

DIGITAL STORYTELLING FOR ENHANCING ENGLISH LANGUAGE SPEAKING SKILLS AMONG SECONDARY SCHOOL STUDENTS

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Abstract. The study aims to create and implement digital storytelling (DST) activities via Microsoft Teams for form four students, evaluating their impact on individual speaking performance. Additionally, it seeks to gauge students' perceptions of these activities on Microsoft Teams as a virtual learning platform. The effectiveness was assessed through a pre-experimental design involving 30 form four students, using speaking tests and perception questionnaires. Pre-test and post-test scores were compared using the Wilcoxon Signed Rank test, indicating a significant improvement in speaking performance ($p < 0.001$). Students also reported positive impacts on learning process and outcomes, affirming Microsoft Teams' suitability as a learning platform. The findings suggest that these activities can enhance the speaking performance of form four students. This underscores the potential of DST learning activities on Microsoft Teams for educational enhancement.

Keywords: *speaking, digital storytelling (DST), virtual learning platform, Microsoft Teams*

Introduction

Ministry of Education (MoE) aspires to produce globally competitive future generations and it believes that having bilingual proficiency is one of the ways (Avalos, 2011). Thus, MoE upgraded ICT to ensure quality education is accessible by all (Avalos, 2011). The 7th shift in the Malaysian Education Blueprint 2013-2025 is drawn to facilitate the shift in education. This involved an investment worth billions of ringgits towards equipping schools with the internet services, and provide accessibility to technologies through virtual learning platform, DELIMa (Digital Educational Learning Initiative Malaysia) in 2019 (Avalos, 2011). The MoE, through the transformation, expects integration of technology in learning hence ICT models; self-directed online learning and interactive online tutoring are proposed in the Malaysian Education Blueprint (Avalos, 2011). According to Altun and Khurshid Ahmad (2021), integration of technology is essential and is a must because technology makes learning English language easier. This is also echoed by Idayani et al. (2022). Nair and Yunus (2022) as well as Chong and Reinders (2020) stated that integrating ICT enables learners to use web-based tools to collaborate, communicate, and interact with teachers and peers regardless their proficiency in the language and that motivates them to be actively engaged in learning. However, the success of technology integrated language learning does not entirely depend on the choice of technological tool, but it also depends very much on humans, in particular teachers who must plan, design, and implement effective educational activities (Abunowara, 2016). Therefore, as educators, it is important to develop suitable learning design integrating technology in line with the ministry's

vision that is to maximize the use of ICT to create a self-paced personalized learning experience and enhance English language proficiency (Avalos, 2011).

Speaking performance of Malaysian students

Mastery of English as a second language is often judged based on one's ability to converse in the language (Rao, 2019; Rossiter et al., 2009). For ESL learners, success in mastery of language is often evaluated based on speaking skills (Bahadorfar and Omidvar, 2014). Speaking is considered the most important yet the most difficult skill to acquire (Aziz and Kashinathan, 2021; Baniabdelrahman, 2013). Moreover, proficiency in speaking has always been an important criterion to secure job among graduates. Hence, many studies highlighted that lacking speaking proficiency is one of the contributing factors to unemployment among graduates (Hiew et al., 2021; Nesaratnam et al., 2020; Bahrim et al., 2019; Hossain et al., 2018). An analysis released by the Malaysian Examination Syndicate in 2022, showed that majority of the candidates who sat for the MUET speaking tests achieved only CEFR Band B1 (51.98%) (MPM, 2022). Both results indicate that speaking performance is still below the targeted level.

