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การเล่าเรื่องแบบดิจิทัล : การประยุกต์ใช้ในการอ่านภาษาอังกฤษเป็นภาษาต่างประเทศ
Digital Storytelling: Implications for EFL Reading

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บทคัดย่อ

การเล่าเรื่องแบบดิจิทัลได้รับการพัฒนาขึ้นเพื่อใช้เป็นเครื่องมือในการสอนการอ่านภาษาต่างประเทศ ในงานวิจัยครั้งนี้ผู้วิจัยได้ใช้วิธีการวิจัยแบบผสมผสาน เพื่อศึกษาผลของการเล่าเรื่องดิจิทัลต่อความสามารถในการอ่านภาษาอังกฤษเป็นภาษาต่างประเทศของนักศึกษาระดับปริญญาตรีในกัมพูชา กลุ่มตัวอย่างที่ใช้ในการศึกษาครั้งนี้เป็นนักศึกษาระดับปริญญาตรีชาวกัมพูชาจำนวน 18 คนที่ได้รับการสอนการเล่าเรื่องแบบดิจิทัลเป็นเวลา 11 สัปดาห์ ผู้วิจัยได้สร้างและใช้แบบทดสอบการอ่านภาษาอังกฤษเพื่อประเมินความสามารถในการอ่านภาษาอังกฤษเป็นภาษาต่างประเทศของนักศึกษา นอกจากนี้ยังได้ใช้การสัมภาษณ์เพื่อศึกษามุมมองของนักศึกษาที่มีต่อการเรียนการสอนโดยใช้การเล่าเรื่องแบบดิจิทัล ผลจากทดสอบประสิทธิผลโดยใช้สถิติวิลคอกซันพบว่า ความสามารถในการอ่านภาษาอังกฤษหลังเรียนของนักศึกษาพัฒนาขึ้นอย่างมีนัยสำคัญ นอกจากนั้นยังพบว่านักศึกษามีทัศนคติเชิงบวกต่อการเรียนการสอนโดยใช้การเล่าเรื่องแบบดิจิทัล ผลของการวิจัยชิ้นนี้สามารถนำไปสู่การบูรณาการการเล่าเรื่องแบบดิจิทัลสำหรับการสอนการอ่านภาษาอังกฤษเป็นภาษาต่างประเทศ

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Abstract

Digital storytelling has recently been studied as a tool for foreign language reading instruction. This mixed-methods study investigated the effects of digital storytelling on Cambodian undergraduate students' EFL reading ability. Eighteen Cambodian undergraduate students participated in the digital storytelling Intervention for 11 weeks. An English reading test was constructed and adopted to examine students' EFL reading ability, and an interview protocol was designed to explore the students' perceptions of the intervention. Findings from the Wilcoxon Signed Ranked Test revealed significant improvement in the students' English reading ability, while the students had positive perceptions of the design of the digital storytelling intervention. Implications from this study led to the integration of digital storytelling for EFL reading instruction.

Keywords: digital storytelling, EFL reading, undergraduate students

Introduction

Digital storytelling is considered as an instructional tool to bring the outside world into the four walls of the classroom. It empowers students to play the roles of knowledge creators and makes their learning meaningful and relevant (Kohnke, 2019). It also promotes social skills, engagement, confidence, emotional intelligence, motivation, and 21st-century literacy skills (Alismail, 2015; Bui, 2015). Implementing digital storytelling tends to improve students' language skills (Tanrıkulu, 2021).

Due to its potential benefits, digital storytelling has recently been an interest of L2 scholars as evidenced by its numerous studies conducted in the ESL/EFL realm. As such, studies have covered the impact of digital storytelling on speaking and listening skills (Tahriri et al., 2015; Yang et al., 2020), writing and reading skills (Rahimi & Yadollahi, 2017; Vu et al., 2019), overall language skills (Yang & Wu, 2012), students' learning satisfaction and involvement (KohnKe, 2019). Despite this, there remains a missing piece in the study of digital storytelling. That is, there have not been any studies conducted in the context of Cambodian readers of EFL.

