant relationship between experimental groups' working hours with computers and their literacy

Table 2. Tests of between-subjects effects						
Source	Type III sum of squares	df	Mean square	F	Sig.	Partial eta squared
Corrected model	11,495.767	2	5,747.883	1,274.127	.000	.984
Intercept	60.956	1	60.956	13.512	.001	.248
Pretest	11,220.767	1	11,220.767	2,487.294	.000	.984
Group	52.693	1	52.693	**11.680**	**.001***	.222
Error	184.961	41	4.511			
Total	60,392.000	44				
Corrected total	11,680.727	43				

*p < .01

Table 3. Descriptive statistics for KET		
Groups	**Administration**	**Mean**
Control group (n = 22)	Pretest	29.954
	Posttest	30.772
Experimental group (n = 22)	Pretest	32.818
	Posttest	35.772

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Table 4. The correlation between literacy posttest and computer use hour	
Groups	**Correlation**
Experimental	.451*
Control	.074

*$p < .01$

Table 5. Descriptive statistics for computer use per week	
Groups	**Mean**
Control group	1.59
Experimental group	2.14

development ($r = .451$, $p < .05$). However, this relationship was not significant when the control group was considered ($r = .074$) (Table 4).

Descriptive statistics showed that the experimental group spent more hours per week on working with computers in comparison to the control group when they were making digital stories (Table 5).

5. Discussion

This study aimed at investigating the impact of offline versus online digital storytelling on the development of EFL learners' literacy skills (reading and writing). To this end, 42 lower intermediate language learners participated in the study and received process-oriented writing instruction with two different types of multimedia making software.

The results of the study primarily supported a significant effect for the online platform on the development of the participants' literacy skill. This finding features certain similarities with the findings of other studies in the literature revealing that integrating digital tools in language instruction influences the development of language literacy (e.g. Abdollahpour & Asadzadeh Maleki, 2012; Alcantud-Díaz et al., 2014; Campbell, 2012; Xu et al., 2011). This result may be attributed to the fact that digital storytelling is a powerful tool for facilitating the development of collaborative writing in language classes. The collaboration of students in writing process motivates them to take more active role in writing practice and help each other overcome the difficulties of the writing cycle. Correspondingly, this collaboration gives students the chance of reading, reviewing, and giving comments on others' works and thus their literacy repertoire develops more profoundly in comparison to when they write individually. According to Suwantarathip and Wichadee (2014), the constructive and unrestricted feedback from teachers, peers, and even internet users is very vital in alleviating students' writing problems including misspellings, wrong language use, incorrect mechanics, inappropriate writing organization, and incoherent text.

Unlike the multimedia-authoring software in which students have to search for and prepare appropriate images and audios for their story, online digital tools support students with ready-made images and audios to finalize their stories more rapidly. Therefore, students only concentrate on their writing process (Dunn, Wilson, Freeman, & Stowell, 2011) and they have more time to work on their writing skill rather than spending time on preparing the materials for the project. The reason for this finding can also be related to the interactive environment of online platform that could have influenced students' creation and discovery/cooperative learning (Sadik, 2008). In this way, while students are engaged in producing their own stories, they not only learn the art of writing a creative story but also take an active role in discovery and student-centered learning (Mayer, 2003; Miller, 2010).

The findings of this study also corroborate the theoretical consideration of the interconnection between reading and writing and that they are "complementary elements of literacy rather than separate, discrete skills" (Weigle, 2014, p. 226). Research over the past decade has focused on

investigating the relationship between language skills and how instruction in one skill can improve another skill. In case of reading and writing, it is suggested that both skills be involved in literacy and integrating teaching of reading and writing can enhance students' learning in both skills (Koon, 2008). It is found that better readers are better writers and vice versa; and that the two skills share elements of a common knowledge base as well as overlapping cognitive processing. Krashen argues that input from extensive reading influences writing ability of learners (as cited in Fitzgerald & Shanahan, 2000). When reading and writing instruction are combined, the interrelationship between achievement levels of both is possible (Stotsky, 1984). While writing functions as a way to interpret and understand the written text, reading acts as a source of comprehensible input to create a text (Weigle, 2014).

