

Article

Using Digital Storytelling to Improve Pupils' Speaking Skills in the Age of COVID 19

Viknesh Nair  and Melor Md Yunus 

Faculty of Education, Universiti Kebangsaan Malaysia, Bangi 43600, Selangor, Malaysia

* Correspondence: vikneshnair13@gmail.com (V.N.); melor@ukm.edu.my (M.M.Y.); Tel.: +603-8921-6277 (M.M.Y.)

Abstract: Speaking in English is one of the most important skills that students must learn in school, and it is a pertinent tool for communicating in the real world. However, pupils in rural schools often faced difficulty in conversing in the English language, as they did not have adequate opportunities or an engaging environment to practice the language, especially during the COVID-19 pandemic. It was observed through School-Based Assessment (SBA) that pupils had limited levels of fluency, accuracy, and pronunciation. Hence, this quasi-experimental study aims to investigate the use of Toontastic 3D, a digital storytelling app, to improve pupils' speaking skills. In this study, a pre- and post-test and a questionnaire were used as methods for data collection. The findings revealed that the potential benefits of digital storytelling had a beneficial impact on pupils' speaking skills. The findings also demonstrated that digital storytelling engaged students in the story's content not just by encouraging motivation and curiosity but also by instilling confidence in their ability to speak in English. The results from the questionnaire indicate that digital storytelling facilitates 21st-century learning by allowing interactive and collaborative learning that encourages pupils to speak English. Moreover, pupils were more engaged, confident, and motivated to converse in English. Hence, digital storytelling, especially in the age of COVID 19, can be utilised as an effective teaching repertoire to create a dynamic learning environment that stimulates students to participate actively during speaking classes.

Keywords: digital storytelling; digital learning; speaking skills; collaborative learning; COVID 19; education



Citation: Nair, V.; Md Yunus, M. Using Digital Storytelling to Improve Pupils' Speaking Skills in the Age of COVID 19. *Sustainability* **2022**, *14*, 9215. <https://doi.org/10.3390/su14159215>

Academic Editors: Pablo Alejandro Quezada-Sarmiento, Patricia Marisol Chango Cañaveral and Linda Hagedorn

Received: 26 April 2022

Accepted: 28 June 2022

Published: 27 July 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

In today's increasingly globalised society, English literacy is seen as a critical skill [1]. English is widely acknowledged as the universal language of communication, and it should be prioritised to improve individual English growth abilities so that students are prepared to thrive in the Fourth Industrial Revolution [2]. Since the importance of the English language and the growing need to enhance spoken English are being emphasised all over the world, the Common European Framework of References for languages (CEFR) was introduced in the revised Kurikulum Standard Sekolah Rendah (KSSR) to cater to the international standard [3].

The growth of Information and Communication Technology (ICT) has revolutionised the educational process in the twenty-first century, and the use of ICT in the educational process may assist teachers and students in discovering information pertinent to their education [4]. Since technological innovation has played a key part in language teaching and learning today, whether through software or hardware, technological media can be an excellent remedy to the aforementioned challenges [5].

Furthermore, including mobile devices as a teaching–learning medium in language classrooms has resulted in a number of beneficial effects, as it enables collaborative classroom activities and enriches authentic classroom activities via mobile applications and internet sites [5]. Ref. [6] posited that the invention of computers, mobile phones, the

internet, and social media has made studying a lot easier, more fascinating, and more sophisticated, especially for English language learners. Moreover, it has provided significant assistance to educators in efficiently educating and training students, as well as in creating a comprehensive, holistic environment in which instructors may enhance their speaking, listening, writing, and reading abilities.

In Malaysia, English is a topic that must be learned in all primary and secondary schools. English is formally taught and acquired as a core subject and second language (L2) in all public schools [7]. Despite spending a significant amount of time learning the English language, a large proportion of Malaysian students still struggle to communicate in English [8]. As a result, it is pertinent to determine appropriate learning techniques and materials in order for students to learn a language effectively, and the onus is upon educators to utilise more innovative teaching and learning approaches in an ESL classroom [8].

During the COVID-19 pandemic, many families around the world were in distraught by the severe short-term disruption where online teaching was implemented without proper guidelines or testing, and home education impacted parents and students' social life and learning process [8]. Educational institutions in Malaysia carried out online teaching via various platforms and applications during the pandemic [9]. As a result, schools were eager to adopt online teaching methods, and the government established an online medium for exchanging information, while traditional classroom teaching and learning were discontinued and replaced with e-learning [9].

Despite evidence stating that online education is an alternative method to avoid a complete halt in pupils' learning processes and to provide a platform for pupils to learn, a recent study by [9] showed that the teaching and learning process was occurring, yet it did not provide an engaging and supportive learning environment for the pupils. Jan's case study found that teachers utilised too many apps, which caused confusion and stress among parents and pupils. Aside from that, it has placed a burden on both parents and students, as students' primary concentration is on completing various tasks independently. In addition, [9] highlighted that there was no interaction among peers or emphasis on communication skills tasks, thus reducing the opportunities for exploration and explanations. According to [10], the students were simply asked to complete the learning videos, assignments, teaching plans, homework explanation videos, and homework answers for each topic in the learning platform on a regular basis.

The teaching and learning process focuses on completing the task rather than providing an engaging atmosphere, especially speaking skills [10]. There is a need to determine a practical approach to providing a supportive English language learning environment in the COVID-19 age to improve speaking skills, rather than focusing solely on completing homework and assignments.

1.1. Problem Statement

During speaking lessons via online classes, the researcher observed that without support, students were unable to adequately express events and tales to an audience. Students are frequently confronted with difficulties such as insufficient preparation, a lack of self-confidence, and a fear of making errors, all of which cause them to avoid participating in the speaking lesson. They showed less interest and motivation towards the learning activity, as the medium used was not engaging. As asserted by [11], since the technique or medium of communication employed is ineffective, the level of pupils' speaking skills remains low.

Hence, this study aims to use a digital storytelling mobile application, Toontastic 3D, to improve the speaking skills among Year 5 pupils in a rural school and provide a supportive English language learning environment in the age of COVID-19, as digital storytelling encourages students to use the language relatively in natural communication [12]. Since pupils are expected to discuss collaboratively and communicate actively in an informal setting, collaborative activities in digital storytelling will enhance students' understanding and communication skills [13].

1.2. Research Objectives

1. To investigate whether digital storytelling can improve pupils' speaking skills.
2. To identify the learners' attitudes towards learning collaboratively using digital storytelling.

1.3. Research Questions

1. Does the use of digital storytelling improve pupils' speaking skills?
2. What are the learners' attitudes towards learning collaboratively using digital storytelling?

1.4. Conceptual Framework

Figure 1 shows the conceptual framework for this study. With these elements integrated into digital storytelling, it is possible to improve pupils' speaking skills.

