

A Program Based on English Digital Stories to Develop the Writing Performance and Reflective Thinking of Preparatory School Pupils

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This study aimed to investigate the effect of a program based on English digital stories on second-year preparatory pupils' writing performance and reflective thinking. Two writing performance tests (pretest and posttest) as well as a reflective thinking test were prepared by the researchers. Two 2nd-year intact classes from El Sadat Prep School for Girls constituted participants of the study: one as a control group (N=32) and the other as an experimental group (N=30). All participants were pretested on writing performance and reflective thinking and no significant differences were found between the control group and the experimental group. This ensured that the two groups were fairly equivalent on writing performance and reflective thinking before the treatment. The experiment lasted for three months. During this period, pupils of the experimental group created their digital stories individually, presented them in front of their peers, and reflected on their experience while creating and presenting their own digital stories. On the completion of the experiment, all participants were posttested. An independent samples t-test confirmed that a statistically significant difference existed between the mean score of the control group and that of the experimental group ($t=7.738$, $p<0.05$) in writing performance posttest while no significant difference existed between the mean score of the control group and that of the experimental group ($t=1.920$, $p>0.05$) in reflective thinking posttest. It was concluded that digital stories had a significant effect on the writing performance, but not on the reflective thinking, of 2nd-year prep school pupils. Based on these results, it was recommended that: (1) digital stories should be used in teaching EFL writing at the prep stage, (2) pupils should be given enough opportunities to use modern technology in their learning, (3) teachers should encourage pupils to take part in the evaluation of their writing performance, and (4) teachers should give pupils writing activities related to their interests.

Key Words: Digital Stories, Writing Performance, Reflective Thinking, Preparatory School Pupils, EFL, ESL

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I. Introduction

English has been widely acknowledged as an international language. Therefore, many non-English speaking countries promote English proficiency as an effort toward modernization and internalization. Writing plays an important role in EFL personal and professional lives (Corgill, 2008) and is considered one of the most important skills that EFL students need to develop. Therefore, command of good writing is increasingly seen as vital to equip learners for success in the 21st century because the ability to communicate ideas and information effectively through the global digital network is crucially dependent on good writing (Hyland, 2003).

Also, primary to good writing is good thinking (Abdel-Hack & Helwa, 2014). As Olson (1984) explains, writing is one of the most challenging of thinking experiences. The relationship between thinking and writing is quite clear; they are recursive processes, one has to go back to go forward (Anwar, 2002). Reflective thinking is one kind of thinking that has been given great attention recently (El-Hadidy, 2007). It is a vital element in any form of learning (Boud, Keogh, & Walker, 1985). According to Linlin (2006), reflection in the classroom allows learners to make connections between new learning and previous experiences. He adds that reflective activities help make thinking more visible, enable students to learn from one another and to gain greater insights into their own thinking and learning processes. In addition, reflective thinking has a significant place in evaluating the teacher and the student (Coşkun, 2010) especially in the information age where there is a great danger that we will become mindless consumers of information from a bewildering variety of sources but not able to discriminate or make judgments about its reliability or validity. This raises the need to develop our skills of selection, judgment, interpretation, criticism, and argument in order to become active learners (Scales, 2013).

II. Problem of the Study

Despite the importance of writing performance and reflective thinking for preparatory school pupils, the researchers believe that preparatory school pupils in Suez have some difficulties in these aspects. This belief was based on the following:

- A. The third researcher's experience as an EFL teacher at some of Suez Governorate's preparatory schools
- B. The results of many studies that investigated the writing performance and/or reflective thinking of Egyptian pupils at preparatory stage (e.g., Abd Al-Fattah, 2012; Abdul Azeez, 2012; Abou Zeid, 2012; Ahmed, 2008; Al-Sagheer, 2013; Bahig, 2011; Ebedy, 2013; Elbasel, 2012; El-Hamly, 2013; El-Kady, 2011; El-Serafy, 2008; Kamel, 2010; koraney, 2009; Madkooor, 2010; Shafee, 2011; Youssif, 2010)
- C. The results of a pilot study conducted by the researchers on a sample of second-year preparatory school pupils at Nabaweya Mousa Preparatory School for Boys and Girls

These difficulties were thought to be due to the ineffectiveness of the teaching and assessment techniques or methods used. Consequently, the researchers looked for a solution for this problem. They surveyed recent instructional and assessment techniques hoping that they would find one that might help improve the writing performance and reflective thinking of these pupils. Many methods were surveyed by the researchers. However, the one that caught their attention most was the digital story. Therefore, this study is an attempt to find out the effect of a program based on English digital stories on developing second-year preparatory pupils' writing performance and reflective thinking.

III. Statement of the Problem

The problem of this study was stated as thus: There were some weaknesses in preparatory school pupils' writing performance and reflective thinking. In order to find a solution for this study problem, the researchers posed the following main question: *How can preparatory school pupils' writing performance and reflective thinking be developed?* Upon that question, the following sub-questions could be formulated:

- A. How can preparatory school pupils' writing performance be developed?
- B. How can preparatory school pupils' reflective thinking be developed?

The researchers surveyed recent teaching and assessment techniques and found that the digital story is an innovative one which might have the potential to solve the problem of the present study. Therefore, the following questions were formulated:

- A. What is the effect of digital stories on preparatory school pupils' writing performance?
- B. What is the effect of digital stories on preparatory school pupils' reflective thinking?

IV. Delimitations of the Study

The present study was delimited to the following:

- A. Sixty-two preparatory school pupils enrolled at the second year at El Sadat Preparatory School for Girls, Suez Governorate.
- B. Three months during the second term of the academic year 2012-2013.
- C. Writing performance was limited to the following sub-skills: sentences (supporting details, relevance, organization, and coherence), word choice, grammar, and mechanics (spelling and punctuation)
- D. Reflective thinking was limited to the following sub-skills: analyze situations critically, express situations from multiple perspectives, use evidence in evaluating choices, introduce alternative explanations, use evidence in evaluating experiences, articulate one's own views in a fair-minded way, evaluate situations, and express a situation from a different perspective.

V. Terms of the Study

A. Digital Story

The digital story was operationally defined by the researchers as a narrative that begins with a story map and a storyboard then is converted to a one-to-three minute video that uses some combination of still images, music, text, and recorded audio narration to convey a specific topic discussed from the writer/pupil's point of view.

B. Writing Performance

Writing performance was operationally defined by the researchers as the production of written English paragraphs with acceptable ideas (supported details, relevant, organized, and coherent) and correctness (grammar, spelling, word choice, and punctuation).

C. Reflective Thinking

Reflective thinking was operationally defined by the researchers as a conscious intellectual process through which an individual explores and evaluates his/her previous experiences and/or decisions in order to reach new understandings, appreciations, or judgments. This can be manifested in an individual's ability to: analyze situations critically, express situations from multiple perspectives, use evidence in evaluating choices, introduce alternative explanations, use evidence in evaluating experiences, articulate one's own views in a fair-minded way, evaluate situations, express a situation from a different perspective.

VI. Significance of the Study

This study may:

- A. show the feasibility of using technology in teaching, learning, and assessing writing.
- B. provide EFL teachers with two writing performance tests as well as a reflective thinking test.
- C. activate the role of pupils in the learning process throughout providing them with the chance to create their own digital stories.

VII. Review of Related Literature

Story is an ancient art and a valuable form of human expression (Soleimani & Akbari, 2013; Tolisano, 2010). It enriches readers and helps their development (Ganley & Vila, 2006). Stories have been used to teach morals and values of different cultures (Teehan, 2006) and have been around for thousands of years as a means for exchanging information and generating understanding as well as a means to share knowledge, wisdom, and values (Malita & Martin, 2010). The way to tell a story has evolved throughout history. At first, stories were told through pictures on walls. Then, stories were passed down orally from generation to generation (Behmer, 2005). Now, in the technology-rich society of the twenty-first century, a new mode of passing along stories has emerged; that is, digital storytelling (Malita, 2010b). Digital storytelling is simply considered the latest manifestation of one of humankind's oldest activities (Behmer, 2005; Ohler, 2008). The idea of digital story is based on taking advantage of the capabilities of digital media tools such as computers, video cameras, and sound recorders (McLellan, 2007; Yuksel, Robin, & McNeil, 2011) to produce original media-rich stories (Fuhler, 2010).

