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The Effects of a Project-Based Digital Storytelling Program Using a Video-Editing Platform*

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This study investigated the effects of a project-based digital storytelling program utilizing a video-editing platform with 124 college students in a General College English program. A web-based video-editing platform was employed to help the students create digital stories in small groups and thereby improve their language proficiency. In order to analyze the students' perceptions of language improvement and learning attitudes towards the digital storytelling program, this study administrated a pre- and post- survey questionnaire, as well as a practice TOEIC Speaking test. For an in-depth research, the researcher observed the classes and interviewed the students about their experiences with the digital storytelling program. The t-test results showed that there was a statistically significant improvement in their speaking skills. The students perceived their linguistic skills were significantly improved for writing and reading, but not for speaking. Another gap was noted between the students' perceptions of the language improvement and the reality of their improvement. The students showed positive attitudes towards collaboration, creativity, and the use of technology. The students enjoyed creating a digital story with the help of peers within a small group and with the instructor's feedback. The pedagogical implications of the findings are proposed for a wider implementation of project-based digital storytelling program in the EFL context.

[digital storytelling/project-based learning/video-editing platform/General College English program]

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I. INTRODUCTION

Many educators have sought instructional methodologies to improve learner's language proficiency and enhance their learning motivation in the ESL/EFL context. Project-Based Learning (PBL) has been proposed as an instructional approach that enables students to learn via doing a project. Many language educators have recently tested the use of project as an effective way for learners to augment their linguistic knowledge and learning skills (Hedge, 1993; Stoller, 2006; Thomas, 2000). Learners learn how to collect data, discuss ideas, solve problems, and present the result of their work by doing their project in the target language. Stoller (2006) points out that the use of project provides learners with authentic learning experiences and exposures to authentic language: "While engaged in project work, students partake in authentic tasks for authentic purposes" (p. 24). PBL is anchored on employment of authentic activities to stimulate students' use of language during which they negotiate plans, analyze data, and discuss information and ideas (Hedge, 1993). Authentic activities with real-world relevance are expected to provide the opportunity for learners to engage the task from different perspectives, to enhance collaboration, and to search for the solving of problems. The task, thus, helps learners become more confident in the use of the target language and promotes learners' autonomy, motivation, and integrated skill practice with the target language (Stoller, 2002).

This study on storytelling projects concurs to the theoretical underpinnings of PBL which can open the door to communicative competence, authentic learning, and language proficiency. Ohler (2008) demonstrates that storytelling as a language project is an effective instructional strategy for promoting learner motivations and improving learners' language performances. Many researches have established that storytelling as an authentic project can stimulate learners' motivation and improve language skills (Hafner, 2014; Kim & Lee, 2018; Lambert 2013). Robin (2008) considers digital storytelling as a powerful technological tool for the 21st century classroom and maintains that digital storytelling enables learners to develop language learning through digital images, computer-generated texts, videos, music, and voice narration. Educators in the digital age are obliged to help students develop multimedia skills by getting them more frequently exposed to the new environment (Kern, 2006; Merchant, 2015). In this context, the digital storytelling approach should be arguably seen as one of the most promising approaches for the EFL learners. The process of storytelling is a course of meaning-making with an authentic task and can be effectively adapted to the EFL context (Hafner, 2014). Kim and Lee (2018) report that Korean university students became better language learners in terms of expressing their feelings and being aware of the audience when they practiced their narratives in the digital storytelling class.

This research examines the idea that digital storytelling as a project would be helpful for Korean EFL learners' language learning and learning skills. The general college English programs in many Korean universities have struggled to answer the call for improvement of students' language ability and learning skills with the advancement of technology-mediated projects (Kim, S.B., 2009; Kwon, 2017). Project-based language learning with digital storytelling projects could bring more opportunities for practice of the target language in the EFL context. Despite the wide availability of digital media in the technology-orientated society of Korea, little research has been done in investigating a technology-mediated PBL, particularly with digital storytelling project in general college English programs.

This study investigated the effects of a project-based digital storytelling program in which freshmen were encouraged to take advantage of digital storytelling projects. To examine the effects of the program, the following research questions were posed.

1. To what extent does the project-based digital storytelling program have an impact on the students' speaking skills?
2. How did the students perceive the project-based digital storytelling program to improve language proficiency and learning attitudes?
3. What were the students' overall experiences while doing the digital storytelling projects? And how do the students perceive the use of the platform (technology) selected for doing the digital storytelling projects?