In Cambodia, English has been the most significant foreign language (Igawa, 2008), and among the four macro skills, reading and speaking are the skills most preferred by Cambodian EFL students (Sothan, 2015). However, according to the recent test summary of the TOEFL iBT, Cambodian test takers achieved the lowest score on reading (Educational Testing Service, 2019). A recent study by Sun (2019) also found that Cambodian EFL students had difficulties in understanding English texts. This might be due to limited teachers' qualification, poor learning environment and motivation, etc. (Ministry of Education, Youth, and Sport, 2013).

Hence, given the critical role of EFL reading ability for academic and professional success, this study was conducted to develop a tool to improve the EFL reading ability of Cambodian EFL students and to fill the research gap on digital storytelling in Cambodian context.

Research Questions

1. To what extent do Cambodian undergraduate students improve EFL reading ability after participating in the digital storytelling intervention?
2. What are Cambodian undergraduate students' perceptions on the digital storytelling intervention?

Literature Review

Digital Storytelling

Digital storytelling is a project-based instruction that incorporates storytelling, group work, and technology to produce short videos with multi-media resources and express captivating stories (Castañeda, 2013; Christiansen & Koelzer, 2016). It also encompasses seven elements (Moradi & Chen, 2019): (1) "Point of View", in which storytellers should construct their digital stories from their understanding and experience through the first person perspective; (2) "Dramatic Question", in which an ideal digital story poses a question that stimulates and holds the audience's interest, concern, and attention; (3) "Emotional Content", in which the digital story elicits laughter, tears, or expression of joy; (4) "Economy", in which the focus is on the precision, brevity, and simplicity of the digital-story content to prevent the viewers from being overwhelmed; (5) "Pacing", in which the story's rhythm and speed is emphasized and aligned with the aim of the story; (6) "The Gift of Your Voice", in which the storytellers are advised to personalize their stories by including a pre-recorded narration of the script to accommodate the viewers' understanding; (7) "Soundtrack", in which the depth and storyline are enhanced by incorporating music or other audio supports.

Digital Storytelling and EFL Reading

It has been supported that digital storytelling improves EFL reading (Rahimi & Yadollahi, 2017; Vu et al., 2019; Yang & Wu, 2012). Moradi and Chen (2019) posit that it provides a multidimensional learning approach that improves the reading skill in addition to other skills. Meanwhile, Yang and Wu (2012) maintains that it provides students with contexts conducive to improving not only productive, but also receptive skills.

Since students who engage in digital storytelling have to read information and then use the information to write a script (Yearta, 2019), the theoretical reading-and-writing link has been substantiated, the existence of which has been affirmed by various scholars (Fitzgerald & Shanahan, 2000; Gao, 2013; Graham, 2020; Graham & Hebert, 2011; Lee & Schallert, 2016; Zhang, 2018). The scholars are in consensus that reading and writing share the same cognitive components and complement one another. That is, while reading is an effective means of obtaining the input, writing is a sound way either to construct the output, or reinforce the input (Gao, 2013). Graham and Hebert (2011) have proposed that, when students write about the texts read, it enhances their comprehension of the texts. Writing about the texts helps the students comprehend them, because doing so equips them with tools to make a visible and permanent record, connection, analysis, personalization, and manipulation of the main ideas in the texts (Fitzgerald & Shanahan, 2000). Graham (2020) reasoned that, when students write texts for others to read, they try to obey the rules of logic to make their writing clear, which makes them more aware of the same issues, and thus, they comprehend better, when they subsequently read the texts. Graham also added that, because they had to read to find information to write, their background knowledge also improved, which could then be deployed to comprehend similar reading materials in the future. Lee and Schallert (2016) also found in their study that Increasing the volume of students' writing also improves their reading comprehension.

Methodology

Scope of the Study

Context and Participants. The study was conducted at a private university in the south-central region of Cambodia. The participants included 18 Cambodian students majoring in English in the academic year, 2021. A purposive sampling method was used to select the participants.

Variables. Digital storytelling is an independent variable, while Cambodian undergraduate students' EFL reading ability is a dependent variable.