Digital story is sometimes referred to as digital storytelling (Fletcher & Cambre, 2009; Frazel, 2010; Miller, 2010), digital narrative (Alexander, 2011; Lovell & Baker, 2009), and student-produced digital video (Hofer & Swan, 2008; Moylan, 2010). There are many definitions of digital story, but they all coincide in pointing out that digital stories combine traditional means of telling a story with different types of digital multimedia: images, audio, and video (Gregori-Signes, 2008b). Alexander (2011) offers the California State University five-part definition of digital stories, according to which, they should: (1) include a compelling narration of a story; (2) provide a meaningful context for understanding the story being told; (3) use images to capture and/or expand upon emotions found in the narrative; (4) employ music and other sound effects to reinforce ideas; and (5) invite thoughtful reflection from their audience(s).

Digital stories are based on five general and overlapping theoretical perspectives: (a) learner-centered instruction—giving greater emphasis to the learning processes than to those of teaching, thereby placing the student center stage, in a role where he/she is plays a creative role, in an attempt at motivating the student to the full (Illera & Escofet, 2009); (b) project-based learning—

engaging learners with long-term, interdisciplinary, and learner-centered activities; (c) constructivism—viewing learners as active participants in the construction and evaluation of their learning processes and products; (d) multiple intelligences theory—allowing students to include documents and photos, along with audio and videotapes; and (e) blended learning—combining multiple delivery media that are designed to complement each other and promote learning and application-learned behavior (Singh, 2003).

There is general agreement that digital storytelling integrates meaningful stories with media (Snelson & Sheffield, 2009). Park and Seo (2009) summarize the essential characteristics of digital storytelling into four keywords: flexibility, universality, interactivity, and community formation. In the same context, López and Dominguez (2010), Lunce (2011), and Hardy and Spencer (2007) mention the following characteristics of digital stories: (a) brief and concise: with a length between 250 and 300 words; (b) simple: using a few carefully chosen images, simple titling, and voice and/or music; (c) personal: revealing something important about the storyteller; (d) respectful of others' feelings and experiences; (e) created in a spirit of collaboration and partnership; (f) credible: in order to avoid generating disinterest and boredom to the audience.

A good digital story covers all the elements of traditional stories (Bran, 2010) and combines these traditional elements with technology. In this context, Lambert (2003) has constructed a model called *Seven Elements of Digital Storytelling*. Below is a detailed list of these elements.

a) Point of view

Stories are told to make a point and should not be presented as a recitation of mere facts (Robin, 2006). The goal of the digital story is to allow the writer to experience the power of personal expression. Therefore, students' digital stories need to be constructed from their own experience and understanding and with using first-person pronoun rather than a more distant third-pronoun (Bull & Kajder, 2004). In addition, through adopting a certain point of view, the digital story reveals the writer, as opposed to offering facts about a distanced topic (Bull & Kajder, 2004).

b) Dramatic question

Simply making a point does not necessarily keep people's attention throughout a story (Lambert, 2003). For Sylvester and Greenidge (2009), a dramatic question can capture the audience's attention and help overcome the possible loss of focus of the audience (Behmer, 2005; López & Dominguez, 2010; Robin, 2006).

c) Emotional content

It can help hold the audience's attention (Robin, 2006) by dealing directly with the fundamental emotional paradigms such as love and loneliness, confidence and vulnerability, acceptance and rejection (Sylvester & Greenidge, 2009).

d) The gift of voice

Behmer (2005) assures that the storyteller's voice is unique and conveys meaning and intent in a very personal way. For Sylvester and Greenidge (2009), employing the pitch, inflection, and timbre of the storyteller's voice to narrate the story is one of the most essential elements that contribute to the effectiveness of digital storytelling. In an attempt to underline the importance of the storyteller's voice, Bull and kajder (2004) argue that many classrooms have unheard students who enter, submit work, and leave without participating in discussion, group activities, or any task that asks for their voice. They add that the process of telling a digital story allows students to record themselves narrating their own scripts and while students are doing so, their ideas are put across more clearly than in traditional stories (Bran, 2010).

e) The power of the soundtrack

Although the choice of sounds may seem something incidental, it is a key factor (López & Dominguez, 2010). The storyteller should be aware that music can play on viewers' perception of visual information (Lambert, 2003). Therefore, the soundtrack should be carefully selected because properly employed sound effects can enhance and underscore the accompanying story, adding complexity, depth, tension, and excitement to the narrative (Behmer, 2005; Bull & kajder, 2004; Sylvester & Greenidge, 2009).

f) Economy

Economy is generally the largest problem with telling a story for both novices and experienced writers (Lambert, 2003). Most storytellers do not realize that the story they have to tell can be effectively illustrated with a small number of images and video and a relatively short text. This process means consciously economizing language in relationship to the narrative (Sylvester & Greenidge, 2009). It also requires the storyteller to be sensitive not to overload the audience with too much information (Robin, 2006) and to adhere to the proper duration (Behmer, 2005).

g) Pacing

Pacing, specifically, deals with how slowly or quickly the story progresses and it is considered the true secret of successful storytelling as it determines much of what sustains an audience's interest (Behmer, 2005; Lambert, 2003; Sylvester & Greenidge, 2009). Moreover, changing pace within the story can facilitate moving the audience from one emotion to another (e.g., upbeat music can suggest urgency, action, nervousness, exasperation, or excitement while a slow pace will suggest contemplation, romanticism, relaxation, or simple pleasures) (Robin, 2006).

Compared to traditional teaching methods, digital story has distinct advantages (Malita, 2010a). It is viewed as an important pedagogical tool (McWilliam, 2009) that is appropriate for all educational levels (Koehler & Mishra, 2009) and can be used in a variety of ways (Stanley & Dillingham, 2011) giving an almost boundless spectrum of possible uses (Kibbat, 2004) and helping integrate technology into all subject areas (Teehan, 2006). This is why it has become one of the most powerful 21st-century learning processes available to teachers and students (Solomon & Schrum, 2007) as well as an active process that can produce an atmosphere of excited learning (Frazel, 2010).

Digital stories can offer all of the advantages of traditional stories and have more advantages related to the added element of using technology (Gregori-Signes, 2008a). Moreover, digital stories offer many advantages for students as well as teachers. As for students, digital story—as a pedagogical tool—is a promising instructional technology that engages students in powerful ways (Gregory, Steelman, & Caverly, 2009) because it serves as an anticipatory set or hook to capture their attention, increase their interest in exploring new ideas (Robin, 2008) and offer them a unique opportunity for a life-long learning (Fletcher & Cambre, 2009). In addition, through creating a digital story, students have a chance to learn by doing (Daniels & Bizar, 2005) which is considered a good experience for a new sense-making of who they are and what they can do (Nixon, 2008).

Moreover, some studies indicate that allowing students to create their own digital stories helps to strengthen students' higher order thinking skills (Porter, 2008; Smeda, Dakich, & Sharda, 2010; Yuksel et al., 2011) such as critical thinking skills (Abdel-Hack & Helwa's, 2014; Hug, 2011; Jakes, 2009; Kearney, 2009; Rance-Roney, 2008), creative thinking skills (Janesick, 2003; Toki & Pange 2014; Yuksel et al., 2011), reflection skills (Freidus & Hlubinka, 2002; Gravestock & Jenkins, 2009; Gregori-Signes, 2008b; Teehan, 2006), and metacognitive skills (Yuksel et al., 2011). Furthermore, digital story presents a unique opportunity for students to acquire and develop a variety of skills (Banaszewski, 2005; Di Blas, Garzotto, Paolini, & Sabiescu, 2009; Michalski, Hodges, & Banister, 2005). These skills include:

- a) achievement (Conner, 2009; Hwang, Shadiev, & Huang, 2010; Teehan, 2006; Malita, 2010a; Sadik, 2008) and motivation and engagement in the learning process (Afrilyasanti, 2011; Di Blas et al., 2009; Gregori-Signes, 2008b; Hofer & Swan, 2008; Hug, 2011; Jakes, 2009; Raymond, 2008; Sadik, 2008);
- b) originality, imagination, and analytical skills (Janesick, 2003; Leopold, 2010; Robin & Pierson, 2005; Solomon & Schrum, 2007; Tolisano, 2010);
- c) self-expression (Lovell & Baker, 2009; Malita, 2010b; Snider, 2008; Stanley & Dillingham, 2009);
- d) self-confidence (Cooper, 2005; Gregory et al., 2009; Hughes & Robertson, 2010; Sadik, 2008; Stanley & Dillingham, 2009) and self-esteem (Hughes & Robertson, 2010; Meadows, 2003; Stanley & Dillingham, 2010);
- e) communication skills (Beach, Clemens, & Jansen, 2009; Botturi, Bramani, & Corbino, 2012; Malita, 2010b; Riddle, 2009; Robin, 2008; Wallace, Stariha, & Walberg, 2004) while working collaboratively (Behmer, 2005; Leng, 2010; Stanley & Dillingham, 2009) to provide a window into understanding the thoughts and feelings of others (Blagojevic, Chevalier, MacIsaac, Hitchcock, & Frechette, 2010) and to create a class bond through shared experiences (Sadik, 2008);
- f) cultural understanding (Solomon & Schrum, 2007), tolerance (Malita, 2010b), intergenerational communication (Smeda et al., 2010), and social interaction (Sadik, 2008);
- g) technology skills (Banaszewski, 2005; Gregory et al., 2009; Lovell & Baker, 2009; Shelly, Cashman, Gunter, & Gunter, 2008; Sweeney-Burt, 2014; Toki & Pange, 2014; Visnjic, 2009);
- h) traditional literacy skills (Kearney, 2009; Ohler, 2008; Sylvester & Greenidge, 2009) as well as new types of literacy skills, such as information literacy, multicultural literacy, multimedia literacy, visual literacy, technology literacy, media literacy, and performance literacy (Hathorn, 2005; Jakes, 2009; Leopold, 2010; Ohler, 2005-2006; Riddle, 2009; Robin, 2006; Stanley & Dillingham, 2010);
- i) a clearer sense of self (Landry & Guzdial, 2006) through reinforcing and encouraging students' self-development (Gregori-Signes, 2008a), self-value (Sadik, 2008), self-representations (Educause Learning Initiative, 2007; Visnjic, 2009), self-review (Hug, 2011), self-efficacy (McQuiggan, Rowe, Lee, & Lester, 2008), and self-evaluation (Gregori-Signes, 2008b);
- j) a sense of self authoring and agency (Lowenthal, 2009) as well as a sense of community belonging through positive feedback (Hughes & Robertson, 2010);
- k) good inquiry skills (Ganley & Vila, 2006; Hathorn, 2005; Solomon & Schrum, 2007; Teehan, 2006);
- l) specific abilities such as task-completion, problem solving, team working, and critical evaluation of students' own work, as well as the work of others (Di Blas et al., 2009; Gregori-Signes, 2008b; McDonnell, Lloyd, & Valkenburg, 2004; Riddle, 2009; Robin, 2008; Yuksel et al., 2011); and
- m) conceptual skills, research skills, artistic skills, organization or planning skills, interview skills, inductive reasoning skills, decision-making skills, interpersonal skills, and assessment skills (Behmer, 2005; Czarnecki, 2009; Gregori-Signes, 2008b; Hug, 2011; Janesick, 2003; Leopold, 2010; Robin, 2006; Solomon & Schrum, 2007; Teehan, 2006; Yuksel et al., 2011).

In addition to the above-mentioned advantages, digital stories assume more advantages devoted specifically to EFL learners. Some studies (e.g., Abdollahpour & Maleki, 2012; Afrilyasanti, 2011; Erben, Ban, & Castañeda, 2009; Gregori-Signes, 2008b; Miller, 2010; Rance-Roney, 2008; Rance-Roney, 2010; Tendero, 2006; Verdugo & Belmonte, 2007) examined the benefits of digital stories for EFL learners and found that producing digital stories can:

- a) help to address all language skills quite effectively (Cennamo, Ross, & Ertmer, 2010) such as: writing, reading, listening, and speaking (Bran, 2010; Miller, 2010; Yuksel et al., 2011) as EFL students are able to practice these skills through engaging in authentic tasks which are more playful and useful than they used to do before (Blanton & Menendez, 2006; Hwang et al., 2010).
- b) engage EFL students in creating, using, and perfecting all of their emerging language skills in remarkable synergy (Rance-Roney, 2008).
- c) provide EFL learners with the cultural background, literacy skills, and language development needed to access challenging academic text (Rance-Roney, 2010).
- d) give EFL students opportunities to notice their errors and correct their English (Erben et al., 2009).
- e) allow EFL students to learn independently and give the learners a critical sense of control over the English language with the potential of gaining voice in the midst of academic discussion (Rance-Roney, 2010).
- f) help students to understand English composition courses and get higher grades (Gregory et al., 2009).
- g) significantly improve the written reproduction ability of the learners (Abdollahpour & Maleki, 2012).
- h) help learners to acquire vocabulary and grammar (Erben et al., 2009; Stanley & Dillingham, 2009).
- i) maximize opportunities for EFL learners to interact with others in English (Erben et al., 2009).
- j) encourage students to invest more time in planning, revising, and producing their digital stories than they typically invest in traditional composition assignments (Maddin, 2013).

Digital story can also offer some benefits for teachers. For example, it is considered as a powerful teaching tool (Matthews-Denatale, 2008) that serves teaching purposes other than those based on testing and skills (Alexander, 2011). Teachers can use digital stories in two meaningful ways to support their teaching by deciding whether to create the digital stories by themselves or have their students do that (Robin, 2006; Yuksel et al., 2011). Teacher-created digital stories may help teachers to better understand the learning process as they live in what their students are learning (Watts, 2009) as well as become confident, active, and visible users of digital tools (Solomon & Schrum, 2007) which may increase their self-efficacy in educational technology and disposition toward change with regard to new technological approaches to teaching (Heo, 2011). It might also enhance their reflection on practice (Yuksel et al., 2011) through providing the possibility of seeing and hearing the teaching performance, rather than simply reading about it (Tendero, 2006) as teachers can utilize digital story to document and present their experiences to other teachers and administrators (Cennamo et al., 2010). Therefore, they can be used as teaching/self-study materials in or outside the classroom (Gregori-Signes, 2008b).

Although there are numerous advantages of digital stories (Bran, 2010), some downsides have also been identified (Thorpe, 2004). A number of challenges arise with the use of digital stories (Kearney, 2009; Sylvester & Greenidge, 2009) for teachers (Snider, 2008), students (Robin, 2006), and schools (Kaliamoorthy, 2009). Digital media can seem very complicated for educators (Riddle, 2009). Banaszewski (2005) points out that teaching the actual story process within digital storytelling presents several challenges for teachers as it demands a combination of creative writing, basic film conventions, visual and media literacy as well as the technical facility with the technology. Adopting the same point of view, Sadik (2008) confirms that teachers, in general, struggle to incorporate computer applications into regular classroom instructional practices to enhance learning due to the ineffective and inappropriate training as well as the lack of vision of technology's potential for improving learning.

On the other hand, a number of limitations may face students while working on digital storytelling projects (Hofer & Swan, 2008; Robin, 2006). For example, Kaliamoorthy (2009) claims

that getting pupils on task using the computers is challenging. This was also found in Sadik's (2008) data collected from teachers which revealed that while using digital stories, students faced many technical and computer difficulties and needed more technical assistance. However, Hughes and Robertson (2010) found that many students might find digital story difficult not because of the technology, but because the medium forced them to think about what they wanted to say before they could really start. Despite the challenges and difficulties facing the adoption of digital stories, with proper planning and forethought, these difficulties can be minimized and addressed (Lowenthal, 2009; Sylvester & Greenidge, 2009).

Although there are many process steps outlined to guide students, digital storytelling is not a precise lock-step linear process; that is, it is a creative process that sometimes takes its own path (Adobe Systems Incorporated, 2008). Matthews-DeNatale (2008) indicates the importance of building periodic progress reviews into the assignment timeline in order to allow teacher to offer feedback that will help students create a digital story that is both intellectually and visually engaging. Therefore, he recommends dividing the assignment into the following phases:

- a. Brainstorming: Students share their ideas with others in the class, sometimes called a story circle. Peers and instructor ask questions and help each other refine their ideas.
- b. Scripting: Students author a 200-300 word script that will become the audio for their stories. Peers and instructor can ask questions and provide feedback on the script as well.
- c. Storyboarding: Using a comic strip format, students show how the words in their scripts will synchronize up with the images they plan to use in their stories. Time permitting is another opportunity for feedback.
- d. Recording and Editing: This is where the piece comes together.
- e. Fine Tuning and Titling: Students add transitions, titles, and credits.
- f. Burning: Students export their projects and burn them to CD or DVD.
- g. Sharing: It is important to schedule a final screening so that students can present and discuss their work. This is where some of the most important reflective learning takes place.