II. LITERATURE REVIEW

1. Project-Based Learning in L2

PBL is an instructional approach in which students learn how to solve problems, collect data, discuss ideas, and present the results of their project via participating in a project (Moursund, 1999; Thomas, 2000). As an open learning process which is not strictly defined, PBL should progress in relation to the specific teaching context and learners' needs and interest. PBL is an approach not only to nurture communicative competence skills, but also to equip learners with team-working, research-gathering, information synthesizing, utilizing high tech tools, and problem-solving skills. Since students have to engage in purposeful communication to complete authentic activities, opportunities are generated for them to use language in a relatively natural context and participate in meaningful activities that require authentic language use (Beckett & Slater, 2005). With this combination of many skills, students can become directors of their

learning process under the guidance of a skilled teacher (Haines, 1989; Sheppard & Stoller, 1995; Simpson, 2011). PBL's benefits in teaching English as a second language have been widely recognized. Many researches (Markham, 2003; Simpson, 2011) show that PBL can be more effective than traditional instructional methods in improving the English language proficiency among learners. Despite many studies on the effectiveness and benefits of project-based learning as an instructional strategy, it is challenging how to apply this approach to practical settings of the EFL context.

Empirical research on the impact of PBL in the EFL context showed encouraging results. Findings in the Simpson study (2011), which investigated whether PBL could enhance students' English language skills, and indicated that the students further developed their listening and speaking skills while applying the PBL approach. In doing their projects, the students collaborated to solve their problems and experienced an improvement of reading and writing skills. Finch (2007) proved that a collaborative project-based EFL class at a university proved effective in improving students' communicative skills. Kim, S.Y. (2005) presented that peer-assisted learning in a student-centered learning environment was useful and beneficial to students. The above case studies on activities illustrated clear benefits of language learning accompanied by students' collaboration. Kim and Park (2012) examined the effects of a PBL course using English drama-related projects in a college for two semesters. By comparing students' attitudes and reflection on language and content learning from two different classes, the study revealed that the students of different groups commonly valued project-based language learning in relation more to the improvement of their language, than to the enhancement of content knowledge. The students also believed that the use of learner collaborative projects in a drama course affected students' language learning, while not sufficiently contributing to effective content learning. For most students, it is challenging to connect the language learning with their content knowledge. In the PBL approach, Stoller (2006) cautioned that, without proper support, the students' cognitive load could be too high in a projected-based learning environment. Stoller indicated the need to develop or apply effective instructional strategies focusing on the language teacher's role in project-based learning activities.

Many researches have noted that students had difficulty in concentrating on the language learning while conducting project-based learning activities in large classrooms. To tackle this problem, PBL introduced technology into the language classrooms. With the advancement of network technologies, various studies have reported positive effects of technology-integrated PBL environment on students' achievement. Kwon (2017) investigated the impact of a mobile-assisted PBL program implemented in a Korean college English curriculum on linguistic and transferable skills. The pre-test/post-test analyses revealed a significant improvement in vocabulary skills through their projects

in the experimental group. The students of the project-based learning also became confident about improvement in team-working and problem-solving skills. While effective instructional strategies have been developed for conducting project-based learning activities has become an important and challenging issue, it still remains a challenge to promote students' motivation and concentration on the learning language in PBL. Consequently, in this study, the researcher attempts to cope with this challenge by integrating digital storytelling strategies into the project-based learning approach for EFL learners.

2. Digital Storytelling in L2

Digital Story Telling (DST) is a natural progression from oral storytelling which is a form of communication, driven by technological development. Digital storytelling is integrated with powerful technology—multimedia components of narrative, text, images and sound—and can be an effective approach for teaching and learning in the ESL/EFL context (Lambert, 2013; Jones, Chick, & Hafner, 2015; Robin, 2008; Sadic, 2008; Shin & Park, 2008). Robin (2008) explained, “Digital storytelling allows computer users to become creative storytellers through the traditional processes of selecting a topic, conducting some research, writing a script, and developing an interesting story” (p. 222). Frazel (2010) maintained that digital storytelling is a valuable teaching content and procedure that inspires active learning and fosters appropriate use of technology within curriculum.