Importance of integrating technology

The current population of secondary school students, born between the year 1996 and 2009 are known as the digital natives or Generation Z (Demir and Sonmez, 2021). Hence, using technology in teaching and learning is one of the best solutions teachers can seek. This generation is born in the digital era where social media was at its peak (Mohr and Mohr, 2017). Moreover, they are also brought up exposed to technology from their childhood. Therefore, this generation is more technologically inclined in comparison to previous generations (Pichler et al., 2021; Schwieger and Ladwig, 2018). Understanding learners is important in designing learning activities to make them to be more engaged in learning. According to Seemiller and Grace (2017), hence, it is vital to understand the learning theory behind language learning and match it with the Gen Z learning style and preference when designing learning activities. According to Cook (2016), Gen Z prefers the use of technology and visual media in education. Studies have shown that incorporating technology, and multimedia makes Gen Z students to be more engaged in learning (Demir and Sonmez, 2021). Hence, the learning design should consider incorporating task-based learning, visual media, videos, and storytelling in designing technology-integrated activity. DST is an apt pedagogical approach that integrates technology and multimedia. According to Sosas (2021), DST is one of the most powerful technological tool in teaching speaking as it incorporates multimedia which enhances learning and concurrently improves speaking skill as it requires learners to use their own voice words.

Digital storytelling

Digital Storytelling (DST) is a trending strategy used in academic environments in South-East Asian countries in the year 2020 (Abd Rahman and Bakar, 2020). According to Bilici and Yılmaz (2021) as well as Lim et al. (2021), there is a gradual increase in research conducted in the field of DST from the year 2009 till 2018. DST has been used in a wide range of subject areas, especially in foreign language teaching (Nair and Yunus, 2021). According to Lim et al. (2021), those studies on DST targeted

respondents aged five to thirteen and thirteen to twenty-one. However, from 2015 till 2020, only one study conducted in Malaysia pertaining to the use of DST in teaching and learning of speaking. This research is conducted at primary school level (Abd Rahman and Bakar, 2020). After the year 2020, more studies conducted at Malaysia related to the use of DST in teaching language, especially in the year 2022 but these studies mainly focused on the use of DST in teaching of speaking at primary schools. The findings indicate that DST improves speaking skills (Ramalingam et al., 2022; Nair and Yunus, 2021; Leong et al., 2019; Amelia and Abidin, 2018).

In general, DST has more potential to be used in learning because not only that it incorporates technology and interactive but also makes lesson more engaging and interesting apart from catering to students' multiple senses and adherers to current generation's learning style (Choo et al., 2020). Nair and Md Yunus (2022) reported that creating DST enables students to engage in collaborative tasks and that enhances knowledge while creating more engaging and interesting learning environment. According to Amelia and Abidin (2018) creating DST involves using multimedia and technology hence it creates interest and enthusiasm among students in learning language. Leong et al. (2019) states that DST poses high interactivity and that increases motivation while providing a stress-free, and low anxiety learning environment. However, even if DST has a lot of good sides to offer, we cannot overlook that there are a few of opinion that using DST is time-consuming and meaningless (Hava, 2021) and that there are other factors such as technical skills, internet skills, time factor and other physical constraints that might affect the success of using DST in improving linguistic ability (Rosli, 2019). Therefore, it is important for teachers to ensure these factors are considered in implementing DST in their teaching and learning environment.

Active participation in learning speaking can enhance learners' speaking skills as it increases practising (Hayuningtyas and Mega Fariziah, 2020; Zakaria et al., 2018). Besides, students learn better and be more encouraged to practice if they are not nervous (Nadesan and Shah, 2020). Integration of technology creates an opportunity to practice, hence students become more familiar with the language and they overcome the fear of speaking the English language (Aziz and Kashinathan, 2021; Sosas, 2021; Nijat et al., 2019; Paneerselvam and Mohamad, 2019). In addition, learning activities should also cater to the learning styles and learning needs of current generation. Generation Z (Gen Z) expects fun, and engaging learning activities that incorporates visuals, social media, and games (Demir and Sonmez, 2021) which requires integration of suitable learning theory that enhances learning through technology. However, in real, students do not have enough exposure to the target language, or opportunities to use the language in interactions (Nee and Yunus, 2020; Binti Talib et al., 2019). Lack of speaking practice causes unfamiliarity of the spoken language to the students; hence, they are afraid of making mistakes whenever they speak (Binti Talib et al., 2019). Besides, past studies highlighted that psychological factors such as high anxiety, and low self-confidence were reported as the most prominent reasons behind students' poor speaking skills (Aziz and Kashinathan, 2021; Nadesan and Shah, 2020; Qureshi et al., 2020; Binti Talib et al., 2019; Paneerselvam and Mohamad, 2019; Rusli et al., 2018). Mismatch between learning styles and learning activities leaves a gap in the learning process and disengages the current generation of students where, technology is not utilized for learning.