Regarding writing performance, storytelling in any form is a natural way for students to build literacy skills (Gere, Kozolvich, & Kelin, 2002) and is a mechanism used to implement these literacy skills in the classroom (Behmer, 2005). Therefore, stories have always had a place in academic writing classes (Fields & Diaz, 2008) where educators utilize them as a means for students to implement the writing process (Behmer, 2005). This is what Cody and Wagner's (2008) study proved. The study indicated that oral storytelling improves students' writing in the areas of organization, style, and content. Concerning digital story, it is easy to use for writing practice (Reinders, 2011) because while creating digital stories, students can participate in the writing process (Standley, 2003) through putting much more time and energy into writing scripts for their stories (Raymond, 2008) and, thus, engaging with a technology-supported writing community (McWilliams, Hickey, Hines, Conner, & Bishop, 2011). Maddin (2013) confirms that digital storytelling is mirroring the writing process. Therefore, Sandars, Murray, and McPherson (2009) indicate that the process of creating digital stories is primarily a process of writing. In this respect, Lambert (cited in Gregory et al., 2009) claims that seven elements of digital storytelling connect with the traits of effective writing: point-of-view with organization, a dramatic question with ideas and content, emotional content with voice, voice with word choice, pacing with sentence fluency, economy with conventions, and a sound track with presentation.

In order for students to improve their writing, they need the same strategies and writing activities to compose and revise that professional writers experience during their writing process

(Borgese, Heyler, & Romano, 2012). Therefore, digital stories have proven to be a powerful medium for students (Coventry & Oppermann, 2009) as they invite students to use the same analytic tools that professional writers use to better understand their own work and plan for its improvement (DeVoss, Eidman-Aadahl, & Hicks, 2010). In this respect, Miller (2010) indicates that writing is paramount in creating a digital story. Similarly, Kajder, Bull, and Albaugh (2005) explain that the first step in creating digital stories is writing an initial script and creating a storyboard before working with the technology. In addition, Xu and Ahn (2010) as well as Xu, Park, and Baek (2011) found that digital storytelling can be used effectively in classroom settings as a way of teaching writing. Therefore, Suyeyasu (2010) assures that the process of making a digital story has the capacity for developing student skills in writing and composition. This is consistent with the results of Abdel-Hack and Helwa's (2014) study which concluded that digital storytelling is a suitable tool to improve EFL majors' narrative writing skills. They clarified that through using digital stories, students were able to describe their writing strategies such as planning their writing, reference checking in terms of grammar and spelling, and making sure their writing would convey the meaning they intended. They were also able to exhibit their writing abilities in using complex sentences, ideas, and opinion expression.

Moreover, some other studies (e.g., Banaszewski, 2005; Behmer, 2005; Cennamo et al, 2010; Dogan & Robin, 2009; Michalski et al., 2005; Naccarato, 2011; Sandars, 2009a; Sylvester & Greenidge, 2009) suggest that digital stories have many benefits in the field of writing performance. Examples of these benefits include:

- a) engaging all students in meaningful writing activities (Stephens & Ballast, 2011) such as: researching, story boarding, revising, adding or deleting, rewriting, condensing, drafting, grouping, and sequencing (Cennamo et al, 2010; Hughes & Robertson, 2010; Stojke, 2009; Tolisano, 2010) to help them develop their writing skills (Banaszewski, 2005; Erkaya, 2005; Leopold, 2010; Meadows & Kidd, 2009; Michalski et al., 2005; Ohler, 2005-2006; Saunders, 2014; Shelly et al., 2008; Stojke, 2009; Yuksel et al., 2011);
- b) helping struggling writers compose more strategically and reduce overt weaknesses in conventions such as: spelling, capitalization, and handwriting (Sylvester & Greenidge, 2009);
- c) limiting some drawbacks of writing with physical tangible tools like pen and paper (Di Blas et al., 2009);
- d) reworking students' writing into a movie which probably lead the classroom to soar in an engagement for writing (Hicks, 2009);
- e) providing teachers with tangible examples of students' writing that will help them in assessment (Lapp, Flood, Brock, & Fisher, 2007);
- f) providing a truly engaging learning experience which blends writing, technology, and emotion (Malita, 2010b) through a wide range of playful, low-stake opportunities to brainstorm, freewrite, draft, compose, and edit (with text, graphics, sounds, and still and moving images) using computers, digital tools, communication technologies, and network spaces to improve learners' skill and flexibility as writers (DeVoss et al, 2010, p. 58);
- g) reducing students' tension about writing (Daniels & Bizar, 2005) through providing an alternative conduit of expression (Sylvester & Greenidge, 2009) which empowers reluctant writers and make everyone want to write (Miller, 2010);
- h) giving students the chance to write for a real audience —a larger audience other than the teacher— and therefore they can: (a) understand that the main goal of writing is to communicate a message to an audience (Daniels & Bizar, 2005), (b) write differently (Hamilton, 2009) as they see writing not as a classroom task done only for its own sake, but as a tool for which they find many uses in their lives (Frazel, 2010), and (c) be much more motivated to write and tend to do their best in writing (Sylvester & Greenidge, 2009); and

- i) allowing teachers to guide students through the writing process in order to help them develop strategies for generating and refining ideas (Hyland, 2003) through multiple drafts, rewrites, and script preparation (Solomon & Schrum, 2007).

Concerning reflective thinking, story has been used long ago to promote reflective practice (Thorpe, 2004) as it provides a powerful mechanism to challenge existing boundaries and reflect on learning (Curwin & Adeseko, 2010). McDrury and Alterio (2003) point out that storytelling and reflective process are interrelated through three stages: 1) inner discomfort or surprise; 2) events examined in detail; and 3) outcomes—decision to change or gain knowledge through reflection. Recently, digital storytelling has been used as a means of facilitating (Erstad & Silseth, 2008; Ohler, 2008; Ramage, 2007) and developing reflective skills (Davies, 2008) as it fits well into the tradition of reflective practice (Hlubinka, 2003). Digital stories offer both students and teachers the opportunity to reflect (Gagnon & Collay, 2006). For students, digital stories were found to prompt their reflective thinking in two different manners. On one side, digital story—as a blended learning mode—is an innovative and reflexive tool to assist students in developing a deeper understanding of the processes of youth transition (Lovell & Baker, 2009). On the other side, they are mediated self-representations and self-discovery which more importantly involve critical reflections on personal life experiences and events to establish their meaning and learn from them (Freidus, 2002; Kaare & Lundby, 2008; Landry & Guzdial, 2006; Sadik, 2008). In addition, when students work with digital stories they improve their reflection skills through integrating personal stories in an academic context as they can reflect on what has happened in these settings, obtain deeper insight into why events evolved as they did and develop a deeper appreciation of their experiences, their feelings, and the learning they gain as a result of their reflective endeavors (Di Blas et al., 2009; McDrury & Alterio, 2003; Yuksel et al., 2011). Therefore, digital stories are considered to be important not only to learners' reminiscence but also to their identity and ability to communicate and share experiences (Byrne & Jones, 2009).

Moreover, all the stages of digital stories appear to stimulate and engage students in reflection from the initial selection of the photographs to the final presentation of the story (Sandars et al., 2009). Therefore, the process of composing a digital story is considered a process of reflection because, through this process, students have the opportunity to do their work with conscious attention (Freidus & Hlubinka, 2002) as well as actively participate in a critique with their peers (Malita, 2010b). This can help with reflective thinking (Wakefield, 2010) and reflective learning by increasing students' ability in noticing (Jenkins & Lonsdale, 2007; McKillop, 2007) the accuracy of their work (Malita, 2010b).

