

EFFECTIVENESS OF USING DIGITAL STORYTELLING IN ENHANCING CRITICAL LISTENING SKILLS AMONG SAUDI NINTH GRADERS

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ABSTRACT

For the development of higher order thinking skills, it is imperative for students to develop critical listening skills (CLS). However, Saudi students demonstrate limited CLS. With the promising prospects and significance of technology-based teaching, schools in Saudi Arabia have started to make use of such teaching approach—and that includes digital storytelling (DST). Addressing students' learning needs in this digital era, DST serves as a technology-based tool that engages students with interesting stories for language learning in the classroom and development of CLS. Focusing on Saudi ninth graders, a quasi-experimental study was conducted to evaluate the effectiveness of DST in enhancing students' CLS. In particular, this study conducted semi-structured interview to qualitatively explore the influence of DST on CLS and pre-post test to quantitatively evaluate the effectiveness of DST in enhancing CLS. All instruments were reviewed and approved by an expert panel of jury members prior to the data collection. The interview involved eight participants, and the CLS test involved 70 other purposively sampled participants who were randomly divided into experimental and control groups. The obtained t-test results revealed statistically significant differences between the mean scores of the control and experimental groups in CLS and related sub-skills, namely auditory discrimination, analysis, inference, and evaluation and judgment skills, which complemented the obtained qualitative findings in this study. Based on the obtained results and findings, this study successfully proved that the use of DST can enhance students' CLS. Curriculum designers should incorporate DST in English Syllabus as a part and parcel of listening activities to enhance critical listening skills which are the most crucial skills needed for the 21st century. It is recommended for future research to expand the study in terms of time frame and samples of different backgrounds to obtain more evidence related to the use of DST in language learning, especially for the development and improvement of CLS.

Keywords: Digital Storytelling, Critical Listening Skills, Socio-cultural theory, Schema Theory.

INTRODUCTION

Corey (2016), Bell (2018), and Welch and Mickelson (2018) noted teachers' lack of emphasis on the mastery of listening skills in the classroom—for instance, teachers do not give their students adequate time to practice listening skills, as compared to other language skills, during English language lessons. Studies have also noted the lack of effective planning, especially when it comes to CLS. As listening skills are often taught during the early stage of language learning, its importance has been overlooked to a certain extent. According to Al-Seghayer (2015), Saudi EFL teachers mainly rely on instructional strategies, which emphasize the development of bottom-up skills, to improve students' low English proficiency. The study noted the application of bottom-up listening tasks for students to recognize lexical, grammatical, and pronunciation features and language forms at the word- and sentence-levels. In most cases of bottom-up listening tasks, students are typically required to identify individual sounds, word boundaries, and stressed syllables, to listen for intonation patterns and specific details, as well as to recognize grammatical forms and functions, contractions and connected speech, and linking words and phoneme sequences by circling the words they listen. Other common bottom-up listening tasks include dictation, cloze listening, text-based multiple-choice questions, and similar activities that involve close and detailed recognition and input processing.

Problem Statement

The implementation of such conventional teaching approaches and strategies, which heavily focus on direct recitation and listening standards, has contributed to students' poor mastery of CLS, especially among Saudi ninth graders in Riyadh (El-Harbi, 2016). Saudi EFL teachers, unlike teachers in process-oriented classrooms, deliver teacher-centered learning and focus on testing students' ability to listen. Saudi EFL teachers pay less emphasis on effective listening comprehension strategies that help students to master CLS. In a process-oriented classroom, students are exposed to isolated listening tasks, which involve the selection of input, design, and sequence listening activities, determination of tasks, and making decisions on the correct responses. Nurul Islam (2012) and Hamouda (2013), as cited in Al-Seghayer (2015), similarly noted how listening has gained the least attention in English language teaching in Saudi classrooms. Teachers also tend to overlook this particular skill when they design language lessons based on the assumption that students' listening comprehension skills can be naturally developed during language learning.

Studies have identified the lack of relevant advanced strategies, programs, online applications, and educational and instructional materials for listening skills as factors that lead to students' poor CLS. Therefore, it is necessary to evaluate the effectiveness of innovative technology-supported instructional strategies, such as DST, in improving students' academic performance. The significant potentials of DST have clearly gained growing popularity among language practitioners and research interest, particularly in the contexts of ESL and EFL. Most prior studies focused the use of DST among adult learners and in the ESL context despite the evidence on how multimedia stories can benefit young learners, especially in the development of listening comprehension (Lee, 2014). Furthermore, it has been proven that DST can effectively enhance Saudi ninth graders' listening comprehension skills, where English is a second and instructional language. DST shapes students' listening skills and influences

the nature of their intelligence (Dos Santos et al., 2016; Shukla et al., 2017; Matthews & Sunderland, 2017). DST offers an engaging platform for students to enhance their CLS in order to have better understanding of the available materials and information in English language.

The researcher of the current study is also a teacher and has been teaching using the American curriculum at Madinat Al-Oloum International School (MOIS), an international school located in Riyadh, Saudi Arabia, since 2014. The issues and challenges encountered by students during listening lessons prompted the researcher to conduct the current study to explore the effectiveness of DST in improving students' CLS. Furthermore, at the point of this study, the online search engine (e.g., Google Scholar) revealed no existing studies on the effectiveness of DST in improving students' CLS, especially within the Saudi context. After all, studies have proposed the significance of assessing how CLS can improve academic performance (Stahl, 2015; Walsh & Hoskisson, 2015; Wessel-Powell et al., 2016; Hawkins & Weis, 2017; Shukla et al., 2017).

With that, prior to the study's data collection, the researcher first obtained the approval and permission from the school administration to conduct a program involving two classes of ninth graders (as the study's participants) at MOIS and gather the reports of these students' general academic performance and academic performance in English language for the school term of 2017/2018. For this specific program, a panel of teachers was trained to apply DST, which was expected to create fun and enjoyable learning environment for the participating group of ninth graders. The researcher played the role of an observer during all treatments of the study. The reports of the students' academic performance were then used to confirm the effectiveness of DST in improving CLS.

With respect to the objectives and research questions, a quasi-experimental study was conducted, which involved Saudi ninth graders from MOIS. The purposively sampled participants were divided into control and experimental groups. The experimental group, which consisted of 35 participants, was exposed to the use of DST. Firstly, in order to explore how Saudi ninth graders collaborate to create DST during critical listening lessons, qualitative method was applied, which involved listening to selected stories, instructional rubric, students' created DST, and semi-structured interview. Besides that, the pre-post test was conducted to determine the effectiveness of DST in enhancing students' CLS.

Research Objectives

In general, this study aimed to evaluate the effectiveness of DST in enhancing Saudi ninth graders' CLS. Firstly, the development of DST in this study involved script reading, adjusting, drafting, storyboarding, editing sounds and pictures, and presentation of DST. Students' DST was then expected to enhance their CLS. The processes of DST (including three case treatments) were observed, specifically on how DST influences and improves students' CLS. The specific objectives of this study are listed as follows:

- 1) To explore the influence of DST on Saudi ninth graders' CLS
- 2) To evaluate the effectiveness of DST in enhancing Saudi ninth graders' CLS

Research Questions

With respect to the specific objectives, the current study addressed the following research questions:

- i) How do Saudi ninth graders collaborate to create DST during critical listening lessons?
- ii) How does DST improve Saudi ninth graders' CLS?

Hypotheses

Based on the review of literature, DST can improve students' language proficiency. Considering the significance of DST in improving students' CLS, several hypotheses were formulated and proposed for testing in the current study. The study's findings were expected to benefit teachers' decisions to incorporate DST in the classroom settings.

H1: The mean scores of the pre-test and post-test in CLS are statistically significant different, in favor of the post-test.

H2: The mean scores of the pre-test and post-test in each critical listening sub-skill are statistically significant different, in favor of the post-test.

H3: The mean scores of the control group and experimental group in CLS are statistically significant different, in favor of the experimental group.

H4: The mean scores of the control group and experimental group in each critical listening sub-skill are statistically significant different, in favor of the experimental group.

Theoretical Framework

With respect to the objectives of this study, several relevant theories were identified. The schema theory (Bartlett, 1932 cited in Alexander & Emmott, 2014; Wagoner, 2017) and socio-cultural theory of second language acquisition (Vygotsky 1978, 1986, 1987, cited in Myles & Mitchell, 2014; Lantolf et al., 2015) established the underlying theoretical basis of the current study. Figure 1.1 presents the selected theories that established the development of DST. Guiding the development of DST helps students to gain independence and better understanding of their learning process.