Language is the core element of digital storytelling which attracts the attention of language researchers. In the ESL context, for example, digital storytelling has been widely used in classrooms to enrich learning experience. The positive impact of digital stories on improving language learners’ written (Sanca & Usluel, 2016), oral skills (Hwang et al., 2016), and learning skills (Robin, 2008; Sadic, 2008) have been reported in the literature. Studies have demonstrated that students have more opportunities for cooperative and discovery learning through using their language skills with telling stories. The utilization of digital storytelling can be particularly useful to language learners as it provides them with visual resources and ample speaking experiences and writing processes (Hung, Hwang, & Huang, 2012). Robin (2008) stressed on story writing by recommending four stages for making digital story-telling. In the first stage, the learner should select a topic for the story and then search for image resources, audio resources and informational content for the story. When the learner gathers all resources, he should think of the purpose of the story. In the second stage, the learner organizes and selects specific images, audio, text, and other content of the story. The learner can modify the images and image order, if necessary, in this stage. In the third stage, the

learner creates, records, and finalizes the story. And, in the fourth stage, the learner presents the story and receives feedback. He can show the story to his colleges and gather feedback about how the story could be improved, expended, and used in the classroom. By drawing upon the four stages, Robin examined the educational uses of digital storytelling at a university setting (University of Houston). Robin indicated that digital storytelling not only gets students engaged more actively in discussing the related topics, but also helps them organize their findings and conceptions in a more understandable way with digital images, computer-generated texts, videos, music, and voice narration.

A benefit of digital storytelling is the overall empowerment of learners. When students create a digital story, their roles change from passive information receivers to active knowledge developers (Hur & Suh, 2012). In a similar vein, Wood and Ashfield (2008) proposed respectively that technology of multimedia with text, images, and videos has the potential not only to improve English language learning but also to foster students' independent learning. Sadic (2008) maintained that the interaction between students and thinking aloud encourage students to foster active learning. Even further, the interactive tools of the digital media environment allow language learners to work collaboratively.

In the EFL context, Rahimi and Yadollahi (2017) compared the effects of offline versus online digital storytelling on the development of EFL learners' literacy skill. In their study, 42 Iranian English learners were divided into two groups to produce their stories using an online platform. The study demonstrated that reading and writing skills of the experimental group improved significantly in comparison to the control group. Kim, S.B. (2009) utilized digital storytelling as a means of improving student's grammar knowledge to Korean college students and reported the positive impact on their learning. Shin and Park (2008) showed that virtual reality learning environments have the potential to provide engaging learning experiences for Korean EFL learners. Students experienced 'learning by doing' while making a digital story in virtual reality. Xu, Park, and Baek (2011) developed a virtual life game, "Second Life" which is a story writing activity. The study showed that the experimental group who wrote a digital story in a virtual learning environment was more effective than doing digital storytelling off-line. Thus, the researchers demonstrated that entertainment-based learning environments can lead to learners' active participation and increased learning. In the research administered by Park (2017), primary school students were asked to use a story-telling platform to write a story and, upon completion, published their stories on the internet. The students improved not only their reading and writing skills, but also enhanced their collaborative creativity by using the digital storytelling platform and reading others' digital story online. The study pointed out that creating English stories through group collaboration reduced the burden for creativity and enhanced the students learning motivations.

Previous studies have shown that digital storytelling has the potential to facilitate language learning. When it is integrated into the classroom setting, digital storytelling can be an effective teaching method to promote a learner's language improvement and learning skills. In this study, digital storytelling was employed to develop a project-based learning activity, including developing a story, producing a video based on the organized pictures by adding subtitles and offering background information, and finally presenting the story in the classroom.

III. METHOD

1. Research Setting

An intensive winter English program was developed to improve the students' language skills and enhance learning attitudes at a university in Seoul. The program was a part of the general college English program for freshmen and was a one-hour credit course given before the spring semester. The program itself took place for 45 class hours over 3 weeks. 124 students from various departments participated in the class for 3 hours a day. The program consisted of two parts to help the students' language learning: English conversation class with the digital storytelling project (30 hours) and a TOEIC Speaking strategy class (15 hours). The program was designed to help students practice the four language skills: reading, writing, listening and speaking.

The English conversation class was based on the project of creating a digital story in groups. The project was also intended to help students develop learning skills through collaborative work in a group, using media technology and doing a group presentation. After the video production, the students presented their video clips in front of the whole class. Practical experience with video production was included to increase their English learning achievements. The TOEIC Speaking class was intended to improve students' speaking skills through the introduction of strategies on how to take an English-speaking test. By practicing the tactics of test-taking, the students tried to upgrade their scores for their future official TOEIC Speaking test.

For the implementation of the digital storytelling project, the researcher and the director of the general college English program provided the seven instructors, all native English speakers with a 3-day workshop on how to use the story-editing platform before the program started. During the workshop, the instructors created their own story to acquire some hands-on experience of using the technology for digital use and trouble shooting. The training session was expected to make the seven instructors become familiar with the use of video-editing technology resources and be prepared to offer

authentic and diverse digital language input for their teaching. At first, the 3-day workshop was enough for the more tech-savvy instructors but not enough for those instructors who were not as competent to offer the same level of instruction. But the less savvy instructors spent more time practicing with the video-editing program and with the researcher before the program launched.