Digital storytellers can increase their reflective thinking skills (Malita, 2010b) and support their learning (Deneen & Shroff, 2010) through participating in the assessment of the digital storytelling process (Garrison & Vaughan, 2008). Once students complete their digital stories, they are asked to submit a personal reflection on what they have learned (Behmer, 2005; Fuhler, 2010; Lovell & Baker, 2009). By reflecting on their work, exploring the consequences of their past decisions, and engaging in conversation, students would benefit from being able to articulate more clearly about their digital stories (Curwin & Adeseko, 2010; Hlubinka, 2003; Hughes & Robertson, 2010). Moreover, by sharing the story in the technological based society, it becomes available to global audience, which could emerge into further thoughts and reflections (Malita, 2010b). Here, digital story is a meta-cognitive practice that allows students' minds to cognitively connect their prior knowledge with new experiences through language (Garrety, 2008). Therefore, many researchers agree that digital stories provide rich opportunities for improving students' self-reflection (Gregori-Signes, 2008b; Matthews-DeNatale, 2008; Yuksel et al., 2011).

Digital stories can also facilitate the reflective thinking of teachers. In teacher education, digital stories can be used as a tool to promote inquiry and self-reflection (Wright, 2008) on

teaching experience (Yuksel et al., 2011). Garrety and Schmidt identify reflective practice digital stories as a genre that encourages teachers to apply higher-order thinking in order to grasp and synthesize more difficult educational concepts (Hughes & Robertson, 2010). In Tendero's (2006) study, the technological opportunity of creating a digital story has provided teacher assistants with multiple views of themselves as teachers through helping them to view, reflect, compose, and imagine versions of the teaching 'self'.

VIII. Hypotheses

The hypotheses of the study were:

- A. There would be no statistically significant difference between the experimental group exposed to digital stories and the control group exposed to regular classroom instruction in EFL second-year preparatory school pupils' writing performance.
- B. There would be no statistically significant difference between the experimental group exposed to digital stories and the control group exposed to regular classroom instruction in EFL second-year preparatory school pupils' reflective thinking.

IX. Method

A. Design

This study employs a quasi-experimental design. Using this design, the researchers selected two second-year preparatory classes. Then, she assigned one of them to a control group and the other to an experimental group. The two groups were pretested on writing performance and reflective thinking. During the experiment, only the experimental group received the treatment (digital stories) while the control group received regular classroom teaching. Upon the completion of the experiment, the two groups were posttested. Differences in mean score between the two groups were evaluated.

B. Participants

Two second-year classes—totaling 62 pupils—from El Sadat Preparatory School for Girls, Suez Governorate, participated in the study. Participants' age ranged between 13-14 years. One class was assigned at random to the control group (n=32) and the other to the experimental group (n=30). All participants spent at least 8 years learning EFL. They have received English writing instruction at the primary school as well as the preparatory school. They also studied computer for 4 years at both the primary school and the preparatory school.

C. Instruments

1. Writing Performance Tests

Two tests were used as pretest and posttest in order to measure pupils' writing performance before and after the experiment. Each test consisted of a composition-writing task. In this task, three topics were offered to pupils to choose two to write a paragraph on each. Each paragraph should contain at least five complete sentences. For each paragraph pupils were given five helping words. The topics were chosen to be suitable for what the pupils would practice during the semester. See Appendix A for the writing performance pretest and Appendix B for the writing performance posttest. The tests were reviewed by seventeen TEFL specialists to ensure face validity. Test retest

reliability coefficient was 0.892 for the pretest and 0.916 for the posttest. These coefficients are significant at the 0.01 level.

2. Reflective Thinking Test

The reflective thinking test was designed to evaluate the reflective thinking skills of second-year preparatory school pupils before and after administering the program. This test was used as pretest and posttest. Literature related to reflective thinking was reviewed (e.g., Abdel Wahab, 2005; Al-Baaly, 2006; El-Hamly, 2013; Galal, 2013; Hamid, 2011; Koraney, 2009; Madkoor, 2010; Zakareya, 2010). Based on this literature review, a list of 14 reflective thinking skills were collected and put in a scale of importance (very important, important, & not important) in relation to writing. Such a list was delivered to a jury in the field of TEFL to determine which of these skills were important and appropriate for preparatory school pupils. The most important eight skills were finally chosen for the test. These skills are listed below:

- a) analyzing situations critically
- b) expressing situations from multiple perspectives
- c) using evidence in evaluating choices
- d) introducing alternative explanations
- e) using evidence in evaluating experiences
- f) articulating one's own views in a fair-minded way
- g) evaluating situations
- h) expressing a situation from a different perspective

The final test was called the Reflective Thinking Test (RTT) (see Appendix C). In this test, pupils were required to answer eight reflective questions on two separate situations. These situations were: a) changing your school (consisting of 5 reflective questions); and b) quarreling with someone you like (consisting of 3 reflective questions). Pupils were required to reflect on what they liked/did not like about these situations, what they did wrong/right in these situations, how they dealt with these situations before and now as well as how these situations can affect their behavior in similar situations. Criterion-related validity was calculated by correlating scores on the RTT to their scores on Kember et al.'s (2000) Reflective Thinking Questionnaire (RTQ). The correlation coefficient was 0.946 (significant at the 0.01 level).

D. Scoring

1. Scoring Writing Performance

The researchers developed a writing performance scoring rubric in order to score the answers of the participants of the study to the writing performance pretest and posttest. In this rubric, a total of eight marks was divided among four main components: sentences (supporting details, relevance, organization, & coherence); word choice; grammar; and mechanics (spelling & punctuation). Each component had three levels (strong, average, & weak). The sentence component was assigned four marks (4 marks for strong, 2 marks for average, & no marks for weak). Each of the other components—word choice, grammar, and mechanics—was assigned two marks (2 marks for strong, 1 mark for average, & no marks for weak). In both the writing performance pretest and posttest, pupils were asked to write on two out of three paragraphs (10 marks for each paragraph); therefore the total of marks in each of the writing performance pretest and posttest was 20 marks. A jury of specialists in the field of TEFL was asked to judge the distribution of the 10 points among the components of the writing performance scoring rubric. Reviewers' suggestions were taken into consideration. See Appendix D for the final version of the rubric. To measure the reliability of the

writing performance scoring rubric, this rubric was compared to the impressionistic marking method. Three raters marked pupils' paragraphs according to a single grade based on their general impression of the paragraphs. After two weeks, the same raters were asked to mark copies of the same scripts using the rubric devised by the researchers. One-way analysis of variance comparing the mean scores of the three raters' estimations using the impressionistic method revealed significant differences among the three raters ($f=6.159$, $p<0.05$). This result shows that there are significant differences among the marks of the three raters when they followed the impressionistic method.

2. Scoring Reflective Thinking

The researchers developed a rubric in order to score the answers of the participants of the study to the reflective thinking test. In this rubric, eight marks were divided among the eight skills chosen for the reflective thinking test (mentioned earlier in the description of the reflective thinking test). Each of the three raters was requested to read each pupil's answer to the reflective thinking test and give it a score out of eight, one score for each question. The scoring rubric included a description of each of the skills covered in the questions of the test. Therefore, each rater would give one score for each answer if it reflected the respective skill. A jury of specialists in the field of TEFL was asked to judge the distribution of the 8 marks among the components of the reflective thinking scoring rubric. Reviewers' suggestions were taken into consideration. See Appendix E for the final version of the rubric. To measure the reliability of the reflective thinking scoring rubric, this rubric was also compared to the impressionistic marking method. One-way analysis of variance comparing the mean scores of the three raters' estimations using the impressionistic method revealed significant differences among the three raters ($f=4.788$, $p<0.05$).

E. Materials of the Study

A proposed program, the Digital Storytelling Writing Program (DSWP), was designed by the researchers to be used as the main material of the present study. The program uses the writing process and the steps of creating digital stories in order to teach writing to second-year preparatory school pupils.