Materials

Digital Storytelling Intervention. The intervention was designed and adopted from Yearta (2019) framework with five stages, including (1) Planning/Selecting a topic, (2) Conducting Research, (3) Drafting, (4) Revising, and (5) Publishing for Authentic Audiences (see

Figure 1). It consisted of four units and lasted for eight 90-minute sessions plus extracurricular time for 11 weeks. Four units were Endangered Language, Poverty, Digital Literacy, and ASEAN. In each unit, the students participated in a mini project to develop a digital story that consisted of a soundtrack, images, and a narration. The sample materials were validated by three experts, and pilot-tested with 10 university students.

Figure 1

Digital Storytelling Intervention Framework
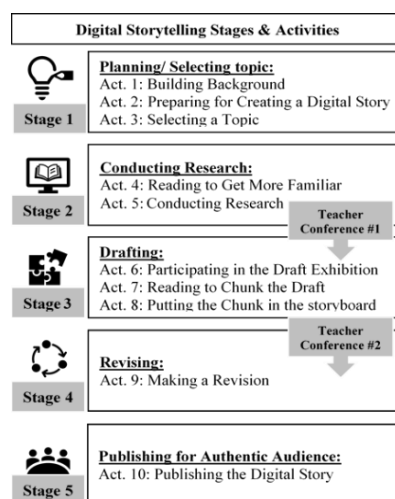
Stage 1: Planning/Selecting a topic. The aim of this stage is to enhance the students' motivation, expand their background knowledge, and prepare them for their mini-projects. Stage 1 encompasses three activities. In Activity 1, the students build their background knowledge through engaging and discussion-based tasks. In Activity 2, they analyze and learn from a digital-story sample. In Activity 3, they are introduced to relevant and compelling digital storytelling topics.

Stage 2: Conducting Research. The second stage strives to promote both intensive and extensive reading, the writing-and-reading connection, and critical online reading. Thus, it includes two activities. In Activity 4, the students explicitly learn and use a reading strategy with a relevant passage. In Activity 5, they find and read online information, and use it to write their digital story scripts. They then join Teacher Conference 1, in which the teacher comments on their scripts, and provides tips on evaluating online information.

Stage 3: Drafting. The drafting stage aims to promote analytical reading, teacher- and peer-scaffolding, and the use of digital technologies. Hence, it consists of three activities. In Activity 6, the students critically read and comment on their friends' scripts. In Activity 7, they read and chunk their scripts. In Activity 8, they use the storyboards to make skeleton plans

for their digital stories and start making their digital stories using Adobe Spark. They then join Teacher Conference 2, in which the teacher assists them with the use of Adobe Spark and checks their progress.

Stage 4: Revising. The purpose of the revising stage is to treat the 'students as responsible content creators. Thus, it includes only one activity. In Activity 9, the students watch and comment on their friends' digital stories. With the guided checklist, they look at various aspects, ranging from the suitability of photos and music to the appropriateness of crediting the sources. After receiving the comments and making the revisions, they send the revised digital stories to their teacher for further feedback.

Stage 5: Publishing for Authentic Audiences. The digital storytelling process culminates in an activity that fosters students' self-efficacy and reflection in learning, through showcasing their artefacts, and asking them to reflect on their learning, and it encompasses one final activity. In activity 10, the students upload their digital stories to the agreed-upon digital platform for classroom, after which, they participate in a short reflection session. With their permission, their digital stories will then be shared with the public.

Research Instruments

English Reading Test. The English reading test was applied to both before and after the intervention to determine the effect of digital storytelling on EFL reading ability. It was constructed based on the PISA 2018 Reading Framework (Organisation for Economic Co-operation and Development, 2019). The framework included eight cognitive reading processes under three aspects: (1) Locate Information (8 items), (2) Understand (12 items), and (3) Evaluate and Reflect (12 items). The test included four reading passages, and lasted for 60 minutes, with a total of 32 items. The test was carefully validated by three experts, and pilot-tested with 10 university students. The test reliability using KR-20 was 0.84, indicating high internal reliability. The overall difficulty and discrimination Indices are 0.3 and 0.4, respectively, indicating effective test items.