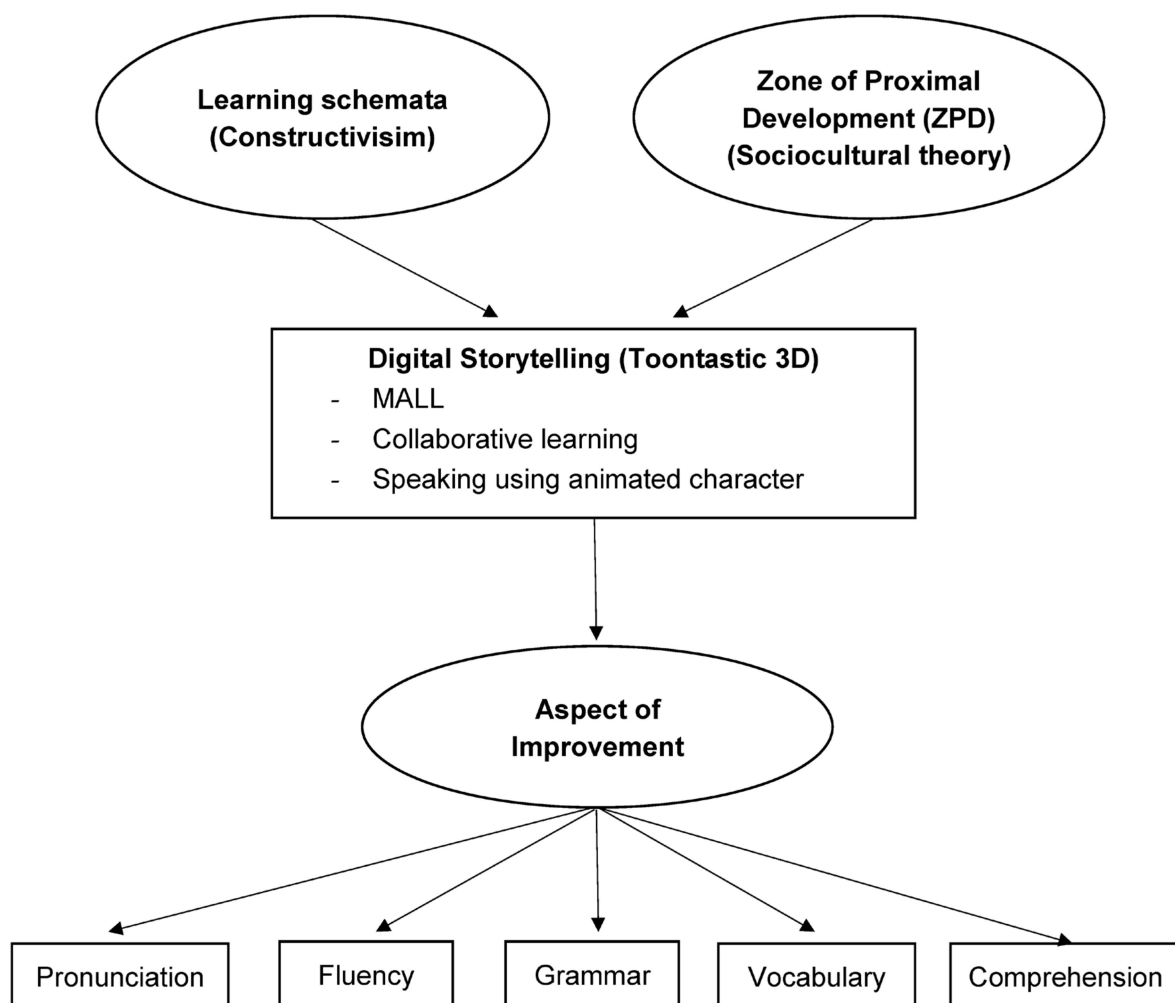


Figure 1. Conceptual Framework.

1.5. Theoretical Framework

1.5.1. Constructivism and Digital Storytelling

Pedagogy in education has shifted away from “passive” learning and towards “active”, participation, and more interactive learning over the last few decades [14]. Consistent with this direction, constructivism, on the other hand, proposes that through social interactions with their surroundings and reflection on their experiences, learners develop their knowledge of the target language that is most important to them [15]. Learning is a developmental process that builds on earlier learning experiences and knowledge, according to Piaget’s theory, and learning evolves into an active constructive process in

which new information, and world representations are assimilated and incorporated into previous mental constructs [16].

The key constructivist concepts of teachers let pupils create their own learning. Since learning is social, teachers should provide students with many opportunities to work in groups [17]. Conversations are essential for learning, and instructors should foster peer discussion about telling, writing, and performing tales with a competent third party. Thus, according to [17], digital storytelling for teaching and learning is based on constructivism, which can be a powerful tool for combining digital media into creative teaching and learning.

1.5.2. Sociocultural Theory and Digital Storytelling

In terms of the social aspect of constructivism, [18] explained that sociocultural theory is based on the work of L.S. Vygotsky, who claimed that society and cultural settings had a significant impact on the language acquisition process, and in the language acquisition process, the environment is the most essential factor. According to [19], the idea of mediation, the zone of proximal development (ZPD), ‘scaffolding’, and collaborative engagement are all key aspects of sociocultural theory. [19] also posited that during social and collaborative interaction in an educational setting, either the teacher or peers provide ‘scaffolding,’ or assistance that permits students to acquire the ZPD. Similarly, according to [20], the language process necessitates social involvement and collaboration among learners and their social surroundings (peers, instructors, and parents), with sociocultural approaches to mediation and the ZPD assisting in this process.

Deep discussions allow students to agree, disagree, and mutually criticise reasoning, allowing them to take advantage of the social aspect of learning with the ultimate objective of allowing members of the small group to ‘scaffold’ one another [19]. The constructivist classroom, which capitalises on the nature of social learning and employs scaffolding, reciprocal teaching, and classroom interaction, can be a successful learning environment [18]. Since a digital story is a strong work of art that might arise from a “shared experience”, sociocultural theory and digital storytelling have various similarities [14]. As stated by [21], learners may cooperate, engage, share ideas, assist, and encourage one another, as both digital and traditional storytelling may be a significant and successful social approach to improve learners’ speaking abilities.

2. Literature Review

2.1. Digital Storytelling (DST)

Digital storytelling, according to [22], is a new approach that is becoming more prevalent in language education since digital technology improves students’ enthusiasm in learning and reduces their fear. As stated by [23], the philosophy behind digital stories is to combine the craft of storytelling with a range of digital multimedia and to present information on a particular subject. Almost all digital stories combine digital images, text, recorded audio storytelling, video, and music. Short films, usually two to three minutes long, are used to tell digital stories [24]. Digital storytelling, according to [22], brings students’ ideas together creatively, audibly, and kinaesthetically, as well as controls the learning process, improves confidence in learning, and inspires them to learn more. It is also seen as a method that helps teachers fulfill a range of student requirements while also motivating students to acquire and practice their speaking skills.

Digital stories are used in education to introduce new material, encourage conversation, and make abstract or conceptual topics more intelligible [25]. Using multimedia in the classroom, according to [25], assists with the retention of new knowledge and the comprehension of complex subjects. Students who make digital stories learn to organise their thoughts, ask questions, voice their opinions, develop narratives, and communicate their ideas and information in a unique and relevant manner [26].

It is also seen as a method that helps teachers fulfill a range of student requirements while also motivating students to acquire and practice their speaking skills. As a result,

many educational institutions throughout the world have begun to include digital storytelling activities in the classroom to assist students in developing their digital literacy skills [27]. In addition, digital storytelling has grown in popularity in second-language learning classrooms.

Digital storytelling is a sort of culturally sensitive training that helps English language learners improve their speaking abilities in a natural, engaging setting [28]. Students who use digital media to learn a second language may find themselves on the border, living two separate lives in their first and second languages [29]. By creating and working on relevant digital stories, students develop accurate vocal inflections and consistent emotions in the English language in important settings [27]. Students can connect their outside-of-class literacy experiences and knowledge to their classroom reading, writing, and content learning [28].

Due to the nature of digital storytelling, technology must be included in the narrative process. According to [29], one of the factors that contributes to the quality of storytelling is technology, which results in powerful, influential stories. Significantly, in recent decades, new media have emerged, not only in the creation of digital storytelling but also in a range of educational contexts. Due to improvements in information and communication technology (ICT), language learning has evolved from a method with passive learners to an active, meaningful learning experience [10]. Thus, ICT strategies, such as digital storytelling, have been shown to dramatically improve learners' performances, literacies, and capacities.

Digital stories are used in education to introduce new material, encourage conversation, and make abstract or conceptual topics more intelligible [25]. Using multimedia in the classroom, according to [25], helps students retain new knowledge and aids in the comprehension of complex topics. Students who make digital stories learn to organise their thoughts, ask questions, voice their opinions, develop narratives, and communicate their ideas and information in a unique and relevant manner [26]. Furthermore, when digital stories are published online, students have the opportunity to share their work with their peers and gain valuable experience analysing their own and other students' work, which can improve emotional intelligence and social learning benefits [25].