1. Description of the DSWP

The DSWP is a program designed for second-year preparatory school pupils. Through the study of digital story writing, learners would utilize skills of writing performance and reflective thinking. Training sessions followed the stages of the writing process: pre-writing, writing, revising, editing, and publishing. All these stages would be implemented via the use of digital stories. The layout of the DSWP includes: a) aims of the program; b) content of the program; c) teaching strategies; d) teaching aids; e) activities; and f) evaluation.

a. Aims of the DSWP

Generally, the DSWP aimed to:

- improve the writing performance of second-year preparatory school pupils.
- improve the reflective thinking of second-year preparatory school pupils.

b. Content of the DSWP

The DSWP consists of 21 sessions. After surveying the literature related to building writing programs (e.g., Abdel Salam, 2004; El-Sakka, 2011; El-Shami, 2011; Ibrahim, 2003; Mohammed, 2009) as well as some reflective thinking studies (e.g., Abdel Wahab, 2010; Al-Saleem, 2009; Barakat, 2005; Hamid, 2011; Koraney, 2009; Madkour, 2010; Zakareya, 2010), the researchers decided on the content of the program. The content would be introduced in approximately 37 hours that would be distributed along eleven weeks, two sessions per week. The program was intended to be an intensive program.

c. Teaching Strategies of the DSWP

The instructors/researchers used the direct method in teaching writing to the learners. Through using the stages of the writing process along with the steps of creating digital stories, the learners wrote several individual digital stories and presented them in front of their other colleagues.

d. Teaching Aids of the DSWP

Many teaching aids were used during the program such as: a) computer connected to the internet, other computers, data show, whiteboard, scanner, microphone, web-camera, digital camera, mobile phone, USB cable, and USB flash memory.

e. Activities of the DSWP

The activities were divided into in-class activities and home activities (A detailed description of the activities is introduced in the sessions of the program in Appendix F). Most of the activities were about writing stories. Some other activities were about reflective thinking as well as instructor-, self- and peer-editing.

f. Evaluation of the DSWP

Both types of evaluation (formative and summative evaluation) had taken place. The formative evaluation was done during the program after each session to measure to what extent each session's objectives had been reached. As for the summative evaluation, it was performed at the end of the program to measure the size of improvement in the learners' writing performance and reflective thinking.

2. Validity of the DSWP

To decide the validity of the program, it was submitted to a jury of TEFL specialists to judge: (1) the clarity of the objectives, (2) the appropriateness of the suggested program for second-year preparatory pupils, (3) the academic verification of the content of the program, (4) the consistence of various activities and procedures with the overall design of the program, (5) the pertinence of objectives of training sessions to the overall goals of the program, and (6) the overall suitability of the training program. Some reviewers gave recommendations concerning some topics* of the digital stories as well as some tasks and activities. Others gave suggestions concerning the time of each session. All those suggestions and recommendations were taken into consideration during modifying the program. See Appendix G for the jury members as well as Appendix F for the final version of the program.

* Topics were chosen by the researchers from the content of second-year preparatory school English Pupils' Book (Hello!).

F. Procedures

The experimental procedures of the present study were carried out during the second semester of the 2012-2013 academic year in four successive stages: 1) pretesting, 2) setting the scene, 3) implementing the DSWP, and 4) posttesting. These stages are described below.

1. Pretesting

As soon as the second term of the 2012-2013 academic year began, the researchers randomly chose two second-year classes (one as a control group consisting of 32 pupils and the other as an experimental group consisting of 30 pupils) from El Sadat Preparatory School for Girls. Before being exposed to the DSWP, participants were pretested in writing performance as well as reflective thinking using the writing performance and the reflective thinking pretests developed by the researchers. The purpose was to determine the initial level of the two groups (control & experimental) in the dependent variables (writing performance & reflective thinking).

After being pretested, an independent samples t-test was used in order to calculate the differences between the mean score of the two groups on the pretests of writing performance and reflective thinking. See Table 1 for the difference between the two groups on the writing performance pretest, Table 2 for the difference between the two groups on the reflective thinking pretest

Table 1. Independent Samples t-test for the Difference between the Means of the Scores of the Control and Experimental Groups on the Pretest of Writing Performance

Group	N	Mean	Standard Deviation	t-value	Probability.
Control	32	4.823	4.437	0.596	Non-significant
Experimental	30	5.534	4.951		

Table 2. Independent Samples t-test for the Difference between the Means of the Scores of the Control and Experimental Groups on the Pretest of Reflective Thinking

Group	N	Mean	Standard Deviation	t-value	Probability
Control	32	2.5103	1.714	0.865	Non-significant
Experimental	30	2.8773	1.621		

Tables 1 and 2 show that the control and experimental groups were fairly equivalent on writing performance ($t=0.596$, $p>0.05$) and reflective thinking ($t=0.865$, $p>0.05$) before the treatment.

2. Setting the scene

The idea of digital stories is based on maximizing the use of the digital tools such as digital cameras, microphones, scanners, and printers as well as computer software which have become feasible and low-priced today (Krismiyati, 2013). Therefore, the researchers examined many applications that could be used to create digital stories. After surveying these applications, Microsoft PhotoStory3 was selected by the researchers as the software program to be used during

the experiment. However, during the piloting period the researchers encountered a few problems. The most important problem observed by the researchers was that PhotoStory3 did not provide a proper space for writing pupils' scripts. So, the researchers surveyed other tools and found that integration between Microsoft PowerPoint and Microsoft PhotoStory3 would provide a proper solution for this problem. To help pupils create their digital stories, the researchers devoted the first four sessions of the proposed program to giving instructions and directions concerning the process of creating a digital story.

3. Implementing the DSWP

After determining the level of the two groups in the dependent variables (writing performance & reflective thinking), participants of the experimental group were exposed to the DSWP twice a week during the second semester of the 2012-2013 academic year. Following is a detailed description of the implementation of each session of the DSWP.

In the first session, the main aims of the program—improving the writing performance as well as the reflective thinking of the participants through creating digital stories—were simply explained by the instructor. After illustrating the elements of a good story and practicing analyzing a story in a story map, the instructor introduced a sample digital story to clarify the new elements which were added by the digital story. Then, each learner was asked to identify the elements of the already seen digital story. An open discussion was held in order to assure participants' understanding.

In the second session, the instructor introduced the storyboard as a second step for creating a digital story. In order to check participant s' understanding, some previously prepared activities were given to them. After distributing the second activity in Handout D (see Appendix F for details), the instructor asked each participant to set up her story map and storyboard and, then, write a short story of five to seven sentences describing the given picture.

The main question of the third session was “How can we convert a traditional story into a digital one?” In order to answer this question, the instructor explained that the process of creating digital stories would be divided into two stages: (1) using Microsoft PowerPoint and (2) using PhotoStory3. She also explained that this session would be devoted to learn how to make slides (containing still images along with the story script) using Microsoft PowerPoint. Using a data show, the instructor modeled the steps explained in Handout F (see Appendix F). She also explained to learners how to search for pictures on the Internet as well as how to locate, download, and save them to be used in the digital stories. Then, on computers available at the computer lab, the instructor asked learners to do the same steps again.

In session four, the instructor handled the second stage of creating digital stories, using PhotoStory3. On the data show, the instructor explained the PhotoStory3 program step by step. She also clarified that the images, prepared by learners during the previous session, would be used to complete the digital story creation process. In front of the participants, the instructor modeled how to use microphones to record the narration of the stories with her own voice. Then, she asked participants to redo all the steps again on their computers in order to check their ability to complete the project alone.

As for session five, the instructor explained what reflective thinking is, how it is important for our life, and how we sometimes do it naturally without realizing that we are thinking reflectively. Furthermore, the instructor illustrated how to use reflective thinking to assess digital stories. On the whiteboard, the instructor demonstrated the three main points for assessing digital stories which were: a) the outer form of the digital story (good and bad technical points in the

story); b) the insider content of the digital story (right and wrong points in using language, tense, punctuation, etc.); and c) what lessons each one of them learned while creating the digital story. Then, the instructor introduced the items of the peer-assessment checklist (see Appendix H) as well as the questions in the pupil's reflection sheet (see Appendix I) to participants and asked them to evaluate some digital stories.

The topic of the first digital story—*Friends and Neighbours*—was introduced in the sixth session. After explaining the task to learners, the instructor asked them to determine whether to write their stories about a “friend” or a “neighbour”. She provided learners with copies of Handouts J & K to help them during writing, revising, and editing their stories. Handout J is a grammar review and Handout K includes some helpful vocabulary (see Appendix F). On the whiteboard, the instructor wrote participants' brainstormed ideas. Then, she reminded learners to start preparing their story maps. The instructor gave feedback on some of their story maps through discussing good points as well as points which needed more work.

The completion of storyboards and collecting the material needed for their digital stories were covered in the seventh session. First, on the whiteboard, the instructor simplified how learners would fill in their storyboards in order to provide enough visual detail and to give an overall impression of what would happen in the story and/or what the general framing would look like. After completing their storyboards, learners were asked to create folders in their names on the computers and to start collecting their materials (photos, drawn pictures, downloaded images, etc.) and save them in their own folders. Then, the instructor asked them to start creating the slides of their digital stories with using the Microsoft PowerPoint (2007) tutorial. She also devoted extra time to help learners who faced problems while collecting their digital materials.