Therefore, pedagogical approach should focus on lowering anxiety (Krashen, 1982) and learners should also get the opportunity to practice speaking in English on daily

basis (Aziz and Kashinathan, 2021; Lingga et al., 2020). This can be done through integration of technology through online learning platform in learning speaking. Integration of technology also appeals to the learning styles of Generation Z (Gen Z) (Demir and Sonmez, 2021). Cognitive Theory of Multimedia Learning (CTML) facilitates learning approaches that incorporates multimedia such as Digital storytelling (DST). DST is a suitable pedagogical approach which integrates technology to enhance speaking skills (Sosas, 2021). In addition, DST has been reported to enhance self-confidence in speaking (Hava, 2021; Kallinikou and Nicolaidou, 2019; Mohamed Salama Eissa, 2019; Smeda et al., 2014). However, very few past studies highlighted integration of learning theory with DST. Hence, to ensure effective learning occurs this research is aimed to fill in the gap, by developing Digital Storytelling learning activities to enhance speaking skills on online learning platform among secondary school students. In this attempt, the following research questions are explored: (a) What is the effect of using digital storytelling learning activities through Microsoft Teams on the form 4 students' individual speaking performance? (b) What are the students' perception about the digital storytelling learning activities through Microsoft Teams?

Conceptual framework

The research uses ADDIE model that comprises 5 phases to facilitate the research. The first phase involves analysis. Followed by designing and developing learning environment using Digital Storytelling (DST) as approach to enhance speaking skills. The DST learning activities are structured by integrating Cognitive Theory of Multimedia Learning (CTML) (Mayer, 2002) and 7 Elements of Digital Storytelling (Lambert, 2013) in developing the learning activities. According to Kari Jabbour (2012), integration of well-balanced use of multimedia elements increases effectiveness of learning. It is important to ensure evenness in employing verbal and visual elements of multimedia so that learners are engaged and learning outcome is achieved (Bull, 2013). The activities are carried out through online platform to post assignment, submit task and to give feedback. The learning activities are based on digital storytelling approach. Students learn through digital stories and work with designing their digital stories based on seven elements as suggested by Lambert (2013). The elements are Point of View, A Dramatic Question, Emotional Content, The Gift of your Voice, The Power of the Soundtrack, Economy, and Pacing. These elements guide students in producing an effective digital story. Then, the learning activities are implemented and evaluated to study its effect on students' speaking skills and gather students' perception on the online learning environment.

Phases of the study

This research employs the ADDIE model in designing and developing online storytelling learning activities on Microsoft Teams. ADDIE model is seen as a simple systematic framework and one of the most effective models in use to develop an effective and efficient tool for learning (Ghani and Daud, 2018; Khalil and Elkhider, 2016) especially when it involves using technology and multimedia (Razali and Tassim, 2022). There are five phases involved in designing and developing online storytelling learning activities on Microsoft Teams under the ADDIE instructional model (Joshua et al., 2020). *Table 1* illustrates the research activities carried out based on ADDIE model.