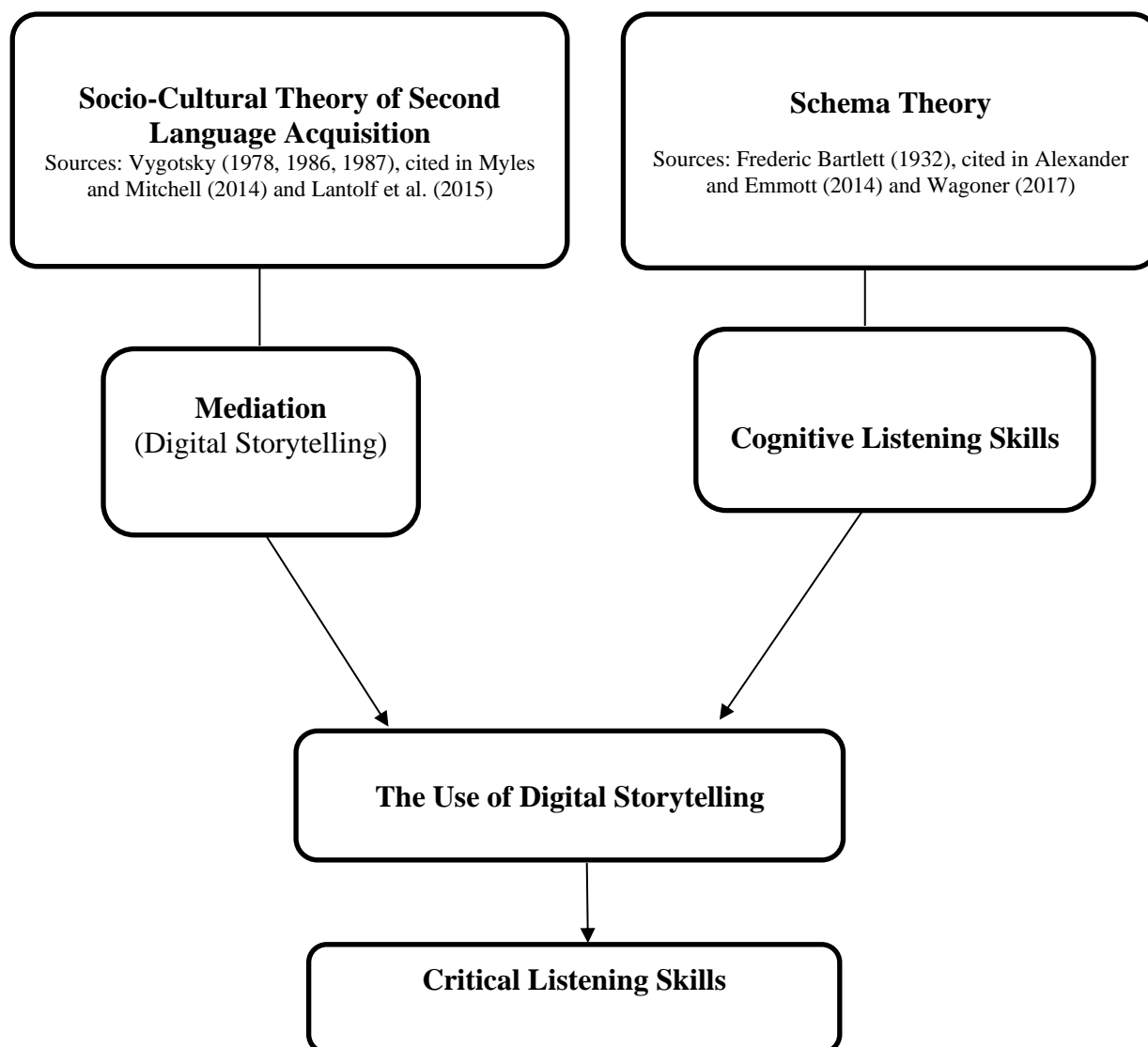


Figure 1.1. *Theoretical Framework of Study*

A Russian psychologist, Lev Vygotsky, and his colleagues introduced the socio-cultural theory (SCT) that incorporates the principles and constructs of an approach to learning and mental development. This theory explains human mental functioning as a mediated process that is organized by cultural artifacts, activities, and concepts (Myles & Mitchell, 2014; Daniels, 2016). This theory's framework explains that humans use and create cultural artifacts to regulate their biological and behavioral activities. In this case, the use, organization, and structure of language serve as the primary means of mediation. The process of creation requires participation and collaboration within the cultural, linguistic, and historically formed settings, such as family and peer group interaction, as well as the institutional contexts, such as school, workplace, and organized sports activities. Despite the significance of human neurobiology as a key condition for higher order thinking, human interactions within the socio-cultural settings still represent the most essential forms for the development of human cognitive activities.

The use of language essentially involves the social and cultural contexts. In other words, any text in the form of story is somehow linked to a socio-cultural context. When it comes to second language acquisition, Mediation is one of the concepts in SCT. It is the principle construct that unites all varieties of SCT and is rooted in the observation that humans do not act directly on the world—rather their cognitive and material activities are mediated by symbolic tools as well as by physical tools. While physical tools are outwardly directed, symbolic tools are inwardly or cognitively directed. Just as physical tools serve as auxiliary means to enhance the ability to control and change the physical world, symbolic tools serve as an auxiliary means to control and reorganize our biologically endowed psychological processes. (Aimin, L, 2013).

Through mediation, language learners can complete or work on a particular learning task. A series of pedagogical processes facilitates the process of learning by engaging learners with knowledgeable peers or teachers, as well as instructional tools (Bruner, 1978; Vygotsky, 1978, cited in Myles & Mitchell, 2014; Lantolf et al., 2015). These different processes involving specific tasks require learners to build knowledge of the field (e.g., a story, technology, topicality, or language resources), collaborate to construct knowledge (e.g., teacher-student engagement with text creation), and independently construct knowledge (e.g., individual text production or collaborative text production) (Pryde, 2015).

DST represents the combination of technology use and storytelling. The use of a particular digital tool serves as a mediator of the process of telling a story. The collaboration work involved in DST promotes students' engagement with social and cultural environment. DST is oriented learning visible. Students have an opportunity to present their stories through DST which focuses on personal voice and agency; it creates a situation where the students become more visible and learners in a personal sense.

Through DST, under the guidance and support of teachers, students are prompted to recognize language use within a specific context and empowered to be more independent to learn and explore how socio-historically situated texts in the form of stories can be organized and represent different socio-cultural meanings. The processes of creating and sharing stories are purposeful, socially embedded tasks that can be highly engaging for young learners. Teachers play the important roles of supporting and guiding their students to adopt effective listening skills. Teachers can make use of DST as an effective form of scaffolding to engage students to listen, learn, and understand what they hear and effectively link the audio materials to reading materials.

Apart from SCT, the schema theory was adopted given its relevance to the focus of the current study. The process of learning involves the development of cognitive skills, higher order thinking skills and making inferences. With respect to the schema theory, creating new schemata (stored knowledge structure) is noted to be far more pivotal than imparting new knowledge of the language system. Studies have also demonstrated that the accumulation of schemata contributes to efficient comprehension and retention of new listening materials that become more challenging over time as the lessons progress (Nurpahmi, 2015).

Accordingly, there are two major types of schemata involved in listening, namely language schema and knowledge schema. Language schema includes phonological, lexical, syntactic, and grammatical knowledge required for students to grasp the basis for listening comprehension. It is not possible to comprehend listening materials without these four basic aspects of language knowledge (Widdowson, 1978, as cited in Nurpahmi, 2015). Secondly, knowledge schema is related to the typical daily conversations that take place in various contexts or scenarios. The linkage between interlocutors and means of communication are comparatively fixed. Cognitive psychologists refer the absorption and storage of common knowledge in memory as schemata. Both language schema and knowledge schema are fundamental prompts to CLS in relation to the use of DST, which were expected to address the current study's research questions. The ability to make use of CLS helps students to have better understanding of learning, especially listening. With respect to the study's theoretical framework, a specific CLS guidebook for students to identify CLS was developed and modified for the approval and use of the panel of teachers in this study.

Significance of Study

The current study offered valuable insights on the effectiveness of using DST in enhancing students' CLS, which can benefit relevant stakeholders. Through this study, English language officers at the state education departments and district education office in Saudi Arabia can gain better understanding on the key principles of DST and appropriate strategies to integrate DST in the classroom settings, particularly during English listening lessons. With that, the appropriate media tools and strategies can be developed to benefit students in the development and improvement of their language skills, especially CLS.

Besides that, English teachers can integrate the use of DST in the classroom more effectively. This study highlighted the significance of DST and how English language lessons can be transformed beyond the conventional learning settings to engage students to discuss, analyze, and explore learning tasks with their peers. This study also presented valuable insights for trainee teachers during their teaching practicum on how to create engaging learning environment through the use of DST in the classroom. This study explored how to effectively improve students' CLS through DST from the viewpoints of students themselves. Focusing on the significant benefits of DST for students, this study was expected to prompt teachers to effectively guide and motivate students to enhance CLS and actively engage with their peers. Furthermore, DST provides opportunities of creating productive peer relationships and bridging the gap between students with high language proficiency and students with low language proficiency considering that the tasks would require collaboration and teamwork. As a result, Students could boost their confidence, share outputs and think critically while attending critical listening tasks.