According to [30], since students may modify their spoken text and challenge themselves to be able to speak English as a foreign language, they can speak English in a non-threatening way by utilising digital storytelling. Digital storytelling, according to [31], is one of the alternative ways of making learning English entertaining since it allows students to develop their comprehension, skills, and educational standards.

2.2. Digital Storytelling and Collaborative Learning

The collaborative approach has been found to be a successful method of educating students of varied competence levels [32], and it has been combined with digital storytelling to allow students to collaborate on the creation and organisation of multimedia resources for storytelling. In language learning contexts, collaborative digital storytelling has been implemented to enhance motivation and engagement, particularly among young learners [18]. Collaboration permits or allows students in the digital storytelling project to share their ideas, and it is a fundamental element of learning in sociocultural theories [32].

According to [18], when students' communication skills develop, they become better group members, resulting in enhanced group dynamics and collaborative learning. Based on research done by [33], collaborative activities enable students of all levels of skill to work towards the same goals while allowing for various sorts of participation to increase pupils' engagement [34] stated that by using digital storytelling, pupils could work together in groups with fewer members. This eventually permits individuals to develop their speaking abilities by organising thoughts, communicating points of view, assessing, and synthesising information. This is supported by [35] research, which demonstrates how digital storytelling may be used to blend instructional materials with learning activities, resulting in more engaging and fascinating learning settings.

Furthermore, ref. [13] claimed that collaborative tasks in digital storytelling improve students' knowledge because they are required to work in groups to capture content and to actively interact in a natural and technological environment for knowledge generation and skill development. Based on research done by [36] on "The effects of digital storytelling on student achievement, social presence, and attitudes in online collaborative learning environments," instructors may fail to encourage student engagement because they have not created organised teaching techniques to match their requirements. As a result, students may feel isolated. According to [36], students may utilise digital storytelling to blend personal learning experiences with creativity and cooperation. This is actually an effective way to improve their involvement in online learning contexts.

2.3. *Toontastic 3D*

According to [11], English language students like using technology in the classroom, particularly digital programmes that use 3D animation, such as Plotagon and Draw Cartoons. Toontastic 3D is a relatively recent digital animation application format that is substantially equivalent to its predecessors. It is a 3-dimensional narrative animation software with captivating narration and the ability to record its own voice to inspire and instruct kids or users. Although the application's distribution technique is in English, it may be run or used in any language [11].

According to [36], users may utilise this programme by altering the available characters in accordance with the narration, scene, and plot generated so that the Toontastic 3D programme may assist pupils in developing imagination. The Google Play Store and the Apple Software Store both provide versions of the app that function on tablets, phones, and some Chromebooks. Toontastic 3D is suitable for youngsters aged 6 to 12 years and works both online and offline.

2.4. *Mobile Assisted Language Learning (MALL) and Speaking Skills*

With advanced mobile technology, Industry 4.0 has brought about rapid changes in various areas, including education. Mobile devices' progress has made them crucial instruments in education and language acquisition [5,37]. In order to make education as omnipresent as possible, both instructors and students are becoming more familiar with the use of mobile devices in the classroom and learning environment [38]. Furthermore, the rise of the internet has increased the use of mobile devices to the point where they are effective resources for education and language acquisition [39,40]. MALL refers to the use of mobile technologies to aid students' learning. They not only learn a second/foreign language in a classroom, but they also have the opportunity to participate in a variety of autonomous learning activities outside of the classroom [5].

Language learning that incorporates mobile devices and technology is known as Mobile Assisted Language Learning (MALL) [14]. In line with [41,42], smartphones, tablets, and laptops are examples of electronic computers used in mobile-assisted language learning, and these devices are referred to as mobile technology because of their versatility and portability. MALL is defined by [43] as "the utilisation of technology such as mobile phones, MP3 players, and palmtop computers for language learning." They further claim that "mobile learning" refers to learning that occurs on a mobile device and that it is a tool that will assist us in learning utilising our mobile devices.

According to [38], MALL is widely discussed, and utilising mobile phones to learn languages can be beneficial because they are such an essential part of our social lives. Refs. [44,45] have emphasised the importance and potential effectiveness of using smartphone applications in teaching and learning language skills in a 21st-century EFL context, and that smartphone applications must be considered because they have become an inseparable part of the learning process in previous studies in the area of MALL.

2.5. Related Past Studies on Using Digital Storytelling to Improve Speaking Skills

In [21] research about “Pedagogic effectiveness of digital storytelling in improving the speaking skills of Saudi EFL learners”, the findings demonstrated that the pupils struggled to converse in English and that using the digital storytelling technique helped them improve their overall ability to speak in English. Continuing with the passage of time, research was done in Malaysia by [46] entitled “Hear me out! Digital storytelling to enhance speaking skills” mentioned that digital storytelling encourages the development of speech abilities and increases motivation towards language learning in general and speaking skills. According to the findings, the pupils’ speaking skills improved following the intervention. Henceforth, educators should use digital storytelling as a technique to enhance their teaching repertoire and encourage students to speak English in the future.

The article “The effect of digital storytelling on students’ speaking at senior high school Ma’arif NU Benjeng” by [47] suggested that digital storytelling is a powerful educational tool that combines technology with stories, integrating text, pictures, and audio in creative stories. It may also be used to help students improve their English-speaking skills by allowing them to narrate tales in their own words. Likewise, in the study “Digital storytelling enhances students’ speaking skills at Zewail University of Science and Technology in Egypt” by [4], the results showed that it had a positive effect on the oral performance of students who used digital storytelling, as it is an excellent tool that allows students to practice and therefore improve their speaking skills both in and out of the classroom. Similarly, ref. [22] also pointed out that digital storytelling can improve oral production skills among young learners.

Research done by [12] on “Improving students’ speaking skills through Project-Based Learning (Digital Storytelling)” and some aspects of students’ speaking abilities, such as grammar, vocabulary, pronunciation, fluency, and confidence, improved as a result of the study’s findings. Additionally, students’ learning motivation rose as they put in more effort and appeared more engaged in the learning activity. Similarly, in a study done by [24], the findings revealed that digital storytelling provides realistic and relevant learning experiences for effectively developing students’ growth as fluent English speakers and creative thinkers.

The article “The effect of using Toontastic 3D on students’ speaking skills in eighth grade of Mts. Hifzhil Qur’an Medan in academic year 2020/2021” by [11] concluded that using Toontastic 3D improved students’ speaking abilities. In addition, ref. [48] conducted research in Yogyakarta to improve students’ speaking skills in retelling stories, and the results showed a great improvement in the post-test score. Digital storytelling, according to the findings of the survey, has the potential to encourage pupils to study and enhance their speaking abilities.

The article “Digital storytelling: An active learning tool for improving students’ language skills” by [35] pointed out that the integration of digital storytelling could improve collaborative learning, as pupils were reliant on one another for a variety of reasons, prompting them to create their own piece of art. During the procedure, group discussion, collaboration, peer correction, and self-learning were all observed. By the end of the research, the students who took part in the study had become more interested and confident in their communicative abilities. They learned how to organise, cooperate, and collaborate to achieve their goal throughout the narrative process. The findings also showed that students who took part in the study were also engaged and gained confidence in their communicative skills.

3. Methodology

The researcher decided to incorporate Toontastic 3D, as it is a useful and empowering educational complement to an existing ESL-speaking course. Apart from demonstrating its efficacy in assisting students in speaking English effectively and improving their vocabulary abilities, it also contributed to the pedagogical process by encouraging active involvement among students. Additionally, its user-friendly features, such as the touch screen feature,

offline agent, and smooth operations, allowed students to adopt and display favourable attitudes towards speaking activities. Compared to other researchers where the app is used in the classroom during face-to-face interaction, this research will present the use of Toontastic 3D during the pandemic era where pupils have to use the app in their distance learning.