Table 1. *Research activities based on ADDIE Model.*

Phases	Research activities
Analysis (A)	Analyse problem background and problem statement Analyse and identify instructional goals, learning theories and instructional strategies Analyse available resources and constraints and identify technological tools
Design (D)	Design theoretical and conceptual framework Decide on learning standards to be achieved Plan lesson and design learning activities based on digital storytelling approach based on Cognitive Theory of Multimedia Learning Design Microsoft Teams as virtual learning platform
Develop (D)	Develop Speaking Tests (pre and post-tests) Develop Students' Perception Questionnaire Develop virtual learning platform in Microsoft Teams Develop digital storytelling learning activities in Microsoft Teams Research instrument validation process Conduct Pilot study
Implement (I)	Briefing and tutorial with teachers and student Carry out intervention Collect Data
Evaluate (E)	Conduct data analysis Study effectiveness of digital storytelling activities through Microsoft Teams on students' speaking skill Find out students' perception

Materials and Methods

A quantitative research approach is used as the research involves analysis of numerical data to obtain answers to research questions. This research employs pre-experimental research design. According to Campbell and Stanley (2015), pre-experimental research design best fits to study the possible effects of intervention. This research design is suitable to evaluate the impact of the intervention on the same group of students as this method is known to be a useful tool to observe the potentiality of an intervention (Marsden and Torgerson, 2012). Due to the nature of the research which is to evaluate the effectiveness of the online digital storytelling learning activities on Microsoft Teams on students' individual speaking performance, the researchers use pre-experimental research design. The one group pre-test and post-test design is conducted as it allows research to study the change that has occurred due to implementation of intervention. The target group (A) is given a pre-test to measure their performance before intervention. Then, the group goes through the treatment process (X) and finally the same group of students undergoes a post-test (Creswell, 2016; Campbell and Stanley, 2015). The differences found in the pre-test and post-test results are used to evaluate the impact of the experimental intervention. By comparing the pre-test results (O1) and post-test results (O2), researcher can see whether there are any differences in score and analyze the effectiveness of the intervention on students' speaking performance.

Validity and reliability of research instruments

To achieve the research objectives, the researchers developed the following instruments: (1) Speaking test to evaluate speaking performance of students in terms of vocabulary, grammar, and communicative competence; (2) A questionnaire to obtain students' perception on DST learning activities through Microsoft. Both research instruments were put through validity and reliability tests.

Validity and reliability of speaking tests

The research instruments were tested for content validity and by a panel of experts. Then, the instruments were altered based on the feedback received from experts before administered on students. After being validated, the instrument was also tested for reliability. For this, test-retest testing and inter-rater reliability testing were conducted. Test-retest reliability test is to find out stability of the instrument. This test involves same group of students taking same test form more than once at a different time (Heale and Twycross, 2015; Liao and Qu, 2010). The test was taken twice at the interval of three weeks by ten students. The test-retest data was analysed, and the correlation value (r) was 0.811. According to Piaw (2020), the research instrument is considered reliable when r value is more than 0.65. Therefore, the speaking tests are concluded to have stability. The instrument was also tested for equivalence through inter-rater reliability test. This is to ensure, that there is consistency in the scores given by different users of the instrument at a time (Heale and Twycross, 2015). The inter-rater reliability test involves two raters consisting of English language teachers who assess the examinees concurrently. Then, inter-rater reliability is determined by employing correlation coefficient test. The data was analysed using SPSS and the correlation coefficient value (r) was 0.987. According to Piaw (2020), if r value is more than 0.8 then the instrument is considered to have a good reliability. Thus, the speaking test is concluded as reliable research instrument to assess students' speaking.

Validity of questionnaire

A valid questionnaire would be able to function as an effective tool to gather relevant and valid information that can answer the research question. Therefore, the questionnaire was validated before being administered on respondents. For validation purposes, it was given to two educational technology experts to validate. The feedback given by experts was used to improvise and repair the questionnaire before being used in the research. Inter-rater validity was measured, and the result showed both raters were in perfect agreement with the validity of the instrument.

Results and Discussion

The effect of using digital storytelling learning activities through Microsoft Teams on the form 4 students' individual speaking performance?