- **Quantitative Data Analysis**

Reliability and Validity of the Test

Pearson's correlation coefficient was used to determine the consistency of the test. As shown in Table 4.1, high correlation coefficients, which were statistically significant at 0.05 level, indicated the appropriateness and internal consistency of the test in measuring these sub-skills.

Table 4.1. Pearson's Correlation Coefficients for Critical Listening Skills

Skills	Pearson's Correlation Coefficient
Skills as a whole	0.809
Auditory discrimination	0.82
Analysis	0.791
Inference	0.783
Evaluation and judgment	0.744

As for the validity of the test, the expert panel of jury members was appointed to review and determine the appropriateness of the items in measuring the constructs under study linguistically and scientifically. As previously discussed, certain items and phrases were removed, added, and modified accordingly prior to the administration of the test. As for the self-validity, the square root value of the coefficient recorded 0.899, suggesting high accuracy of the content in measuring what it intends to measure.

Controlling the Relevant Variables

The study ensured a random selection of participants from a purposive sample when these participants had to be divided into the experimental group (Class 9A) and the control group (Class 9B). This approach of random selection ensured the accuracy of the results and avoided any marginal interference. Besides that, other variables (e.g., age) were controlled to avoid potential bias by examining the academic records provided by the school administration. The pre-test was conducted to equivalently measure the participants' critical listening performance. All recorded data were statistically analyzed using homogeneity and normality tests, which are discussed in the subsequent subsections.

Homogeneity Test

The homogeneity test was considered to determine whether the sample came from the same population. With that, Levene's test was performed on the critical listening pre-post test data using IBM SPSS (version 26). The results are tabulated in Table 4.2 and Table 4.3, which revealed that the experimental and control groups were homogeneous, as the recorded p-values of pre-post test data exceeded 0.05. Despite different language proficiency levels, the results of post-test confirmed data homogeneity.

Table 4.2. Results of Homogeneity Test on Critical Listening Pre-Test Data

Levene Statistic	df ¹	df ²	Sig.
.135	1	58	.714

Table 4.3. Results of Homogeneity Test on Critical Listening Post-Test Data

LeveneStatistic	df ¹	df ²	Sig.
.881	1	58	.352

Testing of Normality

Firstly, the study's dependent variable was continuous (interval). Secondly, the study's participants were randomly selected. Furthermore, the same participants participated in the pre-test and post-test, and no outliers were found in the pre-post test data. Besides that, the scores of pre-test and post-test were calculated using IBM SPSS. Referring to Table 4.4, the testing of normality for the pre-test data revealed that Kolmogorov-Smirnov test recorded p-value of 0.326, while Shapiro-Wilk test recorded p-value of 0.673. Meanwhile, the testing of normality for the post-test revealed that Kolmogorov-Smirnov test recorded p-value of 0.174, while Shapiro-Wilk test recorded p-value of 0.905. All p-values exceeded 0.05, which implied normal distribution of data.

Table 4.4. Testing of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-test	.362	35	.658	.673	35	.562
Post-test	.174	35	.562	.905	35	.231

a. Lilliefors Significance Correction

With that, all requirements of the paired samples t-test were met. For the testing of hypotheses, paired samples t-test was performed on the pre-post test data. The results of the analysis are presented later in this chapter (Section 4.2.3).

Testing the Equivalence between Control and Experimental Groups

Testing the equivalence between control and experimental groups in this study involved performing independent samples t-test on the pre-test data. As shown in Table 4.5, the mean scores of the control group (M = 6.00, SD = 1.68) and experimental group (M = 6.54, SD = 1.48) were not statistically significantly different, as the recorded p-value exceeded 0.05 ($T(34) = 1.43$, p-value = 0.156).

Table 4.5. Independent Samples T-Test on the Pre-Test Data for Critical Listening Skills

Pre-Test		N	Mean (M)	Std. Deviation (SD)	t-value	p-value
Critical Listening Skills	Control group	35	6.00	1.68	1.43	0.156
	Experimental group	35	6.54	1.48		

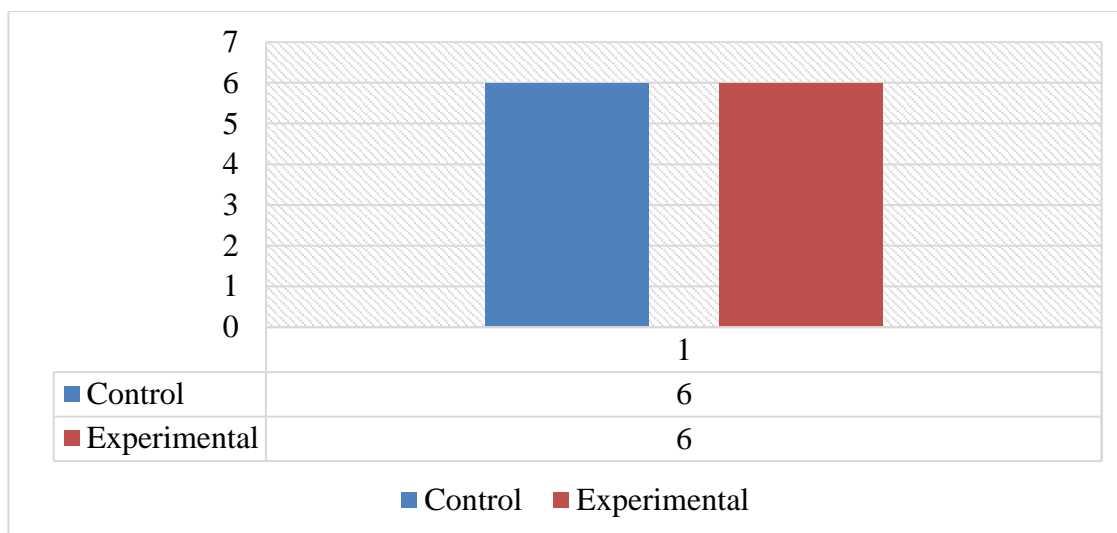


Figure4.1. Difference between Mean Scores of Control group and Experimental group in Pre-Test for Critical Listening Skills

Testing of Hypotheses

Testing of the First Hypothesis

The current study hypothesized the following:

H1: The mean scores of the pre-test and post-test in CLS are statistically significant different, in favor of the post-test. For the testing of the first hypothesis, paired samples t-test was performed on the pre-post test data. The results of the paired samples t-test in Table 4.6 revealed statistically significant difference ($T(34) = 42.13$, $p\text{-value} = 0.000$) between the mean scores of the post-test ($M = 19.14$, $SD = 0.91$) and the pre-test ($M = 6.54$, $SD = 1.48$). The results in Figure 4.2 revealed that the statistically significant difference was in favor of the post-test. This means that students' critical listening skills, in general, have enhanced due to the experimentation. Also, it can be said that the digital storytelling has a great effect on developing students' critical listening skills with a doubt degree at the level of (0.05). Table (4.6) and figure (4.2) show that the digital storytelling had a positive effect on developing the overall critical listening skills of the EFL ninth graders. Therefore, this provides enough evidence to support hypothesis one. In other words, H1 was supported.

Table 4.6. Paired Samples T-Test on the Pre-Post Test Data for Critical Listening Sub-Skills

		N	Mean (M)	Std. Deviation (SD)	t-value	p-value	Effectiveness ≥ 1
Critical Listening Skills	Pre-Test	35	6.54	1.48	42.13	0.000	1.20 (Effective and acceptable)
	Post-Test	35	19.14	0.91			