The research participants for this study were chosen using the purposive sampling technique, which is based on the learners' ages (11 years old) and levels of English language competence (intermediate and low). The class contains 35 pupils, and the range of their language proficiency ranges from "Average Language Proficiency" to "Low Language Proficiency." Their proficiency level was evaluated by their English language performance on the School-Based Assessment in 2020 and 2021.

In this section, the researcher explains the implementation of the prescribed action. The participants that were chosen had limited levels of fluency, accuracy, and pronunciation in their School-Based Assessment (SBA). Following that, each of the research participants was given a consent form to sign as a confirmation of their involvement in the study, as well as pseudonyms and numbers to ensure confidentiality. The whole implementation of the research was continuously carried out for eight weeks, while the implementation of digital storytelling was carried out via Google Meet, as the research participants were learning through online classes due to the pandemic. As the initial phase of the data collection procedures, during the first week, a pre-test was conducted before the lockdown in May during the first week. The pre-test was carried out to identify the level of pupils' speaking skills based on Harris's Oral Rating Scale (Appendix A).

The sessions were continuously carried out for six weeks (Week 2 through Week 7). The research participants would discuss in groups via a break-up room (Google Meet) and create 6 digital stories from week two until week seven individually. The research participants sent their digital stories to a telegram group, as the researcher provided feedback. During the eighth week, the participants were given a post-test in which the setting was consistent with the pre-test, where they were required to narrate a story in groups without using the Toontastic 3D application based on the pictures given. Finally, a questionnaire (learners' attitudes towards learning collaboratively using digital storytelling) was carried out. This instrument was used to examine learners' attitudes about collaborative learning-based digital storytelling activities, and it quantified the data using a 5-point Likert scale.

The test results were the research's primary data, and the researcher administered the exam as an oral test by adopting an oral evaluation rubric (the adapted Harris's Oral Rating Scale by [46]). The significance of the mean score of the pupils' pre- and post-tests was tested using a paired sample *t*-test. SPSS software was used to obtain the test results. If the *p*-value is less than 0.05, there is a significant difference between the pre- and post-tests. A descriptive statistic was used to analyse the data. To measure the effect of digital storytelling on learners' attitudes in a collaborative learning environment, 35 Year 5 students completed a 25-item survey questionnaire adapted from Neo et al. (2012).

In order to strengthen the content validity of the instruments created, the researcher sought advice from a subject expert with 28 years of experience in the education field who is currently one of the School Improvement Specialist Coach (SIS+) for the English language in the Sabak Bernam district. On the other hand, the survey questionnaire's sets of items exhibit strong internal consistency as a consequence of the pilot studies, with a Cronbach's Alpha of 0.894, which is considered high and acceptable, and it represents a good internal consistency for the scale. This indicates that the survey questionnaire is a credible source of instruments that can be used in the main study to collect participants' attitudes on learning collaboratively through digital storytelling. The research procedures are summarised in Figure 2.

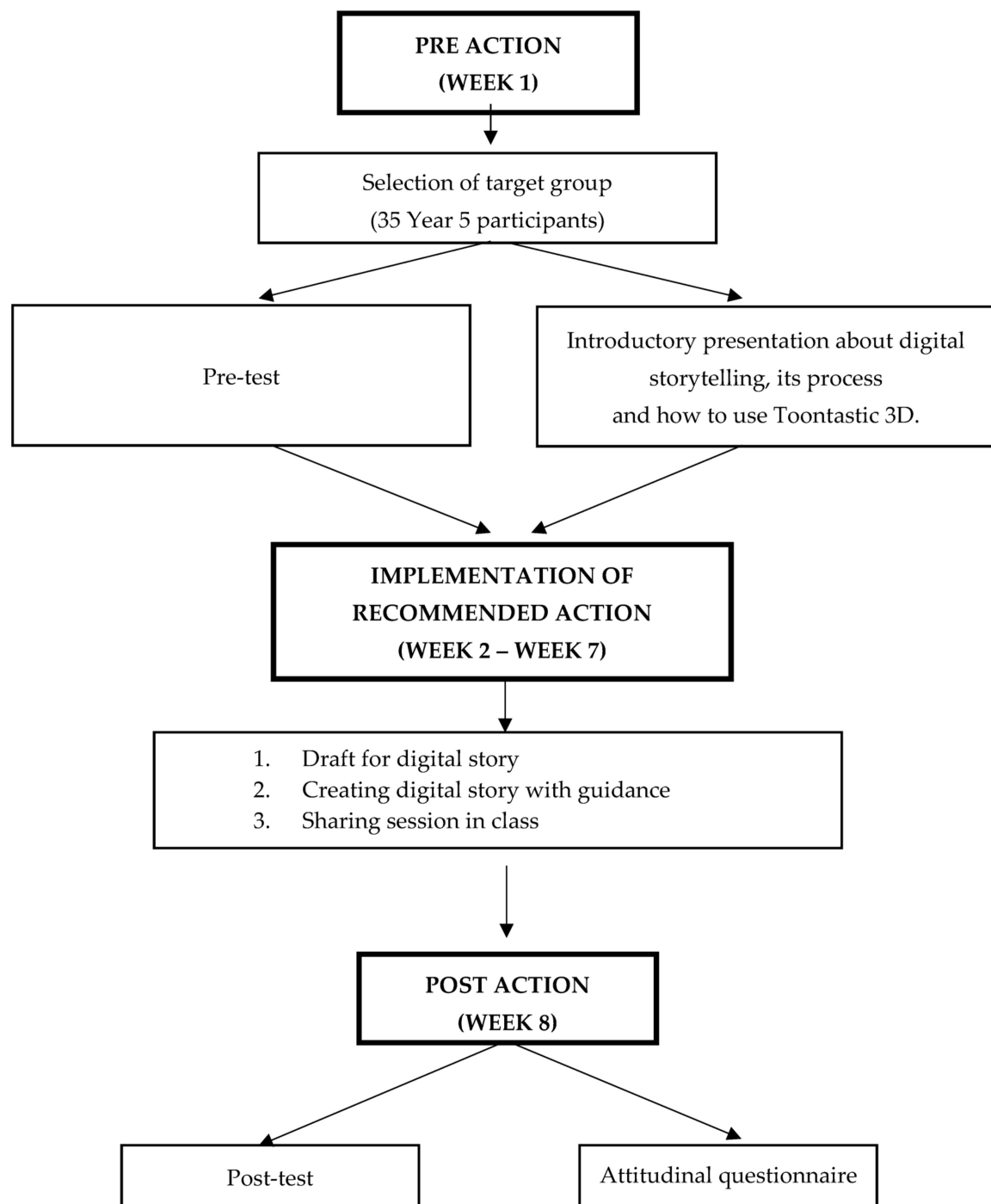


Figure 2. The action plan and data collection procedure.

4. Findings and Discussion

4.1. Pre- and Post-Tests

As mentioned in the previous chapter, one of the instruments used in collecting the data in this research was pre- and post-tests. The researcher gave the participants two types of tests: pre-test and post-test. In this part, the researcher presented the effectiveness of digital storytelling in improving pupils' speaking skills based on the results of the tests. The results of the tests indicate the effectiveness of the use of digital storytelling in this sample. Pupils' speaking skills were the variable that was measured in this research.

Table 1 shows the results of both the pre- and post-tests. From Table 1, it was observed that pupils were able to get better grades in the post-test after using Toontastic 3D. The

researcher observed that digital storytelling is a positive and inspiring process that can support students and their learning environment significantly. This was supported by [38] that digital storytelling helps the teacher create an environment that makes the learning process easier for students to comprehend. This study also found that digital storytelling can inspire pupils to speak the language confidently. Pupils used digital stories to share their ideas creatively, audibly, and kinaesthetically. The researcher was also able to control the learning process, improve confidence in learning, and inspire them to learn more.

Table 1. Students' level of speaking ability (pre- and post-tests).