This phase of the study aimed to answer the first question of the study: What is the effect of using digital storytelling learning activities through Microsoft Teams on the form 4 students' individual speaking performance? *Table 2* depicts the descriptive statistics of English language speaking performance. The results showed that the pre-test's standard deviation for speaking performance was 1.76, and the standard deviation for the speaking performance in the post-test was 2.85. Therefore, according to the pre- and post-test results, it can be concluded that there is an increase in the speaking scores due to the intervention. As illustrated in *Figure 1*, the pre and post test scores indicate that the percentage of students achieving CEFR Band B1/B2 has increased drastically from 13.3% to 50%. This clearly indicates that students have also shown improvement in quality of performance as 23.33% and 10% of students have achieved CEFR B2 and C1 respectively after the intervention.

Table 2. Descriptive statistics of speaking performance ($n=30$).

Category	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test	30	3.00	12.00	8.4667	1.75643
Post-test	30	6.00	16.00	11.4667	2.84948
Valid N (listwise)	30				

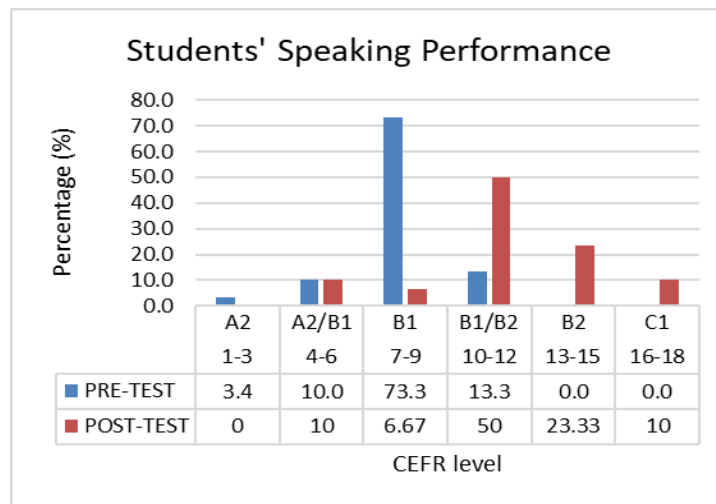


Figure 1. Students' speaking performance based on CEFR Level.

An inferential analysis is also conducted to study the significance of difference between pre-test and post-test to evaluate the effect of digital storytelling learning activities on form 4 students' individual speaking performance. Therefore, normality test was conducted to find out if the data is normally distributed to decide on the statistical test (Piaw, 2020). *Table 3* depicts the outcome of normality test and the result of Kolmogorov-Smirnova and Shapiro-Wilk test on both pre-test and post-test scores. The test on pre-test scores showed that $p < 0.05$ hence it is concluded that pre-test scores are not normally distributed. However, the test was insignificant for post-test scores where $p > 0.05$ and the leads to conclusion that post-test scores are normally distributed. In conclusion, since one of the datasets is not normally distributed this study employed non-parametric analysis, Wilcoxon Signed Rank test. The Wilcoxon Signed Rank test result as shown in *Table 4*, indicates that there is a significant difference between pre-test scores and post-test scores where $p < 0.001$ ($p < 0.05$). Hence, it can be concluded that digital storytelling learning activities are effective in improving the students' individual speaking performance.

Table 3. Output of Normality Test.

Category	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-test	.286	30	.000	.804	30	.000
Post-test	.137	30	.159	.943	30	.113

Note: a= Lilliefors Significance Correction.

Table 4. Wilcoxon Signed Rank test result on pre-test and post-test scores.

Category: Test Statistics ^a	Post-test-pre-test
Z	-4.726 ^b
Asymp. Sig. (2-tailed)	<0.001

Note: a=Wilcoxon Signed Ranks Test; b=Based on negative ranks.