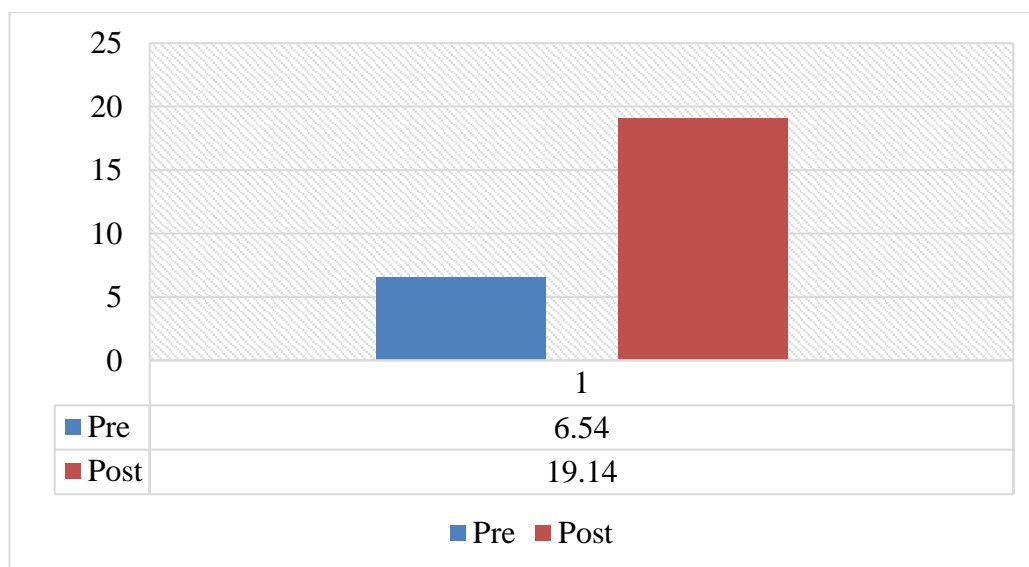


Figure 4.2. Difference between Mean Scores of the Pre-test and Post-test for Critical Listening Skills

Interpretation of Results of the First Hypothesis:

The results of the current study mentioned above support and are in line with the previous research results of:

Smeda, Dakich and Sharda (2014), Robin (2015), El-Harbi (2016), Hannele and Jari (2016), Niemi and Multisilta (2016), Wessel-Powell, Kargin and Wohlwend (2016), Widodo (2016), Hamdy (2017), Jamissen, Hardy, Nordkvelle and Pleasants (2017), Schmoelz (2018), Thompson and Hall (2018), Yang, Chen, and Hung (2020), Wu and Chen (2020), Avcı (2021), and Wisnumurti, Setyaningsih and Wahyuni (2021). The current study results assure the potent effect of using students' created digital storytelling in enhancing critical listening skills among Saudi ninth graders. The results also mentioned that digital storytelling encouraged the students to use multiple skills and build their digital literacies. It created a learning environment which encouraged students to use different forms of thinking, such as critical thinking, reflective thinking, and creative thinking in order to understand, infer, synthesize, analyze, evaluate, assess and use information to create a digital story that subsequently helped increase critical listening skills and are in line with previous results of El-Harbi (2016), Rahimi and Yadollahi (2017), Anderson, Chung and Macleroy (2018), Del-Moral-Pérez, Yang, Chen and Hung (2019) and Tanrikulu (2021).

In addition, the results showed that digital storytelling develops phonological skills, particularly phonemic awareness in learning familiar and unfamiliar sounds; links sound with mime, gesture and facial expression, which consolidates meaning and brings language to life; it extends students' understanding of how speakers of different languages use gesture, volume, and intonation, moreover, it develops students' understanding of gaining meaning from phonic information. It also provides opportunities to develop students' listening skills for both gist and detail as well as allows them to revise and consolidate basic discrete listening skills, predict what they may hear, use the context to increase understanding. Digital storytelling exposes students to a wide range of genres of listening texts – both interpersonal and information. This develops persistence and perseverance in order to achieve a goal, develops students' ability to understand and carry out instructions autonomously ranging from simple to complex (a sequence of different messages) during creation of students' digital storytelling. It is particularly useful and appropriate for students who benefit from mediation and support provided by teachers. These results are in line with previous results of Anderson, Chung and Macleroy (2018), Del-Moral-Pérez, Villalustre-Martínez and Neira-Piñeiro (2019), Hava (2021), and Fu, Yang and Yeh (2021).

Testing of the Second Hypothesis

The current study hypothesized the following:

H2: The mean scores of the pre-test and post-test in each critical listening sub-skill are statistically significant different, in favor of the post-test.

For the testing of the second hypothesis, paired samples t-test was performed on the pre-post test data. The results of the paired samples t-test are tabulated in Table 4.7. For *auditory discrimination skills*, the results revealed statistically significant difference ($T(34) = 32.27$, p -value = 0.000) between the mean scores of the post-test ($M = 4.94$, $SD = 0.23$) and the pre-test ($M = 1.37$, $SD = 0.54$). Meanwhile, for *analysis skills*, the results revealed statistically significant difference ($T(34) = 18.75$, p -value = 0.000) between the mean scores of the post-test ($M = 4.68$, $SD = 0.52$) and the pre-test ($M = 1.77$, $SD = 0.84$). The results for *inference skills* similarly revealed statistically significant difference ($T(34) = 24.30$, p -value = 0.000) between the mean scores of the post-test ($M = 4.85$, $SD = 0.35$) and the pre-test ($M = 1.74$, $SD = 0.65$). Besides that, the results for *evaluation and judgment skills* revealed statistically significant difference ($T(34) = 18.89$, p -value = 0.000) between the mean scores of the post-test ($M = 4.65$, $SD = 0.53$) and the pre-test ($M = 1.65$, $SD = 0.68$). In addition, the results in Figure 4.3 revealed that statistically significant differences were in favor of the post-test for all critical listening sub-skills. Therefore, H2 was supported.

Table 4.7. Paired Samples T-Test on the Pre-Post Test Data for Critical Listening Sub-Skills

Skills	N	Mean (M)	Std. Deviation (SD)	t-value	p-value	Effectiveness ≥ 1
Auditory discrimination	Pre-test	1.37	0.54	32.27	0.000	1.10 (Average effectiveness)
	Post-test	4.94	0.23			
Analysis	Pre-test	1.77	0.84	18.75	0.000	1.04 (Average effectiveness)
	Post-test	4.68	0.52			
Inference	Pre-test	1.74	0.65	24.30	0.000	1.12 (Average effectiveness)
	Post-test	4.85	0.35			
Evaluation and judgment	Pre-test	1.65	0.68	18.89	0.000	1.09 (Average effectiveness)
	Post-test	4.65	0.53			

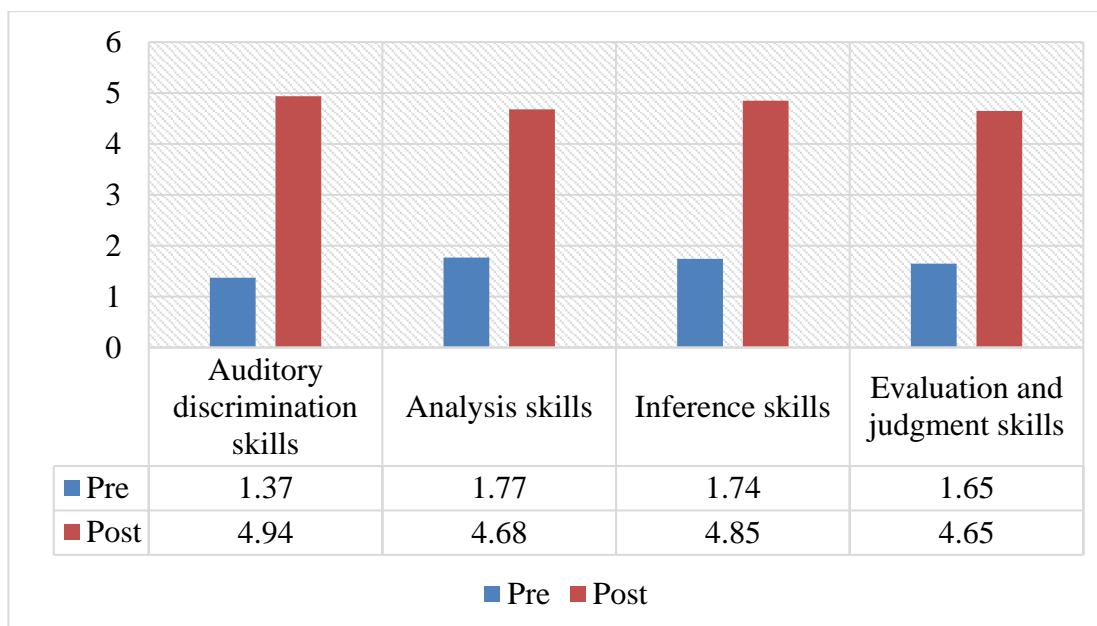


Figure 4.3. Differences between Mean Scores of the Pre-test and Post-test for Critical Listening Sub-Skills

Interpretation of results of the second hypothesis:

The current study results assure the powerful and patent effect of using students' created digital storytelling in enhancing critical listening sub-skills. The thorough discussions among students during the creation process of digital stories helped enhance critical listening sub-skills such as auditory discrimination, analysis, inference and evaluation and judgment. Auditory discrimination sub-skills enhanced after using digital storytelling because they depend on collaborative activities during steps of creation of students' digital storytelling starting from editing the script choosing convenient vocabulary for the various conversations between characters. Moreover, discussion and correction of opinions for choosing appropriate images, tone, and voiceover during the production phase helped enhancing auditory discrimination sub-skills for the ninth graders.