Test Score	Level of Ability	Frequency		Percentage	
		Pre Test	Post Test	Pre Test	Post Test
80–100	Excellent	0	5	0%	14.3%
60–79	Good	5	16	14.3%	45.7%
50–59	Average	12	10	34.3%	28.6%
0–49	Poor	18	4	51.4%	11.4%

In this study, it was observed that the research participants were motivated to speak the language via Toontastic 3D as it has enjoyable features, and they can easily access the app via their smartphones. During the COVID-19 lockdown, the only technology accessible to pupils in rural areas was their smartphones. Hence, by using the Toontastic 3D application via their smartphones, it can be inferred that digital storytelling piqued pupils' interest in acquiring English-speaking abilities since they are learning in a new exciting environment.

Figure 3 shows the level of pupils' speaking skills based on the adapted Harris's Oral Rating Scale by [49], which focuses on pronunciation, fluency, vocabulary, grammar, and comprehension. There was a significant difference between the results of the pupils' pre- and post-test mean scores in all five speaking aspects. There was also an increase in the mean score for all five aspects. By using Toontastic 3D, the researcher managed to fulfill a range of students' requirements while also motivating students to acquire and practice their speaking skills. The results also indicate that the behavioural intention of pupils to use digital storytelling is mainly influenced by their positive e-learning experiences. This agrees with the research of [8], who concluded that learners had positive attitudes and perceptions towards Toontastic 3D, which aided in improving their speaking abilities [48] concurs by stating that digital storytelling can improve students' speaking skills as pupils are more attracted to learn via an e-learning environment and the results showed great improvement in the post-test score. Digital storytelling, according to the findings of the test, has the potential to encourage pupils to study and enhance their speaking abilities.

To provide more supporting details of the results, the researcher carried out a paired sample *t*-test to compare the participants' results in both tests. The paired sample *t*-test was done using SPSS software (version-IBM Statistic 20). Based on Table 2, there was a significant difference in the scores for participants' pre-test ($M = 41.2143$, $SD = 1.35310$) and participants' post-test ($M = 62.9286$, $SD = 1.29952$) conditions; $t(34) = 32.073$, $p = 0.000$. Since the test is statistically significant ($p < 0.05$), there is sufficient evidence to conclude that digital storytelling did significantly improve Year 5 pupils' speaking skills.

Based on the research findings, it is concluded that digital storytelling has the ability to improve pupils' speaking skills. According to [50,51], modern technology has become an integral component of human existence. They cannot be separated by technology since technological improvements benefit almost every aspect of life. Humans can readily converse via their mobile phones. Aside from the capacity to access the internet, mobile phones enable consumers to obtain all of the information they want. Students are in the same boat as the rest of us. They have made their mobile phones an essential part of their

identities. Therefore, due to the obvious rapid advancement of mobile phone technology, educators may now adapt numerous applications to engage students in their classes.

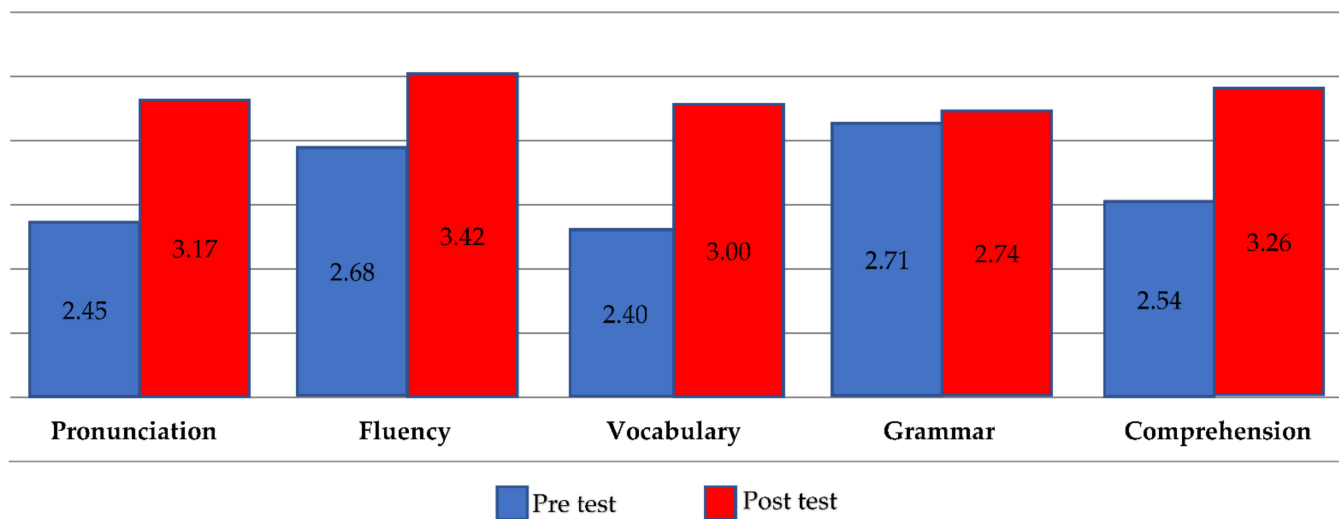


Figure 3. Comparison of pre- and post-test results on all speaking aspects (mean score).

Table 2. Comparison of paired sample *t*-test results.

Paired Samples Statistic							
	Mean	N	Std. Deviation	Std. Error Mean			
Post-test	62.9286	35	7.68804	1.29952			
Pre-test	41.2143	35	8.00504	1.3531			
Paired Samples Correlations							
	N	Correlation		Sig.			
Pair 1: Post-test & Pre-test	35	0.898		0			
Paired Samples Test							
	Paired differences						
	Mean	Std. Deviation	Std. Error Mean	95% Confidence interval of the difference	t	df	Sig. (2-tailed)
Post-test-Pre-test	21.7143	3.56264	0.6022	Lower	32.073	34	0
				Upper			
				18.09047	20.5381		

4.2. Attitudinal Questionnaire

To measure the effect of digital storytelling on learners' attitudes in a collaborative learning environment, 35 Year 5 students completed a 25-item survey questionnaire adapted from [52] (Appendix B). It is categorised into five sections: (1) positive interdependence, (2) individual and group accountability, (3) face-to-face promotive interaction, (4) interpersonal skills, and (5) group processing. There are five elements connected to the principle in each section. This instrument was used to examine learners' attitudes about collaborative learning-based digital storytelling activities, and it quantified the data using a 5-point Likert scale. The survey was completed by the research participants by placing a check mark on the box that corresponded to their answers for each item. The options are as follows: strongly disagree (SD), 1 point; disagree (D), 2 points; neutral (N), 3 points; agree (A), 4 points; and strongly agree (SA), 5 points. As the majority of the data collected was categorical, a non-parametric analysis strategy was used in which descriptive statistics such

as mean (M) and standard deviations (SD), as well as one-way and composite one-way frequency tables, were calculated on all questionnaire item responses that were investigated in the five sections of the questionnaire. The following section shows the descriptive results of the 25-item survey questionnaire administered to the research participants after the post-test.

Based on Table 3, it can be seen that the learners generally agree that collaborative learning using digital storytelling helps train them to be positively independent ($M = 4.5371$), promote their individual and group accountability ($M = 4.4971$), encourage face-to-face promotive interaction ($M = 4.4971$), boost interpersonal skills ($M = 4.5371$) and enhance their group processing ($M = 4.6114$). The small standard deviations for each section indicate that these scores' variations are small, implying that most learners agree on the advantages of collaborative learning using digital storytelling.

Table 3. Descriptive statistics of each construct.

Section	Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
Positive interdependence	35	3.80	5.00	4.5371	0.44397
Individual and group accountability	35	3.60	5.00	4.4971	0.47619
Face-to-face promotive interaction	35	4.00	5.00	4.4971	0.43756
Interpersonal skills	35	3.60	5.00	4.5371	0.45185
Group processing	35	3.80	5.00	4.6114	0.45230
Valid N (listwise)	35				

The outcomes of the attitudinal questionnaire provided an answer to the second research question on the learners' views of cooperative learning. In terms of attitudes, the pupils appeared to favour group activities over traditional lectures owing to the greater amount of contact and feedback. These are most likely best explained by the effect of peer interaction, a distinguishing element of digital storytelling, on learners' interests and motivation. Digital storytelling can be utilised to integrate instructional content with learning activities, creating more engaging and interesting learning environments. It was observed that digital storytelling has the ability to engage pupils, which indirectly enhances their interest and motivation.