Meanwhile, it is noteworthy to mention that both online and offline programs assist students to dynamically plan and present their own learning materials (Bromberg, Techatassanasoontorn, & Díaz Andrade, 2013). The finding confirms the positive effects of digital storytelling on learning achievement indicated in various research studies done before. These studies show that digital storytelling can influence language learners' desires to learn better through promoting their motivation, autonomy, collaboration, and problem-solving skills (e.g. Alcantud-Díaz et al., 2014); oral comprehension (Heidari Soureshjani & Etemadi, 2012); speaking (Hwang et al., 2016); and collaborative writing (Elola & Oskoz, 2010).

The finding also revealed that those students who spent more time working with computers showed greater development in their literacy skills. This finding is in agreement with those of other previous studies supporting the fact that increasing the hours of using computer-based technologies enhances language learning (Taylor & Gitsaki, 2003). This finding corroborates the fact that more accessibility of digital tools results in much more English achievement and that the availability of computer at home relates to students' performance in reading and achieving higher performance scores (Attewell & Battle, 1999; Nævdal, 2007; Rahimi & Yadollahi, 2010).

One crucial point to consider is that, although the experimental group worked with online platform and they needed access to the Internet both in school and at home, they spent more time working with technology to make digital stories (mean = 2.14). The effort students of this group brought into doing the tasks can be related to the ease of using the online platform, its versatility in providing tools of making the stories, and attractive appearance of the final product in comparison to the offline program. Despite the fact that too much playing with computer has been found to negatively correlate with school performance (Gentile, Lynch, Linder, & Walsh, 2004), the educational use of digital tools is beneficial to students' academic achievement (Wenglinsky, 1998). Therefore, the computer use for educational purposes should be in focus.

6. Conclusions

The findings of the current study mainly revealed that the process of online digital storytelling allows EFL learners to develop their language literacy and spend more time on working with technology for instructional purposes. Reading and writing were mainly promoted through digital storytelling especially with working collaboratively using an online platform.

As the main objective of the educational technology research, raising students' awareness of how to use technologies to the benefit of their achievement was a matter of great importance in the current study. As the findings showed, this goal can be reached by choosing suitable teaching materials and a pedagogically sound methodology integrated into an appropriate technology-based learning environment that inspires active learning through collaboration and cooperation. All throughout the study, students took advantage of peer- and self-assessment as well as constructive dialog with their teachers and groupmates. Moreover, the act of using online digital storytelling enabled students not only to have a better understanding of technological operations and skills such as searching materials on the internet, using different applications/software, and online communication, but also to promote their language and communicative skills which may prepare them for the job

market of the 21st century (Robin, 2008). They experienced one of the most challenging jobs of language learners, writing as a process, throughout expressing themselves by telling stories about what they liked with teamwork and collaboration.

The promising results of this study provide an initial perspective for EFL researchers and teachers to apply digital storytelling efficiently in language instruction. By engaging students in the process of writing through digital storytelling, their learning experience becomes more attractive and motivational where they can express their ideas and experiences freely. This can be done, based on the findings of this study, using online platforms more efficiently, while accessing the internet seems not to be a major problem even in developing countries.

While the present study assessed the development of writing and reading skills through offline and online storytelling, further studies are required to explore probable impacts of digital storytelling on the aural and oral skills using different technologies. Moreover, since the sample included only young female students, the current study can be replicated using other types of learners (adults, males, bilinguals, etc.) to compare the potential influence of digital storytelling on the development of their language skills. Triangulation of the quantitative data of the current study with qualitative techniques of data gathering and analysis such as observation, interviews, and log writing is also recommended.

This study focused on casting light on the effectiveness of two types of digital storytelling, that is, offline and online digital storytelling among young language learners in an EFL context. Nonetheless, the results of this study cannot be conclusive and more studies including other mediating factors such as personality traits (attitudes, motivation, anxiety, etc.), contextual factors (secondary vs. tertiary education; private vs. public schools; EFL vs. ESL settings, etc.), and language-related variables (language proficiency, bilingualism, willingness to communicate, etc.) are suggested.

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