Testing of the Third Hypothesis

The current study hypothesized the following:

H3: The mean scores of the control group and experimental group in CLS are statistically significant different, in favor of the experimental group.

For the testing of the third hypothesis, independent samples t-test was performed on the post-test data involving the control and experimental groups. As shown in Table 4.8, the mean scores of the control group ($M = 10.62$, $SD = 2.55$) and experimental group ($M = 19.14$, $SD = 0.91$) were statistically significantly different, as the recorded p-value did not exceed 0.05 ($T(34) = 18.55$, p-value = 0.000). The results in Figure 4.4 revealed that the statistically significant difference was in favor of the experimental group. In other words, H3 was supported.

Table 4.8. Independent Samples T-Test on the Post-Test Data for Critical Listening Skills

Post-Test		N	Mean (M)	Std. Deviation (SD)	t-value	p-value	Effect size ≥ 0.14
Critical Listening Skills	Control group	35	10.62	2.55	18.55	0.000	0.835 (Strong)
	Experimental group	35	19.14	0.91			

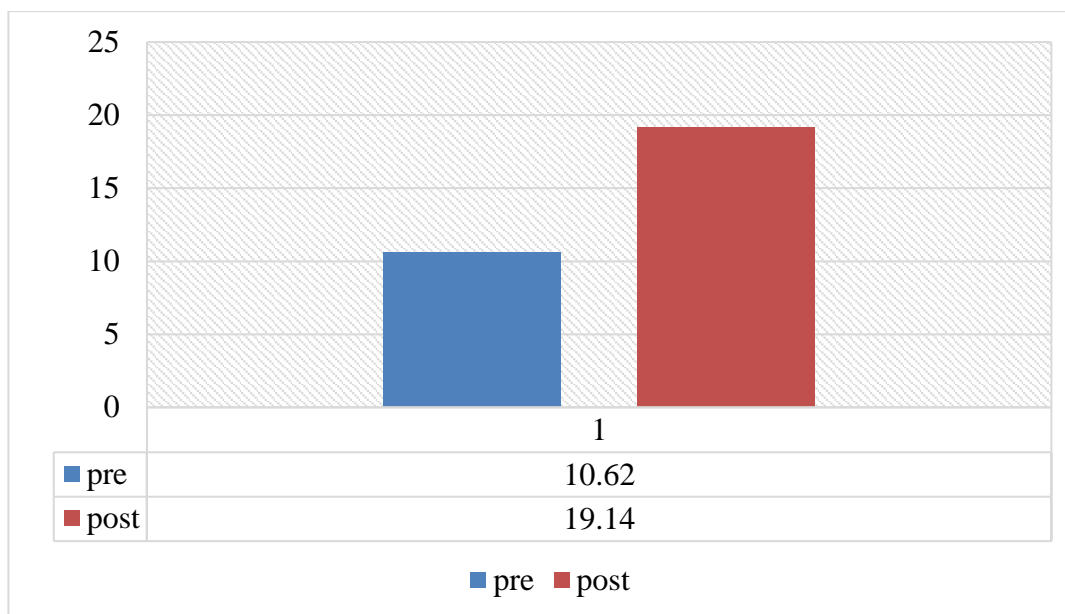


Figure 4.4. Difference between Mean Scores of Pre-test and post-test for Critical Listening Post-Test

Testing of the Fourth Hypothesis

The current study hypothesized the following:

H4: The mean scores of the control group and experimental group in each critical listening sub-skill are statistically significant different, in favor of the experimental group.

For the testing of the fourth hypothesis, independent samples t-test was performed on the post-test data involving the control and experimental groups. The results of the independent samples t-test are tabulated in Table 4.9. For *auditory discrimination skills*, the results revealed statistically significant difference ($T(34) = 10.96$, $p\text{-value} = 0.000$) between the mean scores of the control group ($M = 2.80$, $SD = 1.13$) and the experimental group ($M = 4.94$, $SD = 0.23$). Meanwhile, for *analysis skills*, the results revealed statistically significant difference ($T(34) = 8.37$, $p\text{-value} = 0.000$) between the mean scores of the control group ($M = 2.83$, $SD = 1.20$) and the experimental group ($M = 4.69$, $SD = 0.52$). The results for *inference skills* similarly revealed statistically significant difference ($T(34) = 11.21$, $p\text{-value} = 0.000$) between the mean scores of the control group ($M = 2.37$, $SD = 1.26$) and the experimental group ($M = 4.86$, $SD = 0.35$). Besides that, the results for *evaluation and judgment skills* revealed statistically significant difference ($T(34) = 9.51$, $p\text{-value} = 0.000$) between the mean scores of the control group ($M = 2.63$, $SD = 1.13$) and the experimental group ($M = 4.66$, $SD = 0.53$). In addition, the results in Figure 4.5 revealed that statistically significant differences were in favor of the experimental group for all critical listening sub-skills. Therefore, H4 was supported.

Table 4.9. Independent Samples T-Test on the Post-Test Data for Critical Listening Sub-Skills

Post test		N	Mean (M)	Std. Deviation (SD)	t-value	p-value	Effect size ≥ 0.14
Auditory discrimination	Control group	35	2.80	1.13	10.96	0.000	0.639 (Strong)
	Experimental group	35	4.94	0.23			
Analysis	Control group	35	2.83	1.20	8.37	0.000	0.508 (Strong)
	Experimental group	35	4.69	0.52			
Inference	Control group	35	2.37	1.26	11.21	0.000	0.649 (Strong)
	Experimental group	35	4.86	0.35			
Evaluation and judgment	Control group	35	2.63	1.13	9.51	0.000	0.571 (Strong)
	Experimental group	35	4.66	0.53			

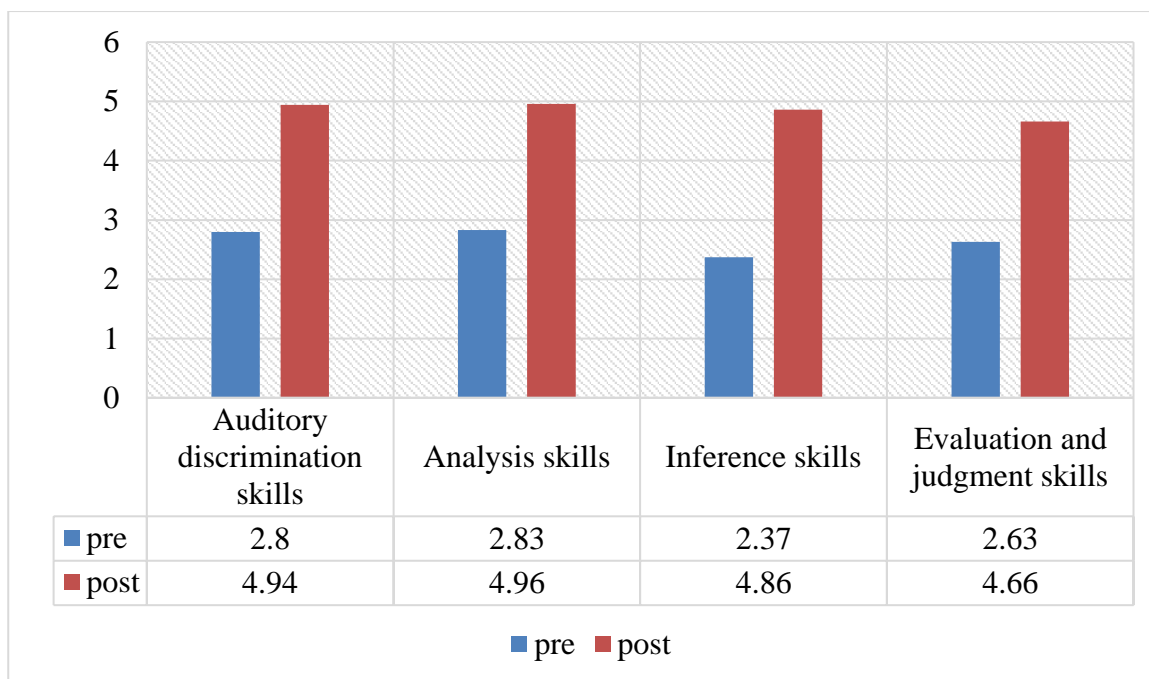


Figure 4.5. Differences between Mean Scores of the Pre-test and Post-test in the Post-test for Critical Listening Sub-skills

Qualitative Data Analysis

The current study’s qualitative data analysis involved interviewing eight ninth graders from MOIS in Riyadh, which applies the American curriculum. This section presents the findings of semi-structured interview. From the thematic analysis of the interview data, several key themes emerged, which are comprehensively discussed in the following subsections.