The students' perception about the digital storytelling learning activities through Microsoft Teams

This phase of this study aimed to answer the second research question: What is the students' perception about the digital storytelling learning activities through Microsoft Teams based on four constructs; speaking, psychology, digital literacy, and Microsoft Teams? *Table 5* shows the students' perception towards online storytelling activities on speaking practice. Overall, the average mean and standard deviation for the speaking construct is 3.21 and 0.57 respectively. Hence, it can be concluded as students agree that digital storytelling activities facilitate speaking practice outside classroom on their own, making English language speaking practice fun, while improving their individual speaking performance, and allowing them to spend more time practising speaking. *Table 6* shows data analysis on students' perception about the impact of online storytelling learning activities on their psychology. The items under the construct of psychology are aimed to know if online storytelling learning activities make students confident, happy, and alleviate fear of speaking English language and making mistakes. The average mean for the construct is 2.99 with standard deviation at 0.66. Hence, it can be interpreted as students agree that online storytelling activities does impact their psychology where they are more confident to speak, feel happy practising speaking, the fear of speaking English language and fear of making mistakes when speaking are both reduced.

Table 5. Students' perception about the online storytelling learning activities towards speaking practice.

No.	Category: Speaking Item	N	Frequency (N) [Percentage (%)]				Mean
			1(SD)	2(D)	3(A)	4(SA)	
1	The digital storytelling activities help me to practise speaking English the language outside the classroom.	30	1 (3.30)	0 (0)	21 (70.00)	8 (26.70)	3.20
2	The digital storytelling activities allow me to practises speaking English language on my own.	30	0 (0)	0 (0)	21 (70.00)	9 (30.00)	3.30
3	The digital storytelling activities make English language speaking practice fun.	30	1 (3.30)	2 (6.70)	24 (80.00)	3 (10.00)	2.97
4	The digital storytelling activities improve my individual speaking skills.	30	0 (0)	3 (10.00)	18 (60.00)	9 (30.00)	3.20
5	The digital storytelling activities allow me to spend more time to practise speaking English language.	30	0 (0)	5 (16.70)	17 (56.70)	8 (26.70)	3.10
6	The digital storytelling activities allow me to make corrections before speaking.	30	0 (0)	0 (0)	16 (53.30)	14 (46.70)	3.47
Average mean/std. deviation							3.21/0.57

Table 6. Students' perception on impact of online storytelling learning activities towards their psychology.

No.	Category: Psychology Item	N	Frequency (N) [Percentage (%)]				Mean
			1(SD)	2(D)	3(A)	4(SA)	
1	The digital storytelling activities make me more confident to speak in the English language.	30	1 (3.30)	5 (16.70)	19 (63.30)	5 (16.70)	2.93
2	Digital storytelling activities reduce the fear of speaking the English language.	30	1 (3.30)	6 (20.00)	17 (56.70)	6 (20.00)	2.93
3	The digital storytelling activities reduce the fear of making mistakes when speaking.	30	1 (3.30)	5 (16.70)	17 (56.70)	7 (23.30)	3.00
4	The digital storytelling activities make me happy to practice speaking.	30	0 (0)	2 (6.70)	23 (76.70)	5 (16.70)	3.10
Average mean/std. deviation							2.99/0.66

Table 7 illustrates students' perception about the impact of online storytelling activities on their digital literacy which is the third construct. The construct aims to find out if students are of the opinion that there is element of digital literacy when they take part in online storytelling activities. The average mean and standard deviation for the construct is 3.42 and 0.58 respectively. In conclusion, the mean reflects that students strongly agree online storytelling activities promote digital literacy where students learn

to use multimedia elements and develop video editing skills through PowToon and use their creativity in in the process of creating digital content. *Table 8* depicts the data analysis conducted on students' perception about the use of Microsoft Teams as virtual learning platform. The items in this part are targeted to find out the usability of Microsoft Teams from as virtual learning platform in the perspective of students. The average mean and standard deviation of this construct is 3.76 and 0.54 respectively. Therefore, it can be interpreted and concluded that students strongly agree that Microsoft Teams is not only easy to use, but also a good learning platform that facilitates interaction among users through feedback while allowing students to manage their learning activities which includes easily obtaining information, submit assignments, and reflect on learning activities.