Interview Protocol. The interview protocol was utilized to explore students' perceptions towards the design of digital storytelling intervention. There were 12 guided questions that focus on students' perceptions on the stages in digital storytelling intervention. The interview protocol was validated by three experts to ensure the appropriateness of the questions, and pilot-tested with five university students.

Data Collection

Before the digital storytelling intervention, they were given consent forms to sign. They were informed that they could drop from the study without any academic consequences. They then took the pre-test of English reading and received Adobe Spark training. Next, they joined four units of digital storytelling Intervention. In each unit, they did one digital story mini-project and received support for their mini-project. After the intervention, they took the post-test of the English reading. Then, ten of them were randomly selected for the semi-structured interviews.

Data Analysis

The quantitative data from the pre- and post-tests of English reading test was analyzed through a Wilcoxon Signed Ranks test to determine the difference at the statistically significant level of .05. The result was then followed by the calculation of the effect size. The qualitative data from interview protocol was analyzed using thematic analysis. The data was transcribed and analyzed based on the stages from the digital storytelling intervention.

Results

RQ 1: To what extent do Cambodian undergraduate students improve EFL reading ability improve after participating in the Digital Storytelling intervention?

To ascertain whether the students' EFL reading ability significantly improved, a Wilcoxon Signed Ranks Test was used to analyze their overall scores from the English reading tests before and after the digital storytelling intervention.

Table 1 shows that the differences between mean rank and sum of ranks were in favor of positive ranks (i.e., the posttest result of the English reading test). The difference between the pre- and post-English reading tests was also statistically significant (z = -2.96, p = .003) with the large effect size of .70 (Cohen, 1988). Hence, this concludes that their overall EFL reading ability improved after the intervention.

Table 1

The Result of the Wilcoxon Signed Ranks Test of the Pre- and Post-tests

English Reading Test	Groups	N	Mean Rank	Sum of Rank	z	p	Effect size (r)
Posttest-Pretest	Negative Ranks	4	3.50	14.00	-2.96	.003	.70
	Positive Ranks	13	10.69	139.00			
	Ties	1					

Note. N refers to the number of the students, *p* < .05

To examine the effect of the digital storytelling intervention on the students' EFL reading more analytically, the English reading test was broken into its three aspects. The pre- and post-test data from each were then compared. Table 2 indicates the differences between mean rank and sum of ranks were in favor of positive ranks in all test aspects (i.e., the posttest result of the English reading test). There were also statistically significant differences in the pre- and post-tests of the reading test aspects: (1) locating information (z = -2.32, p = .02), (2) understanding (z = -2.39, p = .02), and (3) evaluating and reflecting (z = -2.06, p = .04). The effect size was .55, .56, and .49, respectively. The first two were large while the last one was medium (Cohen, 1988). Thus, this implies that the student's ability to locate information, understand, and evaluate and reflect in English measurably improved after the intervention.

Table 2

The Result of the Wilcoxon Signed Ranks Test of the Pre- and Post-tests (Their Separate Aspects)

English Reading Test Aspects	Groups	*N*	Mean Rank	Sum of Rank	*z*	*p*	Effect size (*r*)
Posttest-Pretest (Locate Information)	Negative Rank	3	5.33	16.00	-2.32	.02	.55
	Positive Rank	11	8.09	89.00			
	Ties	4					
Posttest-Pretest (Understand)	Negative Rank	3	3.83	11.50	-2.39	.02	.56
	Positive Rank	10	7.95	79.50			
	Ties	5					
Posttest-Pretest (Evaluate and Reflect)	Negative Rank	5	6.00	33.00	-2.06	.04	.49
	Positive Rank	12	10.00	120.00			
	Ties	1					

Note. N refers to the number of the students, *p* < .05

RQ 2: What are Cambodian undergraduate students' perceptions on Digital Storytelling intervention?