The collaborative tasks in digital storytelling improved the students' knowledge because they were required to work in groups to capture the content and to actively interact in a natural and technological environment for knowledge generation and skill development. This is also supported by [53], who asserted that collaborative activities enhance classroom engagement.

5. Conclusions and Implications

Multimedia is a strong and effective tool for educating students, and educators should strive to include it in their classrooms and assignments in a variety of ways. Digital storytelling, in particular, is a successful technological tool for building academic abilities and motivation in pupils. Since the learner must investigate the subject, assess the facts, and produce tales, this medium combines higher-order thinking abilities into projects. At the same time, it helps teachers to improve students' grasp of new content and motivate them while working together in the classroom. As a result, digital storytelling provides a meaningful means for instructors and students to learn how to use technology effectively, both in and out of the classroom.

The research participants asserted that Toontastic 3D provides a chance to experience a new type of learning in a pleasant setting that supports student-centred learning and is

compatible with the learning styles and capacities of younger learners. The positive findings of this study provide academics and instructors with a first look at how to effectively use digital storytelling in language training. By involving students in the process of speaking via digital storytelling, their learning experiences become more appealing and motivating, allowing them to openly share their thoughts and experiences. According to the conclusions of this study, this may be accomplished by more efficiently utilising online platforms, while access to the internet does not appear to be a serious issue, even in developing nations.

The 'transformation' of traditional storytelling into digital storytelling as a result of technological advancement has introduced new dynamics to the educational setting; teachers and educators all over the world recognise the potential of digital stories and are beginning to explore their potential. Digital stories foster learners' multiliteracies, allowing them to develop the abilities required in 21st-century classrooms. Furthermore, the general benefits of digital storytelling, such as personal involvement, interpersonal interaction and interaction with peers, creativity, and reflection, highlight its value. Notably, the benefits of such a method are also seen in the teaching aspect. However, because digital storytelling is a multi-layered process that necessitates the use of technology and media tools, it is critical that the teacher be sufficiently qualified, technically supported, and pedagogically informed.

The COVID-19 outbreak had undesirable repercussions around the world, and educators need to equip themselves with online teaching skills that will not only promote active and autonomous learning. Various literature studies have proven that digital storytelling provides a positive learning environment and increases achievement and pupils' participation. Furthermore, including mobile devices as a teaching-learning medium in language classrooms has resulted in a number of beneficial effects, as it enables collaborative classroom activities and enriches authentic classroom activities via mobile applications and internet sites. Mobile-assisted language learning can be implemented in teaching-learning speaking by utilising the Toontastic 3D application. Teachers need to make efforts to adapt to the 'new norm' and put further time into incorporating modern approaches to teaching that will provide a fun learning environment for the learners.

As stated by [37], in Malaysia, there has been little research on the use of digital storytelling in English language classrooms with students of intermediate or lower skill levels. Considering the small number of previous studies conducted on using digital storytelling to improve rural primary learners' speaking performance within the local context, which remains largely unexplored, the value of conducting the current study would be clearer. Furthermore, more study on the use of digital storytelling in Malaysian CEFR classrooms would be advantageous since it would provide English educators with relevant insights into the numerous possibilities of teaching English-speaking abilities to students of various levels.

Digital storytelling is a meaningful and inspiring activity that has a significant impact on students and their learning experiences. Thus, digital stories promote learner engagement by allowing them to reflect on the learning process, use technological tools, and, akin to PBL, work for a set length of time, in a relevant context, to reach a specific goal, i.e., the development of digital stories. Another significant advantage for students is the development of multiple skills and literacies. Furthermore, the digital storytelling method allows learners to become members of a community with their peers, work, engage, and cooperate with them, and therefore build interpersonal and communication skills [52]. Moreover, digital storytelling encourages students to take control of their own learning, whether at school or at home, since they have resources and understand language patterns. Furthermore, parents may participate in their children's home learning by doing so with them. After being aware of the usage of the Toontastic 3D application, it is anticipated that students in rural primary schools will use them to maximise their potential and develop their speaking skills.

Teachers in 21st-century classrooms must properly integrate technology into their instruction. Thus, teacher education should use technology to engage students, find their

digital and media abilities, and lead students to discover their own multiliteracies [53,54]. According to [24], teacher education should be aware of the continuing changes in literacy and modify its teaching to account for these different literacies and how crucial it is for students to grow during their learning [48]. In reality, digital storytelling allows both instructors and students to improve their literacy skills, keep up with 21st-century educational trends, and reap reciprocal benefits in the process.

In terms of professional development for teachers, instructors should successfully utilise digital storytelling so that students' creativity is maximised. Teachers can also foster positive attitudes towards their students' creative ideas and provide constructive feedback to students, which inspires students and increases their creativity. Furthermore, teachers must carefully select the classes in which they wish to employ digital storytelling, since giving students more time and space to elaborate on their work is a good idea. Furthermore, teachers can encourage students to employ digital storytelling to address subjects covered in standardised exams.

6. Limitations of the Study

In terms of research background, this study was conducted in a rural Malay school in Sabak Bernam, Selangor. This school's community mostly speaks Malay, Banjar, and Jawa. Most of the locals here are mainly farmers and odd job workers. The socioeconomic status of the residents of this area ranged from average to poor. This research required pupils to use mobile phones to create digital stories via the Toonstastic 3D app. However, most of the pupils do not have their own mobile phones, so they have to share the device during group work. Weak internet connections are also a major problem in rural areas. The scope of the items to be administered for the research will only gauge the aspect of pupils' progress in their speaking skills before and after the implementation of digital storytelling, as well as their perceptions and attitudes towards using digital storytelling to improve their English-speaking skills.

7. Recommendations

As the application of simple sentence structures in this digital story was targeted at pupils with lower proficiency levels, those with average or higher proficiency levels would not benefit if they were taught to use simple sentence structures when narrating their digital stories. As a recommendation for future research, the language scope that students can use for their digital stories can be expanded by including complex sentence structures to suit a variety of pupils' language proficiency levels. Moreover, students with higher proficiency levels can create their digital stories by choosing the '*classic story option*' in the Toontastic 3D application, which requires students to create 5 parts for a story. By doing so, the digital story can be improved as a versatile learning tool, especially for classes of mixed-ability pupils.

Future research could utilise the digital storytelling application among larger groups of participants, such as students from different faculties and geographical areas. In addition, this study can possibly be carried out on a larger scale, encompassing numerous Primary 5 classes. For this research, there were only 35 participants from a rural school involved, and the results were convincing and encouraging. Thus, based on this positive outcome, the application has the potential to be applied in a different setting, especially in suburban schools.

The Toontastic 3D application can be used to improve not only students' speaking skills. As mentioned by [8], this application is versatile and can be integrated to enhance different language-learning skills. The current research mainly focused on improving their speaking skills, especially in narrating simple stories. However, educators can utilise this application to integrate various learning skills. For example, educators can use this application to improve their students' writing skills by inculcating script-writing activities. In addition, these digital stories can be effective stimuli to enhance their listening and

comprehension skills. Therefore, educators can profit from adapting Toontastic 3D as a multipurpose teaching tool in their teaching and learning processes.

Author Contributions: All authors contributed to several aspects of the study, specifically conceptualisation, V.N. and M.M.Y.; methodology, M.M.Y.; validation, M.M.Y.; formal analysis, V.N.; investigation, V.N.; resources, M.M.Y.; data curation, V.N. and M.M.Y.; writing—original draft preparation, V.N.; writing—review and editing, V.N. and M.M.Y.; supervision, M.M.Y.; project administration, V.N.; funding acquisition, M.M.Y. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by Universiti Kebangsaan Malaysia under research grant number GG-2020-024 and GG-2020-030. The APC was funded by Universiti Kebangsaan Malaysia.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. The adapted version of harris' oral english rating scale (Helmanda & Nisa, 2019).