Table 7. *Students' perception on the impact of online storytelling activities towards digital literacy.*

No.	Category: Digital literacy Item	N	Frequency (N) [Percentage (%)]				Mean
			1(SD)	2(D)	3(A)	4(SA)	
1	The digital storytelling activities provide the opportunity to use multimedia such as audio, text, image, video and animations.	30	0 (0)	0 (0)	14 (46.70)	16 (53.30)	3.53
2	The digital storytelling activities encourage me to use my creativity.	30	0 (0)	1 (3.30)	16 (53.30)	13 (43.30)	3.40
3	The digital storytelling activities help me to be familiar with the video editing application PowToon.	30	0 (0)	3 (10.00)	14 (46.70)	13 (43.30)	3.33
Average mean/std. deviation							3.42/0.58

Table 8. *Students' perception about the use of Microsoft Teams as virtual learning platform.*

No.	Category: Microsoft Teams Item	N	Frequency (N) [Percentage (%)]				Mean
			1(SD)	2(D)	3(A)	4(SA)	
1	Microsoft Teams is easy to use.	30	0 (0)	3 (10.00)	19 (63.30)	8 (26.70)	3.17
2	Microsoft Teams provides space to get feedback from peers.	30	1 (3.30)	0 (0)	23 (76.70)	6 (20.00)	3.13
3	Microsoft Teams provides space to get feedback from the moderator.	30	0 (0)	0 (0)	25 (83.30)	5 (16.70)	3.17
4	Microsoft Teams allows me to reflect on activities.	30	0 (0)	2 (6.70)	20 (66.70)	8 (26.70)	3.20
5	Microsoft Teams makes it easy to submit assignments.	30	0 (0)	1 (3.30)	17 (56.70)	12 (40.00)	3.37
6	Microsoft Teams makes it easy to get information.	30	0 (0)	2 (6.70)	17 (56.70)	11 (36.70)	3.30
7	Microsoft Teams helps me to manage my learning activities.	30	0 (0)	1 (3.30)	21 (70.00)	8 (26.70)	3.23

The findings of the study clearly proves that that using online learning activities based on digital storytelling approach has significantly impacted students' speaking performance. Moreover, the findings as shown in table 4, $p < 0.001$ indicates significance between the pre-test and post-test scores. This reflects that the intervention has successfully contributed to a positive impact on students' speaking performance where more students from CEFR band B1 have moved towards achieving CEFR B2. The minimum score of both tests also indicates that lowest band achieved has increased from CEFR A2 to B1 and more students have achieved CEFR B2 which is the expected level that five students should be in when they finish secondary education (MOE, 2015) and some even reached CEFR C1. With these statistical findings, it can be concluded that digital storytelling learning activities have created positive effect on the form four students' speaking performance. This is parallel to findings of past studies that concluded integrating technological tools in speaking practice creates greater impact on

students' speaking performance compared to traditional classroom activities (Sosas, 2021; Marzuki and Nurpahmi, 2019). The outcome of this research also shows that using digital storytelling learning activities leads to improvement in speaking performance in terms of grammar, vocabulary (Mohamed Salama Eissa, 2019) and communicative competence not only among primary school students as reported by numerous studies in the past as an effective approach to increase speaking skills (Ramalingam et al., 2022; Yang et al., 2022; Hava, 2021; Kallinikou and Nicolaidou, 2019; Precintha Rubini et al., 2019) but also among upper secondary students. Moreover, the positive outcome of the research is also at par with a study that highlighted practicing is the most effective strategy to improve speaking skill because it helps students to familiarise with the language (Zakaria et al., 2018) The findings of this research also indicate that the digital storytelling learning activities which are student-centred, encourages active-learning promotes self-regulated learning, and engaging has proven to be impactful on students' speaking performance. This is at par with what has been suggested by past studies that reported a learning environment that is interactive, engaging, student-centred, students friendly, and free from negative comments is an effective learning environment can facilitate effective speaking practice (Nair and Md Yunus, 2022; Aziz and Kashinathan, 2021; Nijat et al., 2019; Paneerselvam and Mohamad, 2019).