The responses from ten selective students' perceptions were collected from the interview protocol after the intervention. Each student's response was recorded and transcribed using thematic analysis. Students' transcriptions were then categorized based on each stage of the digital storytelling Intervention as follows (Where S stands for Student)

Stage 1: Planning/Selecting Topics. They said that participating in background-building and digital-story analysis activities was beneficial because they helped them get ready and have more ideas to create the digital stories.

S1:....*it helped my team and me to understand the topic better.... It means that we know more about the topic and have more ideas....*

S2:....*the digital-story samples plus the explanation from the teacher really helped me know more clearly....*

Stage 2: Conducting Research. They reported that the reading strategies learnt in class were helpful in both their reading endeavor and the research tasks since they helped them understand the information better and find them more efficiently. They also recounted that conducting research allowed them to meaningfully apply the reading strategies learnt and gain more new knowledge.

S3:...*we know about the reading strategies, it saves our time and help us understand the passage more quickly.*

S4: :...*when we read online, we already applied the reading strategies we learnt...*

S10: ...*while I was doing the research, I gained a lot of knowledge.*

Stage 3: Drafting. Their responses revealed that the comments from their critical friends in this stage were valuable since they helped them see the gaps in their scripts. Moreover, chunking the information helped them prepare the scripts, while storyboarding assisted them in arranging the chunked scripts logically and with the right photos.

S3:... *Sometimes there are gaps, so we need ideas from others to fill in those gaps.*

S6:...*we chunked it like that, it was easy for us to prepare the script and to discuss...*

S8:...*in what order should the photo be placed?... and then we placed the script....*

Stage 4: Revising. They agreed that their friends' comments improved their digital stories, and the feedback from the teacher further refined their works.

S3: *It is really beneficial because my digital story lacked a lot, and to me, it was something new too. Thus, when you gave us comments, we could improve further.*

S8:.... *it is very beneficial because it mirrored our ability....*

Stage 5: Publishing for Authentic Audiences. Their responses showed that having their work shared made them feel happy, proud of themselves, and motivated to do the work even better.

S2:....*I felt proud of myself and happy that the teacher shared my work....*

S4:...*it made us want to do better since the teacher would share it then...We were the creators, so we tried to do it better...*

To conclude, the students had a positive perception of the stages of digital storytelling. Their responses indicated that the stages scaffolded them in their attempts to create digital stories. They considered the support from the teacher and their peers to be indispensable, and having their masterpieces shared rewarded them emotionally.

Discussion

Implementation of Digital Storytelling on EFL Reading

The study aimed to implement digital storytelling for enhancing Cambodian undergraduate students' EFL reading ability. Students significantly improved their EFL reading ability after 11 weeks of the digital storytelling Intervention. This finding coincided with previous studies by Yang and Wu (2012) and Rahimi and Yadollahi (2017), both of whom found significant improvement in EFL reading ability. The implementation of digital storytelling on students' EFL reading ability could be attributed to (1) aims of the intervention and (2) applications for reading instruction. Stroller et al. (2013) and Grabe (2016) emphasized the need to provide explicit reading instruction to better students' reading ability. In every unit of this digital storytelling reading instruction, students were encouraged to read the texts analytically, focus on extensively online reading, and search for information to create their digital stories. They explicitly learned how to locate, understand, evaluate and reflect short and relevant reading texts. This afforded students with abundant chances to read and deploy strategies and allowed them to improve their reading through extensive reading opportunities (Al Qahtani, 2020). The provision of the extensive reading opportunities corresponded to Anderson (2008) and Grabe (2016), which integrated intensive with extensive reading in the reading class. With the creation of a digital storytelling project through the analytical reading in class and extensive reading outside the class, both played a role in improving students' EFL reading ability.