No.	Criteria	Rating Score	Comments
1.	Pronunciation	5	The pronunciation is clear and quite understandable for elementary students.
		4	There are some pronunciation problems, but still quite understandable.
		3	Pronunciation problem necessitate listening and occasionally lead a misunderstanding.
		2	Very hard to understand because of pronunciation problem. Must frequently be asked to repeat.
		1	Pronunciation problem so severe as to make speech virtually unintelligible.
2.	Grammar	5	Errors in grammar are quite rare.
		4	There are few grammatical errors but still intelligible.
		3	Makes frequent errors grammar and word order occasionally obscure meaning.
		2	Grammar and word order errors make comprehension difficult. Must often rephrase sentences or restrict them to basic patterns.
		1	Errors in grammar and word order so severe as to make speech virtually unintelligible.
3.	Vocabulary	5	Almost all vocabularies used are in a proper use.
		4	Frequently use inappropriate terms or must replace ideas but still intelligible.
		3	Frequently uses the wrong word, conversation somewhat limited because of inadequate vocabulary.
		2	Misuse up words and very limited vocabulary make comprehension quite difficult.
		1	Vocabulary limitation so extreme as to make conversation virtually impossible.
4.	Fluency	5	Able to use the language fluently, rare skip, and the speed of speech are at the normal rate.
		4	Speed of speech seem to be slightly affected by language problem.
		3	Speed and fluency are rather strongly affected by language problem.
		2	Usually hesitant often forced into silent by language limitation.
		1	Speech is so halting and fragmentary as to make conversation virtually impossible

Table A1. Cont.

No.	Criteria	Rating Score	Comments
5.	Comprehension	5	Understand most of what is said at average speed.
		4	Understand what is said at average speed, but occasional repetition may be necessary.
		3	Understand what is said is at slower than average speed repetition
		2	Has great difficulty following what is said. Can comprehend only “social conversation” spoken slowly and with frequent repetition.
		1	Cannot be said to understand even simple conversational English

Appendix B

Table A2. 25-ITEM survey questionnaire based on Neo et al. (2012).

A. Positive Interdependent		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
1.	1. I felt happy about the success of the group as a whole.					
2.	We assisted each other while solving problems during the session.					
3.	I was able to share the load of the work with my group members.					
4.	I managed to depend on my members as they depend on me.					
5.	I was able to value the contributions of the other members of the group.					
B. Individual and Group Accountability		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
1.	I made positive contributions to the group.					
2.	I was able to find working cooperatively very motivating.					
3.	I managed to contribute my knowledge to the team.					
4.	I was able to share my knowledge, and take into account the knowledge of the other group members.					
5.	I was aware exactly of what my part in the group was.					
C. Face-to-face Promotive Interaction		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
1.	Cooperating in a group promoted better understanding of the subject.					
2.	By raising questions among group members help improved the understanding of the lesson.					
3.	The interaction with my peers helped improve my performance.					
4.	Interaction among group members helped me to obtain a deeper understanding of the subject.					
5.	We made effective decisions together as a group.					

Table A2. Cont.

D. Interpersonal skills		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
1.	I was able to listen to and respect the ideas of others.					
2.	Working cooperatively with my group is less stressful.					
3.	Through working cooperatively in a group helped improve my communication skills.					
4.	I was able to share my ideas, personality, workload, and so on with the rest of my group members.					
5.	I had the opportunity to communicate with my group members.					
E. Group processing		1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
1.	My group managed to achieve our group goals.					
2.	Working in group help enhanced cooperation among the group members.					
3.	I enjoyed working with my group members as a team.					
4.	Working cooperatively helped to reduce my misconceptions about the topic.					
5.	I was able to learn through my mistake and be tolerant with my group members.					

References

- Ushioda, E. The impact of global English on motivation to learn other languages: Toward an ideal multilingual self. *Mod. Lang. J.* **2017**, *3*, 469–482. [\[CrossRef\]](#)
- Woon, W.L.; Yunus, M.M. Pen Pals are now in your fingertips—A global collaboration online project to develop writing skills. *Creat. Educ.* **2018**, *9*, 2491–2504.
- Gurnam, K.S.; Sarjit, K.; Lee, J.C. CEFR-aligned school-based assessment in the Malaysian primary ESL classroom. *Indones. J. Appl. Linguist.* **2018**, *8*, 452–463.
- Nariyati, N.P.L.; Sudirman, S.; Pratiwi, N.P.A. 2020. EFL pre-service teachers' perception toward the use of mobile assisted language learning in teaching English. *Int. J. Lang. Educ.* **2020**, *4*, 38–47. [\[CrossRef\]](#)
- Indrastana, N.S.; Rinda, R.K. The implementation of mobile-assisted language learning through YouTube vlogging to boost students' speaking performance. *Int. Conf. Soc. Sci. Humanit. Public Health* **2021**, *514*, 50–54.
- Meenakshi, S.Y. Role of social media in English language learning to the adult learners. *Int. J. Linguist. Lit. Transl.* **2021**, *4*, 238–247.
- Singh, C.K.S.; Singh, T.S.S.; Ja'afar, H.; Tek, O.E.; Kaur, H.; Moastafa, N.A.; Yunus, M.M. Teaching strategies to develop higher order thinking skills in English literature. *Int. J. Innov. Creat. Chang.* **2020**, *11*, 211–231.
- Burgess, S.; Sievertsen, H.H. Schools, skills, and learning: The impact of COVID-19 on education. *VoxEu* **2020**, *13*, 1–15.
- Jan, A. Online Teaching Practices during COVID-19: An Observation Case Study. *Soc. Sci. Humanit. Open* **2020**, *9*, 17. [\[CrossRef\]](#)
- Xia, J.P. Teaching for student learning: Exploration of teaching strategies based on protocol-guided learning. *Sci. Insight Edu. Front.* **2020**, *5*, 451–467. [\[CrossRef\]](#)
- Yoga, H.R. The effect of using Toontastic 3D on Students' Speaking Skills Eighth Grade of Mts. Hifzhil Qur'an Medan in 2020/2021 Academic Year. Master's Thesis, Universitas Islam Negeri Sumatera Utara, Sumatera Utara, Indonesia, 2020; pp. 1–93.
- Wahyuni, W.; Sujoko, S.; Sarosa, T. Improving students' speaking skill through project-based learning (digital storytelling). *Engl. Educ.* **2017**, *6*, 161–168. [\[CrossRef\]](#)
- Vivitsou, M.; Niemi, H.; Wei, G.; Kallunki, V.; Miao, R. Teachers' practices to support student work in digital storytelling: A study on Finnish and Chinese school teachers' experiences. *Int. J. Media Technol. Lifelong Learn.* **2017**, *13*, 1–23. [\[CrossRef\]](#)
- Glava, A.; Arvanitis, P.; Panagiotis, P.; Georgios, Y. Digital Storytelling in Language Education. Master's Thesis, Aristotle University of Thessaloniki, Thessaloniki, Greece, 2017.
- Simina, V.; Hamel, M.J. CASLA through a social constructivist perspective: WebQuest in project-driven language learning. *ReCALL*. **2005**, *17*, 217–228. [\[CrossRef\]](#)
- Kaufman, D. Constructivist issues in language learning and teaching. *Annu. Rev. Appl. Linguist.* **2004**, *24*, 303–319. [\[CrossRef\]](#)
- Okumus, A. The perceptions and preferences of 8th grade students in digital storytelling in English. *Int. Online J. Educ. Teach.* **2020**, *2*, 585–604.