The findings of the research indicate that students perceive positively that digital storytelling learning activities impact their speaking. The outcome of the finding also indicates that, with digital storytelling learning activities students can spend more time practicing. The finding complements the first research outcome. Whereby, the increase in speaking performance in speaking tests is supported by students' perception that digital storytelling learning activities facilitates practicing and improves their speaking performance. It is also consistent with findings reported by Syafryadin and Salniwati (2019). On top of that, the findings under the construct of psychology indicate that students perceive that online learning activities based on digital storytelling approach increase their confidence in speaking. The same view shared by Nair and Md Yunus (2022) as well as Abdelmageed and Naggar (2018). The students also agree that online storytelling learning activities alleviates fear of speaking English language and fear of making mistakes when they speak. The same view has been highlighted by Bashori et al. (2022) as well as Alkan and Bümen (2020) that online learning activities reduce fear of receiving negative feedback. Besides, the findings also suggest that students are very optimistic that online learning activities based on digital storytelling approach promote digital literacy where the activities provide opportunities for them to incorporate multimedia elements in creating digital stories and familiarise with video editing application. This was also echoed by Hava (2021), Abd Rahman and Bakar (2020) as well as Choo et al. (2020), using digital storytelling as an approach in learning boosts technical ability of students because they are required to use technology and multimedia during the activity. The students also perceived that the digital storytelling activities encourage them to use their creativity and this is parallel to what has been reported by Yang et al. (2022), Raffone and Monti (2019) as well as Syafryadin and Salniwati (2019), in their researches respectively. Past studies on students' perception about digital storytelling learning activities were mostly based on activities conducted in classroom at primary schools. Hence, the findings of this study ventured into gathering secondary school students' perception especially and the findings show that there is not

much difference in perception when it is about the online learning activities based on digital storytelling.

Conclusion

In conclusion, this research shows that digital storytelling activities for English learning through online learning platform influences the form four students' speaking skills. The improvement in speaking skills was observed in terms of their grammar control, usage of vocabulary and communicative competence. Digital storytelling activities for English learning have a greater impact when they incorporate receptive skills, listening and reading. Therefore, it is vital to design learning activities that allow students to obtain input and produce output. The outcome of the research also amplifies that digital storytelling enables active participation and practicing which contributes towards improvement in speaking skills. This is complimented by students' positive perception towards digital storytelling activities for English learning on online learning platform. Truly, digital storytelling activities for English learning are accepted by the students as a tool that can assist them to practice speaking at their own convenience eventually positively effecting their speaking skills. Students also agreed that the activities were seen to have positively impacted their psychology allowing them to practice more confidently, without having to fear of making mistakes in the attempt to practice speaking which contributed to the improvement in their speaking skills. Digital storytelling activities for English learning are also perceived to enable students to practice speaking in a fun way. The activities are also deemed to impart digital literacy among students. However, this research has its limitations. The study is limited to the integration of Cognitive Theory of Multimedia Learning (CTML) as theoretical scope in designing learning activities. Using different learning theories in designing the learning activities may have different impacts on students' speaking skill. Another limitation is that the research only involved a small number of students from a school located in a town. Thus, future research should be conducted on a bigger scale involving students from rural areas. Different socioeconomic backgrounds may affect the outcome of research in terms of the significance of the activities on speaking skills and the students' perceptions of the digital storytelling activities. Therefore, further research should be conducted to study the significance of the impact on different groups of samples, at a bigger scale and using different methodologies.

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Conflict of interest

The authors confirm that there is no conflict of interest involve with any parties in this research study.

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