2. Procedures

Table 1 presents an overview of the implementation of the project-based digital storytelling program which is modified for the learning context by following Robin's digital storytelling procedure (2008). Students started to work with their partners in a group to create a story in Steps 1 to 3. In the class, the self-selected groups of 2-3 students carried out a project by choosing a topic after consulting with the instructor. In Step 4, the students modified the number of images and the image order for their group story. Then the students moved to a story platform to create a short video of 5~10 minutes in Steps 5 to 6. The students were instructed on how to use a story platform: cloud-based *Wevideo.com*(https://www.wevideo.com). The students edited and completed their video on the platform. In Step 7, the students presented their story and received feedback about how their story could be improved in class.

TABLE 1

Implementing of the Project-Based Digital Storytelling Program

Step	Activity	Learning skill	Language skill	Class & Platform
1	Story circle	Collaborative learning	Speaking Listening	Talking about each story to find a topic (Lesson1-3)
2	Researching	Research skill	Reading Listening	Searching images and information for a topic (Lesson 4-9)
3	Writing a story	Creative/ critical thinking	Writing	Writing and/revising story(Lesson 10-15)/ proofreading
4	Searching & drawing images	Organizing	Writing Editing	Creating story board with images and pictures (Lesson 16-18)
5	Recording	Multi-media skill	Speaking	Recording story (Lesson 19-21) on the platform
6	Video editing	Multi-media skill	Editing	Editing & Digital literacy (Lesson 22-27) on the platform
7	Presenting	Presentation	Speaking	Presenting a group story (Lesson 28-30)

In the classroom, each student was asked to choose a partner, with whom they would work together to create a story of their own choosing. To prepare a fictional or non-fictional story, the students were shown 2-3 examples of digital stories from previous classes with which to get an idea of the format. After an introduction of the project, the instructor started a class activity: Story Circle. In a story circle activity, each student took turns talking about possible topics for usage in creating a digital story. And then they were given time with their group of 2-3 students to decide upon a topic and create a story. Each group of students began by selecting a topic: event, social issue, travel, fiction, etc. In Step 2, each group was asked to do research on the topic and bring pictures from their smartphone or from their SNS (Facebook, KakaoTalk, Linkedin, etc.) to create a story. In Step 3, the students were given time to prepare a 350-400 words script under the guidance of the instructor. The students were encouraged to develop scripts by sketching storyboards, writing descriptions and arranging them to show the story sequence. The instructor proof-read their finished scripts before allowing them to begin recording it with their Smartphones. During this time, other students were given a chance to finish their scripts. After recording their own story, they moved to a computer lab and spent time learning the collaborative video-editing platform, *Wevideo*, which enabled them to work together in a group. The lecture of video-editing was held by the researcher at a computer lab for a 75-minute class to show how to use the collaborative video-editing on the *Wevideo* platform. The video-editing class was taught in Korean to provide the way of using media technology which not related to the language learning.

FIGURE 1

***Wevideo:* Video-editing platform**



The researcher also showed the students how to use the digital software in creating each group folders into which to import images and recordings through the platform. In addition, editing a sample digital story was completed by each student under the instruction of the researcher, which provided a first-hand experience in exactly what the students would complete. Since creating a digital story requires specific multi-media skills and understanding of video editing concepts, it is important that the researcher introduce the digital storytelling concept, equipment and software resources required to create digital stories in the computer lab. In Step 5-7, the students were given time to make their digital stories using the video-editing platform. For the final class, the students were asked to present their finished stories to their classmates. The English instructor then gave each group of students a final grade for their stories.

3. Participants

A total of 124 students enrolled in the intensive English program which is a part of general college English program for freshmen. Generally, the students had studied English for more than 10 years since the 3rd grade of elementary school before enrolling in the class. Despite the prior experiences learning English, most of them had limited English proficiency. The students were from diverse majors and had to take an oral proficiency test, TOEIC Speaking test, for the sake of placement in the program. The practice TOEIC Speaking test carried a maxim score of 200 points (Level1- Level8) following ETS TOEIC speaking test. Their speaking ability ranged from level 2 (40-50 points) to level 7 (160-180 points). 124 students were divided into 3 different groups: beginner (78 students for level 2-4), intermediate (30 students for level 5-6) and advanced (16 students for level 7). Some of the students who had lived or studied abroad belonged to level 7. The average of the diagnostic test was around level 4 (94.31 points). Post TOEIC Speaking test was administrated to assess the students' language skill improvement at the end of the course.