18. Huang, Y.Y.; Liu, C.C.; Wang, Y.; Tsai, C.C.; Lin, H.M. Student engagement in long-term collaborative EFL storytelling activities: An analysis of learners with English proficiency differences. *J. Educ. Technol. Soc.* **2017**, *20*, 95–109.
19. Lantolf, J.P. *Sociocultural Theory and Second Language Learning*; Oxford University Press: Oxford, UK, 2000.
20. Tanaka, N. Collaborative interaction as the process of task completion in task-based CALL classrooms. *Jalt Call J.* **2005**, *1*, 21–40. [\[CrossRef\]](#)
21. Hayam, M. Pedagogic effectiveness of digital storytelling in improving speaking skills of Saudi EFL learners. *Arab. World Engl. J.* **2019**, *10*, 1–12.
22. Rodríguez Viteri, M.A. Digital Storytelling and the Oral Production Skill. Bachelor's Thesis, Universidad Técnica de Ambato, Ambato, Ecuador, 1 August 2020. Volume 9. pp. 1–61.
23. Soler Pardo, B. Digital Storytelling: A case study of the creation and narration of a story by EFL Learners. *Digit. Educ. Rev.* **2014**, *26*, 74–84.
24. Yang, Y.T.C.; Chen, Y.C.; Hung, H.T. Digital storytelling as an interdisciplinary project to improve students' English speaking and creative thinking. *Comput. Assist. Lang. Learn.* **2020**, *1*, 23. [\[CrossRef\]](#)
25. Robin, B.R. Digital storytelling: A powerful technology tool for the 21st century classroom. *Theory Pract.* **2008**, *47*, 220–228. [\[CrossRef\]](#)
26. Ohler, J.B. *Digital Storytelling in the Classroom: New Media Pathways to Literacy, Learning, and Creativity*; Corwin Press: Southend Oaks, CA, USA, 2013.
27. Chang, W.N. The effects of digital storytelling on student achievement, social presence and attitude in online collaborative learning environments. *Interact. Learn. Environ.* **2017**, *25*, 412–427.
28. Jamissen, G.; Hardy, P.; Nordkvelle, Y.; Pleasants, H. Digital storytelling in higher education. *Lond. Palgrave Macmillan* **2017**, *10*, 978.
29. McLellan, H. Digital storytelling in higher education. *J. Comput. High. Educ.* **2007**, *19*, 65–79. [\[CrossRef\]](#)
30. Lestariyana, R.P.D.; Widodo, H.P. Engaging young learners of English with digital stories: Learning to mean. *Indones. J. Appl. Linguist.* **2018**, *8*, 489–495. [\[CrossRef\]](#)
31. Syafriyadin; Haryani; Salniwati; Rosyidah, A.; Putr, A. Students' speaking ability in various text genres. *Int. J. Recent Technol. Eng. (IJRTE)* **2019**, *8*, 3147–3151. [\[CrossRef\]](#)
32. Nunan, D. *Collaborative Language Learning and Teaching*; Cambridge University Press: New York, NY, USA, 1998.
33. Niemi, H.; Niu, S.; Vivitsou, M.; Li, B. Digital storytelling for twenty-first century competencies with math literacy and student engagement in China and Finland. *Contemp. Educ. Technol.* **2018**, *9*, 331–353. [\[CrossRef\]](#)
34. Chiang, F.; Chiu, C.; Su, Z. Using digital storytelling to enhance elementary school students' creative thinking. *Adv. Mater. Sci. Eng. Int. Conf.* **2016**, *6*, 505–508.
35. Shahala, N. Digital storytelling: An active learning tool for improving students' language skills. *Int. J. Teach. Educ. Learn.* **2018**, *2*, 14–29.
36. Robin, B.R.; McNeil, S.G. Digital storytelling. *Int. Encycl. Media Lit.* **2019**, *13*, 1–8.
37. Rafiq, K.M.; Hashim, H.; Yunus, M.M.; Norman, H. iSPEAK: Using Mobile-Based Online Learning Course to Learn 'English for the Workplace'. *Int. J. Interact. Mob. Technol.* **2020**, *14*, 19–31. [\[CrossRef\]](#)
38. Costa, R.S.; Han, T. The effect of using a mobile application on EFL learners' beliefs about language learning (BALL). *Int. J. Dev. Educ. Psychol.* **2017**, *2*, 229–238.
39. Miangah, T.M.; Nezarat, A. Mobile-assisted language learning. *Int. J. Distrib. Parallel Syst.* **2012**, *3*, 309. [\[CrossRef\]](#)
40. Sutrisna, I.P.E.; Ratminingsih, N.M.; Artini, L.P. Mall-Based English instruction. *J. Pendidik. Indones.* **2018**, *7*, 30–40.
41. Aiman, W.U.; Shah, P.M.; Mohamad, M. Perception on the usage of mobile assisted language learning (MALL) in English as a second language (ESL) learning among vocational college students. *Creat. Educ.* **2018**, *9*, 84.
42. Hashim, H.; Yunus, M.M.; Embi, M.A. Factors influencing polytechnic English as second language (ESL) learners' attitude and intention for using mobile learning. *Asian ESP J.* **2018**, *3*, 195.
43. Kukulska-Hulme, A.; Shield, L. An overview of mobile assisted language learning: From content delivery to supported collaboration and interaction. *ReCALL.* **2008**, *20*, 271–289. [\[CrossRef\]](#)
44. Abugohar, M.A.; Yunus, K.; Rashid, R.A. Smartphone applications as a teaching technique for enhancing tertiary learners' speaking skills: Perceptions and practices. *Ijet Int. J. Emerg. Technol. Learn.* **2019**, *14*, 74–92. [\[CrossRef\]](#)
45. Yunus, M.M.; Zakaria, S.; Suliman, A. The potential use of social media on Malaysian primary students to improve writing. *Int. J. Educ. Pract.* **2019**, *7*, 450–458. [\[CrossRef\]](#)
46. Precintha Rubini, A.; James, P.P.; Yong, K.L.; Yunus, M.M. Hear me out! Digital storytelling to enhance speaking skills. *Int. J. Acad. Res. Bus. Soc. Sci.* **2019**, *9*, 190–202.
47. Nikmatul, A. The Effect of Digital Storytelling on Students' Speaking at Senior High School Ma'arif NU Benjeng. Master's Thesis, University of Muhammadiyah Gresik, Jawa Timu, Indonesia, 2018. Volume 4. pp. 9–15.
48. Rositasari, I. The Use of Digital Storytelling to Improve Students' Speaking Skills in Retelling Story. Ph.D. Thesis, Sanata Dharma University, Yogyakarta, Indonesia, 2017; pp. 26–29.
49. Helmanda, C.M.; Nisa, R. The analysis of students' oral performances by using speaking scoring rubric. *J. Dedik. Pendidik.* **2019**, *3*, 76–86.

50. Arif, F.K.M.; Zubir, N.Z.; Mohamad, M.; Yunus, M.M. Benefits and challenges of using game-based formative assessment among undergraduate students. *Humanit. Soc. Sci. Rev.* **2019**, *7*, 203–213.
51. Halim, M.S.A.A.; Hashim, H.; Yunus, M.M. Pupils' Motivation and Perceptions on ESL Lessons through Online Quiz-Games. *J. Educ. E-Learn. Res.* **2020**, *7*, 229–234. [[CrossRef](#)]
52. Neo, T.; Neo, M.; Kwok, W.; Tan, Y.; Lai, C.; Zarina, C.E. MICE 2.0: Designing multimedia content to foster active learning in a Malaysian classroom. *Australas. J. Educ. Technol.* **2012**, *28*, 857–880. [[CrossRef](#)]
53. Kai, S.W.C.; Tse, S.K.; Chow, K. Using collaborative teaching and inquiry project-based learning to help primary school students develop information literacy and information skills. *Libr. Inf. Sci. Res.* **2011**, *33*, 132–143.
54. Arpaci, I.; Al-Emran, M.; Al-Sharafi, M.A.; Marques, G. *Emerging Technologies during the Era of COVID-19 Pandemic*; Studies in Systems, Decision and Control; Springer: Berlin/Heidelberg, Germany, 2021; Volume 348.