Enhancing Critical Listening Skills

Overall, all eight participants agreed on the effectiveness of DST as a tool to enhance students’ CLS. Five participants particularly expressed that they found the process of creating and presenting digital stories greatly enhanced their CLS. These participants further revealed that listening to and observing others’ DST in the classroom considerably improved their capacity to pay attention and discern information. The process of creating digital stories, from writing the script, adding images, and recording voiceovers to presenting the digital stories, helps students to learn how to differentiate main ideas and sub-ideas and analyze the characters in the digital stories (Robin, 2016; Alexander, 2017). Besides that, the participants demonstrated greater understanding on how to assess individuals and their attitudes. In particular, the abilities to reason and understand the logic behind a character’s action in a specific setting and to predict what happens next in the story set these students apart from the rest of the group. The following views were expressed by some of the study’s participants during the interview:

“In my opinion, my critical listening skills have improved so much due to using digital storytelling. From the very beginning, I had to discuss ideas with my teammates, we thought in a loud voice and argued about the best ideas and practices to be done, while drafting the stories in the first week, then designing our digital storytelling according to the rubrics given to us by our teacher, and lastly, watching the other team’s digital storytelling according. I found out that my critical listening skills were already used and tested, while designing our digital storytelling identifying main and sub-ideas in the stories, interpreting attitudes and events, and converting them from paper to visual videos, and judging characters and situations, as well as related reasons to results; thus showing all of these in our digital storytelling ...” (P2)

“I think my critical listening skills have improved a lot, thanks to digital storytelling through building my new schemata by introducing new knowledge and extending my current schemata ...” (P6)

“I think my critical listening skills improved so much indeed by applying our created digital storytelling. By watching the other team’s digital storytelling, my teammates and I could discriminate between the semantics of audible words by discussing them collaboratively. We could interpret the different attitudes of characters and events in light of previous information mentioned during the presentation. We have also learned how to derive meanings implied, while listening to the other team’s digital storytelling.” (P7)

The other three participants also participated in the study’s DST project. They found that the process of creating digital stories motivated them to use various skills, such as critical thinking skills, reflective thinking skills, creativity, and inductive reasoning skills, to comprehend and interpret information, as well as to analyze, evaluate, infer, and apply information for the creation of digital stories. The activities associated with DST prompted the participants to engage in discussion and arguments

regarding the attitudes, personalities, and intentions of characters in the narrative (Hobbs, 2010). Apart from predicting the future events and outcomes based on the obtained information, their tasks included doing research.

For instance, P5 expressed the following notion:

“Personally, using digital storytelling helped me distinguish between facts and views mentioned in the other team’s presentation of their three digital storytelling as I had to discuss facts, views, and traits of characters with my teammates properly. We argued a lot to compare between two ideas looking through their meanings and trying to reveal the similarities and differences between them. I also learned how to guess the meaning of new vocabulary from the context and situation presented by the other team’s digital storytelling.”

The participants and their teams noted how the use of DST exposed them to various multimedia tools to add voiceovers, images, and videos for their digital stories and helped them to distinguish between facts and fictions in the stories during the process of creating digital stories. The use of DST also offered them the opportunity to apply DST in the classroom settings and immerse themselves in the digital stories for the presentation. Through the presentation of digital stories, the participants were able to discover and fix illogical mistakes in the other team’s digital storytelling. The speech from the digital narrative after the initial treatment was used to predict future instances, which benefitted the participants in making predictions. Following the presentation of digital stories and participation in DST activities, the participants clearly demonstrated enhanced CLS.

Improvement of Collaboration Skills

Three out of eight participants expressed that they felt more comfortable with their peers through their participation in DST activities in the classroom. One of the participants revealed that DST increased the potential for meaningful listening and influenced their thoughts and feelings via their minds and emotions. The participation in DST activities allowed the participants to demonstrate their awareness, understanding, and design of their digital stories to their peers (Smeda, Dakich, & Sharda (2014); Jamissen, 2017; Goldingay, 2018). Apart from obtaining information as a consequence of their engagement in social and cognitive activities with their peers, they were able to produce and share valuable insights with their peers, while simultaneously gaining new knowledge:

“For me, pooling ideas together with other students taught me the benefit of collaborative work and what does it mean “The spirit of the team”. We had to negotiate whose ideas should be included from drafting the stories to editing sounds and pictures and during watching the other teams’ digital storytelling as well. During observation of the other teams’ stories, we had to draw the main ideas and conclusions, analyze characters and attitudes, as well as derive meanings implied in their digital storytelling. This helped improve our critical listening skills a lot.” (P2)

Through the use of DST, the participants learned how to actively participate in the construction of multimodal narrative works. The participants did not have such experience in their previous English language lessons. It was evident that DST enabled the participants to adopt various skills, including the identification and organization of materials, script editing, and the inclusion of voiceovers to the created digital stories (Wisnumurti, 2021). The participants gained improved understanding of digital literacy and information literacy and were taught a wide range of literacy and communication skills, (e.g., digital media tools like audio, video, and animation; conventional media tools like texts, images, and voices) following their involvement in DST activities. The participation and collaboration of the participants engaged a number of levels, including those pertaining to their behaviors, emotions, and cognitive capacities, as well as those relating to the participation of other students.

As for the current study, the participants were exposed to a range of pleasant emotional experiences that they could choose from. Furthermore, they were able to apply their schemas when they were assigned to create the script, add narration and images, and ultimately, create their digital stories (Thompson Long & Hall, 2018). There were numerous different scenarios for the participants to imagine and include in their digital stories. The participants were also able to engage in lengthy discussions with their team members following their observation of the DST presentation of other teams. During the discussion, the participants demonstrated their abilities to recognize different connotations in the DST presentation of other teams and to synthesize the reasons for and consequences of actions of the characters in the stories. After gathering evidence to support their point of view or to explain their behaviors or feelings in reaction to a specific concept or situation, the participants learned how to examine the obtained evidence and how to determine whether the speech and information provided by the characters are accurate or wrong.

Enhancing Communication Skills and Cultural Understanding

The participants demonstrated enhanced communication skills and cultural understanding during the discussion. Group-work activities, such as analysis, synthesize, evaluation, and problem-solving, allowed the participants to engage in and converse with one another and prompted them to make use of their newly acquired knowledge and skills. Furthermore, assigning three digital storytelling pieces for the first team and another three digital storytelling pieces for the second team made it easier for the participants to recall all episodes, scenarios, explanations, and reasoning. The following interview excerpts explained the above discussion:

“For me, discussion was a splendid task to see how much information and ideas we got from the other team’s presentation of digital storytelling. Observing the other team’s digital storytelling allowed us to evaluate their work and prepare our presentations constructively as we were instructed by our teacher and following the digital storytelling rubric.” (P2)

“I think that watching the other team’s three digital storytelling required me and my teammates to listen cognitively and effectively gathering information on phonology, lexis, syntax, and grammar to build up an understanding of the shown digital storytelling and simultaneously predict, filter, analyze, and interpret the information received and correlating it to our background knowledge.” (P.4)

As the participants observed the DST presentation of other team, they were deeply focused on the characters, plot, and happenings. For the presentation, the participants were allowed to assign duties among themselves to create a draft with the emphasis on the most significant themes and subjects presented. The whole process was an overwhelming experience for the participants, as they put themselves in the shoes of the other group and discussed their DST, specifically on the main ideas and sub-ideas, reality and fiction, analysis of characters, interpretation of attitudes, and appropriate solutions to the problems highlighted in the digital stories. Furthermore, the participants expressed that the use of DST improved their ability to engage with one another and understanding of various cultures. Evidently, DST creates a constructivist learning environment in the classroom settings and improves the students’ learning motivation (Yang et al., 2020). The inclusion of DST in the integrated learning methods engages students and improves their learning outcomes:

“I think digital storytelling is a complex and staged process. This process engages students in collecting, creating, analyzing, and combining visual artifacts with the written script of the story. Creating our digital storytelling required me and my teammates to become familiar with computers, image capture devices, digital media software, audio capture devices, and multi-literacy skills, such as cultural literacy, information literacy, narrative literacy, visual literacy, and media literacy as well.” (P5)

“From my viewpoint, I believe that digital storytelling honed my multidimensional skills, which not only developed my language, but also enhanced my content knowledge and literacies. Digital storytelling provided a new avenue for my classmates to share and discuss our life experiences. It empowered us to be creators of multimodal narrative texts. Through the creation of our digital storytelling, my teammates and I were actively engaged as problem solvers as we made decisions about the images, thought about the captions we offered for images, and co-edited these scripts into one digital story draft.” (P6)

Besides that, the participants noted how the implementation of DST increased their efficiency in decision-making and negotiation, critical thinking, creative thinking, reflective thinking, problem-solving, mutual support, and group work. For instance, the participants gained better understanding on the multifaceted perspectives of the events and characters in the stories through collaborative efforts. They realized and appreciated that the support and guidance provided by the teachers helped to simplify their research process, planning, and application, as they simultaneously learned how to develop their digital stories. In social and cognitive engagement with peers, children somehow develop the capacity to construct and share meaning, which is a highly valuable form of skill. Through an interactive process that promotes discussion, negotiation, and sharing, they can build meaning and knowledge as a group (Schmoelz, 2018). DST promotes student-centered learning strategy, which develops collaborative skills to build meaning and knowledge as a group.