The instructor started the eighth session with revising learners' work, giving feedback, and offering help to those who did not finish their slides. Then, she asked learners who already finished to convert the PowerPoint presentation into JPEG images and to complete creating their digital stories using PhotoStory3 with the help of a tutorial. In the fourth step, *Narrating your Pictures and Customizing Motion*, the instructor drew learners' attention that this step needed quietness and silence from other learners and also needed accuracy from the learner who was recording her own voice. Therefore, the instructor asked learners to practice narrating their stories as much as they could before starting to record their narrations. She helped learners who faced difficulties in pronouncing difficult words. She also clarified that the narrator's voice was what made the story interesting. Therefore, learners had to record the narration as a performance, allowing the audience to hear the personal content and emotion inflected in the voice. Finally, the instructor asked the learners to save their digital stories.

In the ninth session, the instructor displayed learners' digital stories one after the other. After displaying each digital story, learners were asked to assess it using the Peer Assessment Checklist (see Appendix H). In the meantime, the instructor assessed the learner's digital story using the Teacher Evaluation Rubric (see Appendix J). At the end of the session, the instructor distributed copies of the Pupil's Reflection Sheet (see Appendix I) and asked learners to give honest answers to the questions on the sheet which dealt with how they felt about the experience of creating their first digital story, especially after viewing their digital stories in front of their colleagues and after watching their other colleagues' digital stories.

Through all the next sessions—from the 10th to the 21st, the same method of teaching was followed in creating digital stories. (see Appendix F for detailed sessions' procedures). The topics of the three remaining digital stories were:

- *A journey to/in the sea*, in which learners were asked to imagine themselves in a journey to the seashore or in a journey underwater of the sea and to write a short story about how this journey would be.
- *A day to play my favorite sport*, in which learners were asked to imagine themselves spending a day playing their favorite sport and to write a short story about how this day would be.
- *My dream*, in which learners were asked to imagine themselves having a dream and to write a short story about what this dream would be.

4. Posttesting

Upon the completion of all the instructional sessions, posttests of writing performance and reflective thinking were administered to participants in the two groups of the study.

X. Statistical Analyses

To test the first hypothesis of the study which stated that “there would be no statistically significant difference between the experimental group exposed to digital stories and the control group exposed to regular classroom instruction in EFL second-year preparatory school pupils’ writing performance.”, both the control and the experimental groups’ mean score on the writing performance posttest were compared using an independent sample t-test. Results are shown in Table 3, below.

Table 3. Independent Samples t-test for the Difference between the Mean Score of the Control and Experimental Groups on the Posttest of Writing Performance

Group	N	Mean	Standard Deviation	t-value	Probability
Control	32	4.239	3.510	7.738	Significant
Experimental	30	13.146	5.410		

As shown in Table 3, a statistically significant difference existed between the mean score of the control and experimental groups on the writing performance posttest ($t=7.738$, $p<0.05$) in favor of the experimental group. Effect size of this difference was found to be 1.953 calculated using Cohen’s (1988) formula of pooled deviation for independent samples which states: $d = M_1 - M_2 / \sigma^*$.

To test the second hypothesis of the study which stated that “there would be no statistically significant difference between the experimental group exposed to digital stories and the control group exposed to regular classroom instruction in EFL second-year preparatory school pupils’ reflective thinking.”, both the control and the experimental groups’ mean score on the reflective thinking posttest were compared using an independent sample t-test. Results are shown in Table 16, below.

(*) d is the effect size, M_1 is the mean of scores of the experimental group on the writing posttest, M_2 is the mean of scores of the experimental group on the writing pretest, and σ is the standard deviation of either group.

Table 4. Independent Samples t-test for the Difference between the Mean Score of the Control and Experimental Groups on the Posttest of Reflective Thinking

Group	N	Mean	Standard Deviation	t-value	Probability
Control	32	2.948	1.694	1.920	Not Significant
Experimental	30	3.757	1.619		

Table 4 shows that no statistically significant difference existed between the mean score of the control and experimental groups on the reflective thinking posttest ($t=1.920$, $p>0.05$). Effect size of this difference was found to be 0.488 calculated using Cohen's (1988) formula. This result indicates that the DSWP yielded a small practical effect on second-year preparatory school pupils' reflective thinking.

XI. Results of the Study

Based on the statistical analyses performed on the data, the following results were found:

- A. A statistically significant difference existed between the mean score of the control and experimental groups on writing performance, in favor of the experimental group.
- B. No statistically significant difference existed between the mean score of the control and experimental groups on reflective thinking.

XII. Discussion of the Results

Following is a detailed discussion of the results related to the first hypothesis of the present study which stated that "there would be no statistically significant difference between the experimental group exposed to digital stories and the control group exposed to regular classroom instruction in EFL second-year preparatory school pupils' writing performance." In order to test this hypothesis, the researchers used an independent sample t-test to compare mean score of both the control group and the experimental group on the writing performance posttest. This t-test revealed a statistically significant difference ($t=7.738$, $p<0.05$), in favor of the experimental group. Therefore, the first hypothesis of the study was completely rejected. Additionally, a large effect-size was found ($d=1.953$). This result suggested that participants in the experimental group have achieved significant improvements in writing performance during the period of the experiment. Consequently, it was concluded that the DSWP has a positive effect on developing the writing performance of second-year preparatory pupils. There are several possible explanations for this finding .

The first possible explanation for this finding may be the use of story mapping and storyboarding as essential steps in creating the digital story. These two writing activities might have helped pupils improve their scripts and think carefully about what points are good in their stories and what points still need more work regarding theme and characters of the story as well as word choice, mechanics, and grammar. This explanation is assured by Ohler (2005-2006) who contends that story mapping and storyboarding are two main steps which help students to capture the story's central conflict, structure, and transformation and enable them and their teacher to assess the strength and weakness of a story while it is still in the planning stage. This is also confirmed by Cennamo et al.' (2010) claim that the processes of researching, outlining, story mapping, storyboarding, and writing a script are excellent writing activities that support the generation of high-quality products.

Another explanation for the first finding of the present study might be related to the different kinds of feedback (self, peer, & instructor) that were given to the experimental group's pupils during the program. Regarding instructor feedback, it was divided into two kinds: a) a constructive feedback during the creation process of digital stories which was intended to help pupils learn from their mistakes, develop a deep approach to their learning, and make better decisions (Mohanna, Cottrell, Wall, & Chambers, 2011) and b) an evaluative feedback after the completion of each digital story which sought to improve performance, reinforce appropriate behavior, correct deficiencies, and promote confidence (Timmreck, 2003). Regarding peer feedback, after finishing the digital stories on each topic, participants were asked to evaluate their peers' digital stories using a peer assessment checklist prepared by the researchers. This feedback might have helped learners to see their work in the eyes of their peers. It also might have helped those who were reluctant to improve their work next time. Finally, there was a great opportunity for each learner to evaluate her work—specially after seeing others' work—using the reflection sheet prepared by the researchers. This internal reflection process might have helped learners to better understand their work, realize the strengths as well as the weaknesses in their work, and develop their ideas about what they are going to do next time. This explanation is consistent with Barrett's (2009) contention that working on digital storytelling project provides feedback which creates a healthy dialog and gives the storytellers new insights into their story as well as a chance to recreate their story.

An additional explanation for the first finding of the present study might be that a sense of ownership was felt by participants while they were creating their own digital stories as they presented their work in front of their peers. This might have motivated them to improve their writing in order to gain their peers' attention as well as positive evaluation. This explanation is assured by DeVoss et al. (2010) who believe that using digital story in writing invites students to use the same analytic tools that professional writers use to better understand their own work and plan for its improvement. Also, Morra (2013) asserts that digital stories push students to become creators of content, rather than just consumers .

A further possible explanation might have been that the DSWP provided pupils with a non-threatening friendly atmosphere for writing, revising, editing and publishing their stories. They were also able to socially interact with their instructor and to collaboratively communicate with their peers. This might have encouraged those pupils to consider their instructor's as well as their peers' feedback in order to be better writers. This explanation is supported by many researchers (e.g., Hughes & Robertson, 2010; Kulla-Abbott, 2006; Nixon, 2008; Robin, 2006; Solomon, 2010). Additionally, Daniels and Bizar (2005) assert that during creating digital stories students can reduce their tension about writing. In the same stream of thought, Visnjic's (2009) digital storytelling venture provides another empirical evidence to accept this explanation as he claims that while working on this project he found that the pre-production stage turned out to be a very creative time for students. They were not under pressure to produce, but were given a chance to play with the material and intervene in it.