Digital storytelling offered applications for the improvement of EFL reading ability. It presented students with meaningful instances to use writing to expand reading. Throughout the units, students actively refined their reading ability through writing digital-story scripts, which included what they read online. Given the mutual link between reading and writing, the subsequent writing task done after online reading led to improve students' EFL reading ability. This finding aligned with Gao's (2013) suggestion and Graham and Herbet's (2011) conclusion, which underlined the need to utilize writing tasks to develop reading comprehension. Lee

and Schallert (2016) found that writing could expedite reading ability development. Digital storytelling increased students' motivation to read. They were willing to search information for their digital stories because of their relevant digital-story topics. In addition, they were aware that their digital stories would then be shared with their peers. This, in turn, boosted their motivation to read for information in order to enrich their digital stories. Grabe (2016) and Brandt et al. (2021) reflected on the important role of reading motivation for developing readers' reading ability. Lustyanite and Aprilia (2020) revealed that high interest in the reading topics led to high motivation, and eventually linked to better reading comprehension. Therefore, the applications of digital storytelling for reading instruction, which included both providing students with chances to use writing for reading improvement and increasing their motivation to read, contributed to the overall EFL reading ability.

Perceptions of Digital Storytelling

The other notable findings displayed students' positive perceptions upon the instructional design of the digital storytelling for EFL reading. From the students' interview protocol, they indicated that all stages accommodated them in creating their digital stories. They further illustrated that chunking and storyboarding supported them to develop a precise plan for their digital stories. Robin (2020) supported that developing a storyboard was the most significant stage in a digital story. In addition to each stage of digital storytelling intervention, students received scaffolding from not only a teacher through a digital story sample, background-building activity, and reading strategy instruction but also peers through collaborative feedback. Godwin-Jones (2018) asserted to these findings in that it was complex to create digital stories; therefore, providing sufficient scaffolding was essential. Moreover, online searching task for the digital storytelling offered them many chances to use reading strategies and provide extensive reading opportunities to meaningful reading for EFL students.

Additionally, students described having a sense of joy, pride, and motivation, knowing that their digital stories were shared with authentic audiences. They were happy, proud of their achievement, and willing to put extra efforts into making their digital stories better. They reported that the sense of ownership spurred them to put more effort in their reading to get information for their digital-story scripts. Murniati and Sanjaya (2017) indicated that students were more invested in their works because they had to share them online. Likewise, Chiang (2020) discovered that students were more motivated to do the work, once they knew that

their work would be shared with other people. Thus, showcasing students' work played an important role to promote their self-esteem and motivation to read.

Pedagogical Implications and Conclusion

The implications can be applied for two aspects: (1) the digital storytelling intervention and (2) EFL reading. The implementation of this intervention leads to Cambodian undergraduate students' English reading ability. With the applications of this digital storytelling for reading instruction, it focuses on the reading strategies to locate, understand, evaluate, and reflect on the texts. Explicit instruction of reading strategies should be followed by the extensive reading and writing tasks to create a digital story. Cambodian EFL Teachers should structure their reading instruction with meaningful digital storytelling stages and tasks, including (1) planning to select a digital story topic, (2) conducting research, (3) drafting, (4) revising, and (5) publishing for authentic audiences. Cambodian EFL teachers may adapt the digital storytelling intervention to best fit their purposes.

Also noteworthy for Cambodian EFL teachers is that reading motivation should be enriched because it plays an essential role in reading improvement. Reading teachers should develop teaching strategies to promote motivation in the reading class (Lustyanite & Aprilia, 2020). Teacher and peer scaffolding deserve a place in reading instruction, since it is considered a prerequisite in the language-learning context (Gonulal & Loewen, 2018). The support from the teacher and peers is indispensable to students in their journey to become better readers. As a project-based reading instruction, it is recommended that novel, unique, or authentic elements with peer feedback and peer assessment be integrated in the design of a project, so as to foster the autonomy, creative thinking, and language skills of the students (Maruanaya & Latief, 2019). Thus, teachers should create and provide opportunities for such scaffolding to happen.

In sum, the implementation of digital storytelling could improve Cambodian undergraduate students' EFL reading. In particular to EFL reading, digital storytelling accommodates the convergence of students' reading motivation, explicit reading instruction, extensive reading opportunities, and meaningful digital storytelling tasks. Despite the positive results, the study was conducted with a small sample, which might weaken the generalizability of the findings. However, while limited in generalizability, it contributes to the digital storytelling literature in Cambodian context.

Acknowledgement

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