Exploit of the Digital World

Everyone is now able to make use of the digital tools for various purposes, regardless of their financial or educational background. The introduction of digital cameras, personal computers, scanners, and simple-to-use software has contributed to the growing popularity of using DST in various learning institutions worldwide. The conventional teaching and learning strategies have now transformed into digital-based teaching and learning strategies (Wu & Chen, 2020). One of the participants expressed the positive impact of incorporating DST within the classroom settings:

“... The impact of digital storytelling in class has been mostly positive as new technologies have been given to us and helped to enhance our knowledge, skills, and therefore, enhance our standard of education.” (P3)

The majority of the participants in this study believed that the use of DST within the classroom settings boosted their level of involvement, sense of achievements, and overall motivation. They considered that the incorporation of technologies in learning improved their overall performance. The use of DST piqued their attention and engaged them in deep and meaningful learning, which reaffirmed the significant potential of innovative digital teaching strategies. As the participants were directly exposed to the materials through the use of DST, they were able to recall all events, situations, explanations, and reasoning of the presented digital storytelling pieces.

Additionally, the presentation of digital stories provided the opportunity for the participants to converse and connect more as they shared their digital stories. This digital approach provided them the necessary amount of exposure to a new language. The engagement of the participants in creating and presenting their digital stories offered them various opportunities to participate in various learning circumstances—for examples, reporting information, synthesizing ideas, and debating can help students to improve their writing skills. Furthermore, the participants were prompted to apply their newly acquired knowledge and skills in activities like analysis, synthesis, evaluation, and problem-solving. The capacity to use digital tools in learning can certainly benefit students. In this case, the use of DST clearly enhanced the overall quality of the participants’ learning experience.

Problems of Digital Storytelling

Surprisingly, none of the participants expressed dissatisfaction with the use of DST. The participants’ familiarity with the digital tools contributed to their high adaptability in this DST project. Moreover, they noted how the teachers’ expansive knowledge and experience helped them to complete the project without any problem. The participants’ genuine responses on the problems of DST are presented in the following:

“... I think there were no big issues while using digital storytelling.” (P1)

“I do not think we encountered any problem in using storytelling in our class.” (P3)

“I do not think there were any problems found while applying our created digital storytelling.” (P7)

One of the participants mentioned that they encountered technical issues with the Internet connection, which affected their project, but the issues were promptly resolved:

“To be frank with you, we almost had no big problems, but we occasionally encountered minor Internet problems that were resolved immediately.” (P2)

There were no major issues in the implementation of DST for the participants. Although the use of DST in the classroom essentially requires good Internet access, technical issues like no Internet connection and inconsistent Internet speed affect the learning progress and the completion time of a DST project. However, such issues do not frequently occur. In short, the use of DST greatly benefits the students, especially in enhancing their CLS. The implementation of DST is indeed a successful strategy for language learning.

Involvement of Digital Storytelling

With enthusiasm and active engagement, the participants unanimously agreed on the inclusion of DST in the official English curriculum on a large scale. They highlighted how DST should be integrated into their regular English instruction program and elaborated that creating a digital platform for the promotion of their DST would be a splendid idea. Further input and reviews from other students and members of the general public may be received, which will aid them in polishing their digital storytelling abilities even further (Yang et al., 2020). As evidenced by the interview findings, all eight participants, except one of the participants, revealed their support on the use of DST in the classroom:

“I would suggest that digital storytelling be a part of our English formal course.” (P3)

“I believe that digital storytelling should be included in our formal English course as it is exciting and engaging for me and my classmates as well.” (P5)

“I believe that digital storytelling should be included in our formal English course as it is fascinating and engaging for me and my classmates as well.” (P8)

Students' Views on Digital Storytelling

This study gained valuable insights on how students view DST. The participants expressed highly favorable responses on the use of DST in language learning, especially CLS. Overall, they were pleased with their experience of using DST. The majority of the participants also revealed that the use of DST enhanced their critical thinking skills. The obtained results of the pre-test and post-test complemented the obtained qualitative findings in this study. Similar results were also reported in numerous studies (Hamdy, 2017; Huang et al., 2017; El-Harbi, 2016; Niemi & Multisilta, 2016; Avci, 2021), which reaffirmed the significance of DST.

Abubaker et al. (2015) identified the lack of listening opportunities to enhance listening skills within and beyond the classroom settings as one of the factors that affect Arabic students' development and improvement in learning skills. As for the current study, it was evident that the overall process of creating and presenting DST in group benefitted the participants, especially in terms of their CLS. The majority of them agreed on how this approach helped them to improve their listening skills. The strategic use of DST, whether in or out of the classroom, can be a simple and effective learning tool that greatly benefits these students. Students would not have issues of discussing and sharing knowledge with their peers within and beyond the classroom settings due to their familiarity with DST and previous learning experience.

In this study, the participants also gained the opportunity to collaborate with their peers under the guidance of teachers in the creation and presentation of digital stories, which enhanced their CLS. Listening activities allowed the participants to deal with the problems and the concept of generating meaning, which helped them to constructively discuss the idea of learning. “During listening classes, Saudi EFL instructors employ instructional approaches that favor the development of bottom-up skills, primarily to aid students with lower English proficiency who need to expand their language repertoire. The instructors adopt bottom-up listening exercises or activities and tasks designed to enable students to recognize lexical, grammatical, and pronunciation features and language forms at the word and sentence level. Focusing on bottom-up processing skills, the instructors ask students to distinguish individual sounds, recognize word boundaries and stressed syllables, listen for intonation patterns and specific details, identify grammatical forms and functions, recognize contractions and connected speech, and recognize linking words and phoneme sequences as they circle the words they hear. Other popular traditional listening activities that focus primarily on bottom-up processing include dictation, cloze listening, text-based multiple-choice questions, and similar activities that require close and detailed recognition and input processing.” (Al-Seghayer, 2015)

Al-Seghayer (2015) also added “Unlike instructors in process-oriented classrooms, Saudi EFL instructors are in charge of everything and are in total control of classroom activities. To teach specific, isolated listening skills, they select input, design, and sequence listening activities; determine tasks; and decide what constitutes a correct response. However, Saudi instructors mainly test students' listening abilities instead of helping them to cultivate their listening abilities by teaching them effective listening comprehension strategies”. According to Nurul Islam (2012) and Hamouda (2013) as both cited in Al-Seghayer (2015), listening is the least understood aspect of language teaching in the Saudi English classroom and is, therefore, a neglected skill. Moreover, teachers pay limited attention to this particular skill when designing their lessons, perhaps because they assume that listening comprehension skills will develop naturally within the process of language learning.

Marie-Sainte (2018) highlighted Arab students' lack of understanding of the grammatical structures of the language. The study further noted the inability of children or young learners to respond to their teachers verbally or by any other kind of communication, apart from just silence, within the context of foreign language learning. However, the introduction of the concept of DST to Saudi ninth graders at MOIS revealed favorable and promising responses. Following the implementation of this DST

project, the participants revealed that they did not encounter any difficulties during the critical listening lessons. They experienced happiness and satisfaction as they were able to match with their laidback peers for the group tasks. Besides that, they found that the collaborative activities were entertaining and helped them to become more fluent in the language, especially in the aspect of their CLS.

In addition, the participants were able to create strong relationships with their team members as they shared and discussed ideas during the critical listening activities in this DST project. Under the guidance of teachers, as well as the instructions and cue cards, the participants were prompted to independently and competently complete the assigned critical listening tasks, which contributed to the development and improvement of their CLS. The participants also expressed their appreciation for the valuable opportunity to explore real-world actions and authentic dialogues in realistic settings. The DSL project exposed them to their first genuine experience and opportunity to engage in such learning activities, which had helped them to enhance their critical thinking skills. Students were able to improve their language proficiency, critical thinking skills, and self-assurance due to DST. Based on these findings, it can be concluded that DST enhanced students' CLS.

However, one of the participants noted dissatisfaction with the Internet connection. Such issue makes it more challenging for the students to participate and complete their DST project. It is essential for the students to have reliable Internet connection and make use of the most appropriate digital tools to work on the activities.