An additional explanation is that digital stories might have responded to participants' preferences to write in a new free way. This explanation finds evidence in some of the experimental group's participants' comments* on the DSWP which were collected by the researchers at the end of the study. For example, one pupil said "for the first time in my life, I like to write in English." Another pupil expressed her view by saying: "writing a short paragraph of five sentences was always a difficult matter for me, I never thought I could write a whole story. But writing using digital stories was so much easier." A different pupil said: "it was impossible for me to write five sentences without having grammar or spelling mistakes, but through creating my digital stories I

*Pupils' comments were written in Arabic and translated to English by the researchers.

learnt where my mistakes were and how I could fix them with the help of my teacher.” A pupil stated: “in the beginning, I was so afraid. How could I show my digital story in front of my peers? They are going to make fun of me. But after the first time, I was determined to write a good story that helped me a lot to be better.” Also one more pupil said: “arranging the pictures in a meaningful order helped me also to arrange sentences of my story in a good manner. I knew how to write good sentences. I was so happy.” Many others expressed that writing digital stories was so much fun, easy, and wonderful and that they had a great time. This explanation is further supported by some empirical studies (e.g., Dogan & Robin, 2009; Ganley & Vila, 2006; Hung, Hwang, & Huang, 2012; Leng, 2010; Lovell & Baker, 2009; Nixon, 2008; Riddle, 2009; Ryan, 2010; Sadik, 2008; Sandars et al., 2009; Tucker, 2011) who found that most participants enjoyed the process of creating a digital story, using technology, recording voice, working collaboratively, and being creative.

Another explanation may be related to the nature of the digital story itself. Being one of the new technological tools, digital storytelling might have been an attractive activity which served as a hook to capture participants’ attention and increase their interest in writing. During the program, the researchers noticed that pupils were eager to finish editing and refining their writing scripts in order to enjoy computerizing their stories with adding images, music, and narration. This explanation is also given by Robin (2006) who states that digital storytelling is a type of activity which can generate interest, attention, and motivation for the “digital generation” students in today’s classrooms (Robin, 2006, p. 4). Moreover, Di Blas et al. (2009) add that digital storytelling is an interactive multimedia technology which limits some drawbacks of working with physical tangible tools like pen and paper and fosters new forms of creativity, increasing engagement through interactivity. Similarly, Morra (2013) assures that digital stories provide opportunities for students to break free from print literacies to add deeper dimension to their work.

A more possible explanation for digital storytelling’s positive effect on writing performance is that during the creation of digital stories, pupils might have benefited from using a digital writing tool. They were able to take advantage of the software and web tools for brainstorming, organizing, and rehearsing their thoughts and ideas. They were also able to revise their writing easily through using the word processing function in Microsoft PowerPoint® and Microsoft PhotoStory3®. Therefore, they no longer had to suffer through the tedium of handwriting each draft. This explanation agrees with Blakesley and Hoogeveen’s (2012) view that digital writing offers tremendous opportunities for every writer student to support and improve his/her writing with the use of software and online applications.

A final explanation is that narrating each story with its writer’s voice might have motivated participants to improve their writing and to do their best work in order to gain the appreciation and respect of their teacher and peers (Daniels & Bizar, 2005; Frazel, 2010; Hamilton, 2009; Sylvester & Greenidge, 2009). Similarly, DeVoss et al. (2010) contend that digital storytelling extends a writer’s capacity to reach audience who will often be able to respond to his/her writing and provide feedback.

The second hypothesis of the present study stated that “there would be no statistically significant difference between the experimental group exposed to digital stories and the control group exposed to regular classroom instruction in EFL second-year preparatory school pupils’ reflective thinking.” In order to test this hypothesis, an independent sample t-test was employed to compare mean score of both the control group and the experimental group on the reflective thinking posttest. This t-test revealed no statistically significant difference ($t=1.920$, $p>0.05$). Therefore, the second hypothesis of the study was accepted. Additionally, a small effect-size was found ($d=0.488$). This result suggested that participants in the experimental group have not achieved significant

improvements in reflective thinking during the period of the experiment. Consequently, it was concluded that the DSWP does not have a positive effect on developing the reflective thinking of second-year preparatory pupils. Although this finding contradicts with the results of some previous studies that found that the composing of digital stories could be an effective reflection tool which might encourage learners' reflection and enhance the reflective thinking of primary children (Valkanova & Watts, 2007), students at higher education (Alterio & Woodhouse, 2011; Jenkins & Lonsdale, 2007; Sandars & Murray, 2009), pre-service (Robertson, Hughes, & Smith, 2012) as well as in-service teachers (Ramage, 2007), this finding may be attributed to the following possible explanations.

One of the possible explanations of this result might be the relative brevity of the experiment. Only one academic term may not be an enough period to improve the reflective thinking of the participants. It seems that it needed more time to see a significant effect of the program on those pupils' reflective thinking. This goes along with the opinions of some educators who claim that plenty of time should be provided for students to reflect when responding to inquiries (Fisher, 1998; Lin, Hmelo, Kinzer, & Secules, 1999).

Another possible explanation may be that these pupils were not accustomed to practicing reflective thinking. They have never been given any courses or classroom activities to improve it. That was obvious during the experiment of the study as most participants complained that they did not understand what to do because they have never practiced this kind of thinking before. This lack of practice may have led pupils to be confused. This explanation was confirmed by other researchers (e.g., El-Hamly, 2013; Koraney, 2009; Madkour, 2010; Shafee, 2011) who revealed that Egyptian curriculums at the preparatory stage did not give pupils the chance to practice any activities that may help to improve their reflective thinking skills.

A further explanation for the second finding of the present study may be attributed to linguistic incompetence. Feeling unable to express some of their thoughts and feelings and to give their own explanations for a particular topic in English—despite the cooperation of the researchers as much as possible—was the major problem of most of the participants. During the experiment, almost all pupils complained of being unable to answer the questions of the reflection sheet and to convey the real meaning of their thoughts in English. This might have hindered developing their reflective thinking skills.

An additional explanation is that the proposed program aimed to measure the effect of writing digital stories on the reflective thinking of second-year preparatory pupils. In other words, the main focus of the program was writing-oriented. This lack of focus on reflective thinking might have led to the poor performance of pupils in reflective thinking.

A final explanation is that asking participants to reflect only on their own digital stories and not on real situations or personal problems might have not encouraged them to improve their reflective thinking skills in a proper way. Even the topics of the digital stories revolved around topics they studied during the year and not personal matters or problems.

XIII. Conclusions

From the results of the present study, the researchers concluded that:

- A. The proposed program based on English digital stories had a significant effect on the writing performance of preparatory school pupils.

- B. The proposed program based on English digital stories did not have a significant effect on the reflective thinking of preparatory school pupils.

XIV. Recommendations

In light of the present study, the following recommendations are suggested:

- A. Digital stories should be used in teaching EFL writing.
- B. Writing constitutes a problem for most pupils. Therefore, teaching writing should be given more attention, time, and effort in EFL classes.
- C. Teaching thinking in general and reflective thinking in particular should be a part of English language curriculum in early stages.
- D. Pupils should become the centre of the learning process and should participate actively in their learning.
- E. Teachers are recommended to give pupils writing activities in which they are able to write about topics of their interests.
- F. Teachers are recommended to encourage pupils to take part in the evaluation of their actions and writing performance.
- G. Pupils should be given more opportunities to use modern learning technology (e.g., digital stories, wikis, electronic portfolios, weblogs, etc.)

XV. Suggestions for Further Research

Based on the present study, the researchers suggest the following areas for future research:

- A. A study of the effect of English digital stories on the oral skills of preparatory schools pupils.
- B. A study of the effect of digital stories on the technological skills of preparatory schools pupils.
- C. A study of the effect of English digital stories on the writing apprehension of preparatory schools pupils.
- D. A comparative study of the relative effectiveness of creating digital stories and watching digital stories in developing the creative thinking of EFL students.
- E. A study of the effect of English digital stories on EFL students' engagement and motivation towards learning English.
- F. A study of the effect of creating English digital stories on the self-directed learning of the EFL students.
- G. A study of the effect of creating English digital stories on the critical thinking of the EFL students.

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