Effectiveness of Digital Storytelling

This study explored the practicality and effectiveness of using DST in enhancing students' CLS. The experimental and control groups demonstrated statistically significant difference in their critical listening performance. The participants in the control group were subjected to a conventional listening approach. They did demonstrate enhanced accuracy in listening, but no significant improvement in their CLS. Meanwhile, the participants in the experimental group were subjected to the DST project. These participants demonstrated enhanced CLS. The comparison of CLS performance between both groups revealed that the performance of the experimental group surpassed the performance of the control group by a large margin, indicating the success of DST in this study. The participants who received instructions via DST recorded more significant improvement in CLS than those who received training using the standard listening strategy. Furthermore, repeated exposure to the exact words or content through DST promoted more effective learning among students.

After all, studies have demonstrated the need for students to connect and collaborate, especially for long-term projects, in order to exchange and share ideas. Being able to connect and collaborate supports students' learning progress. Numerous prior studies demonstrated the need for peer assistance in long-term projects for more efficient learning. Through such peer feedback and discussion, students can gain new knowledge and learn more effectively. They can gain significant amount of meaningful linguistic information, which assists them in completing the assigned tasks.

The current study's results and findings supported the findings of several prior studies that explored the influence of DST on listening skills (Gakhar & Thompson, 2007; Spicer, 2013; Hamdy, 2017; Huang et al., 2017; Niemi et al., 2018; Avcı, 2021). For instance, Phillips (2000) advocated the use of DST in critical listening exercises for specific cases, which were consistent with the current study's findings. As discussed by Gakhar and Thompson (2007), the use of DST, as a form of classroom management system, simultaneously promotes the participation of students in speech exercise and improves their communication proficiency in both English and other languages. Furthermore, a parallel between DST and real-life scenarios has been advocated, in which a student seeks knowledge from other students for information exchange or learns about a particular subject. Besides that, Spicer (2013) noted that various studies have demonstrated the use of DST in enhancing students' listening skills, self-efficacy, and overall learning performance, which supported the study's results on how the experimental group recorded statistically significant improvement in listening scores. The study further discussed the significance of incorporating DST into the workflow in enhancing the overall work quality, such as improved idea generation. In another similar study, Hamdy (2017) found a statistically significant relationship between the use of DST and students' listening scores. On a similar note, the participating teachers in the current study reported how students who were exposed to the use of DST demonstrated better performance than their peers who did not participate in the DST project. Avcı (2021) reported similar findings on how DST improved the students' listening scores and skills.

Evidently, the use of DST enhances students' listening skills, especially their CLS. Apart from demonstrating the implementation of DST within the context of listening instruction, the current study presented notable findings on the effectiveness of DST as a listening teaching strategy that can develop and enhance students' CLS within the classroom settings.

Conclusions

The current study quantitatively and qualitatively explored the use of DST in enhancing Saudi ninth graders' CLS. The quantitative results revealed that both control and experimental groups did demonstrate improved mean critical listening scores. However, the obtained t-test results revealed statistically significant differences between the mean scores of the control and experimental groups in CLS and related sub-skills, namely auditory discrimination, analysis, inference, and evaluation and judgment skills, which highlighted the effectiveness of DST in enhancing CLS within the classroom settings. Meanwhile, the qualitative findings revealed that the participants regarded DST as a straightforward and effective tool that assisted them to communicate more effectively in the classroom and maximize their time in learning. The use of DST helped the students to develop confidence, enhance language proficiency, and expand their vocabularies and CLS. Despite the significant benefits of DST, the participants expressed several concerns—for instance, they were concerned about their team members' language proficiency, the support from teachers, and the lack of time to prepare for listening exercises and peer engagement. Nonetheless, these concerns did not affect the effectiveness of DST in enhancing the participants' CLS. The interviewed participants expressed favorable responses on the use of DST, which corroborated the study's results and findings on the significance of DST. In conclusion, the use of DST clearly benefits the development and improvement of CLS, especially among Saudi ninth graders.

Pedagogical Implications

The current study presented significant pedagogical implications on various stakeholders, especially the students at MOIS, when it comes to receiving listening instruction or lessons. Teachers can make use of DST as a valuable teaching tool in guiding their students to develop and enhance their CLS. Based on the findings of this study, it is evident that teachers should acknowledge and implement the use of DST as an alternative tool that can cater the diverse types and purposes of listening within the classroom settings. For instance, DST in this study prompted the participants to become more engaged with the assigned critical listening activities that aim to promote CLS or listening for leisure purposes. Besides that, teachers may consider incorporating DST into the language learning structure and design in order to provide more opportunities for the students to improve their listening skills and discuss the content of a topic in realistic settings. Through DST, students can take part in listening activities in a more laidback and enjoyable manner. At the same time, the use of DST inculcates different strategies and skills that benefit students. As for the case of students with limited language proficiency, teachers should consider the availability of linguistic resources and strategize the amount of time spent on DST in the classroom to make sure that all students are able to participate with ease. Similar to other instructional strategies, teachers must be proficient and competent in using and incorporating DST as a component of listening instruction in the classroom, as the instructional success in listening activities depends on the capacity of the teachers to communicate effectively.

Limitations of Study

Similar to other prior studies, the current study consisted of several limitations, as the scope of this study did not allow a comprehensive assessment of DST techniques and applications. Therefore, the findings and conclusions should be interpreted with caution. Firstly, there was limited time available for the DST project. This study had only 10 weeks to complete the project, which incorporated two 45-minute critical listening classes per week for four weeks. There may be different results or findings if there were more time for the study to conduct the DST project.

Secondly, a mixed-methods approach was adopted in this study, which raised some concerns during the research process. For instance, the researcher had to set up recording equipment for qualitative data collection, which may influence the responses and feedback of the participants. The participants may feel uncomfortable that they were being observed and recorded, resulting in potential bias or inconsistencies. The Hawthorne effect may take place under such circumstances. The use of instruments may help to reduce potential bias or inconsistencies, but the study may not be able to generalize the results and findings drawn from the data.

Thirdly, the study employed a quasi-experimental design for the quantitative data collection. The implementation concept of this research design itself was unique. It was not plausible to present a comprehensive overview of the use of DST in relation to CLS based on the viewpoints of Saudi ninth graders from the entire population. This study exclusively targeted ninth graders at MOIS in Riyadh, Saudi Arabia. Studies have noted that the inherent nature of quasi-experiments, conducted with non-randomized samples, can provide confidence to a certain extent; that improvements were confirmed only in this particular set of data. Therefore, the discussed results and findings should be carefully integrated when used for inference purposes. In other words, the current study may not provide evidence on the causal effects, but it did provide support on the use of DST in the educational contexts.

Besides that, this study involved only two classes of ninth graders at MOIS for the pre-post test and eight ninth graders for the semi-structured interview due to time and other practical constraints. The sample size may not be adequate to determine the extent of the influence of DST on Saudi ninth graders' CLS. As a result, drawing factual inferences from a limited number of participants in this study was challenging. Additionally, it was not feasible for the current study to document all strategies used by the participants to enhance their CLS. Therefore, during the discussion to create meaning from digital stories, the participants' ideas and strategies were noted to determine whether they comprehended what was being communicated. Although the list of listening techniques may not be exhaustive, it offered an overview of the types of listening strategies adopted among students.

Recommendations for Future Research

The current study presented significant findings on the usefulness of DST in boosting students' CLS. However, this study had certain limitations, the sample size was about 70 students and they represented only one prep school of thousands of schools in Saudi Arabia. This was one of the limitations which faced the researcher as it was difficult to generalize the results on all the Saudi prep schools. To address this limitation, more research should be done within various contexts and larger sample sizes to ensure the same findings.

In light of the results of the current study, the following areas for future research were suggested such as designing other teaching strategies based on DST to be used in developing the four language skills as well as a program-based DST to develop oral communication skills.

After all, more studies on the use of DST are necessary due to the growing popularity of DST (Gakhar & Thompson, 2007; Spicer, 2013; Hamdy, 2017; Huang et al., 2017; Niemi et al., 2018; El-Harbi, 2016; Avci, 2021). Therefore, it is recommended for future research to further evaluate the efficacy of incorporating DST into CLS activities in the classroom settings.

It is also recommended to conduct follow-up studies using appropriate experimental design to determine the replicability of the study's findings. A similar strategy that includes training conventional classroom teachers on how to incorporate DST should be applied for the remedial trials. Follow-up studies may entail testing this teaching approach with diverse demographic characteristics—for examples, gender, age groups, or students with different linguistic backgrounds or L1 proficiency levels. These characteristics may serve as potential factors that influence students' performance, including CLS, during the DST exercise. Exploring the influence of these characteristics in relation to DST and CLS may provide better understanding on how students respond to the use of DST in the classroom settings.

Last but not least, it is recommended for future research to explore any variations in frequency of use, types of listening methods used by students, and other related aspects prior to and after DST intervention. This helps to determine whether the students absorb CLS that their peers adopt and the extent of their application after the intervention.

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