Most of the students perceived their speaking ability to be the weakest while reading was regarded as the strongest. They had little chance to practice English in their high school, so they wanted to be exposed to the environment in which to speak and practice English more frequently. During high school, students spent a great deal of time learning and reviewing listening and reading skills in preparation for the College Scholastic Aptitude Test (CSAT). They felt a little bit frustrated and uncomfortable when the general college English classes at university focused on speaking and writing skills. But they were excited about learning from native speakers of English and had high expectations of improving their speaking skills with such opportunities.

4. Data Collection

This study adopted a mixed methods approach, accumulating both quantitative and qualitative data to provide a clearer understanding of how students perceived the effects of the project-based digital storytelling program. The pre- and post- TOEIC speaking test were administrated to analyse the improvement of language skills.

A questionnaire survey was administrated to the students at the beginning and the end of the course. The pre- and post- questionnaires were composed of 11 items to inquire about the learners' perception of their language improvement and learning attitude in the project-based digital storytelling approach. The question set was as follows: Q1-4: The Digital Story Telling (DST) project was helpful to improve language skills (reading, speaking, writing, listening); Q5. The DST project was a creative activity; Q6. The DST project was helpful to enhance critical thinking; Q7. The DST project was meaningful; Q8. The use of technology was helpful in making a digital story; Q9. The DST project was an effective learning technique; Q10. The DST project was fun; Q11.The DST project was a collaborative work. All items were measured by a five-point Likert-type scale, ranging from disagree strongly (1) to agree strongly (5). The students were asked about their preference for the program in open questions 12~14: Q12. How many times did you practice recording your script; Q13. Will you recommend the DST project to your friends; Q14. Write down any things you like/don't like about the DST project.

As both quantitative and qualitative data can "support and inform one another" (Miles & Huberman, 1994, p. 310), the researcher observed the same students creating digital stories in the class and on the story platform by teaching the video-editing skills. To find further insight into the students' perceptions about the effectiveness of the program, the researcher and one of the instructors interviewed 24 students selected randomly at the end of the program. The questions were simply put: "what did you like/dislike about the Digital storytelling project? "what can be improved, whether there was improvement in language proficiency (if so, in what skills)," "what are your suggestions for making it a better program?" They were asked if they enjoyed the digital storytelling process and whether or not they thought it beneficial to improve their English skills. They were also encouraged to offer reasons in support of their responses. The interviews were conducted either only in English or in both English and Korean at the request of students. The interviews lasted between 15-20 minutes. Their responses were recorded while the instructor and researcher took note of each student's key points. For the in depth analysis of the program, the researcher also observed the two different classes (beginner and advanced classes) in Lesson 10-15 and Lesson 22-28 of the program to examine the students' engagement of creating stories and the students' presentation skills with the use of digital platform.

5. Data Analysis

The data was analyzed in both quantitative and qualitative terms. The survey on the language skill improvement and students' attitudes was analyzed using SAS 9.3. To analyze the changes in the students' perception of language ability and learning attitude, *t*-test was conducted for each of the measures. The significant level was at $p < 0.001$. Results were compared within the group by using descriptive statistics. Mean scores and standard deviation were measured for the questions to gauge the impact of the program on various skills. The pre- and post-survey analysis revealed the learners' attitude about their own learning and gave information on their perceptions of the project-based digital storytelling approach. The open-ended questions elicited the students' experiences of the digital storytelling project using the technology. After interviewing the students, the researcher initially transcribed Korean data into English. Next, translations for the interview were crosschecked by one of the instructors who taught the program. Member checking was used by providing specific themes or descriptions to ensure the accuracy of the findings (Creswell, 2009). The students' responses were paraphrased and summarized by the researcher, the first person narrative form was maintained to convey the interviewees' message more concisely. To find the emergent themes, the researcher, for example, coded the data, "working with a partner was exciting," or "I liked working with a partner and it was a very creative time" as 'Collaboration' category. And then the data for emergent themes(categories) was discussed with the instructor who interviewed the students. With the instructor's help and teaching experiences, the researcher was able to interpret the data more accurately. To enhance the research's credibility, the demarcation of interview data from interpretation was employed to indicate what was stated by the students and what are the researcher' interpretations. And then the response data was compared with the results of the quantitative survey, which allowed the researcher to obtain a clearer picture of how the students perceived the effects of the program.

IV. FINDINGS

1. Language Proficiency

Table 2 shows the result of research question 1: To what extent does the project-based digital storytelling program have an impact on the students' speaking skill? The mean score on the pre-test was 94.31. The post-test result showed 113.36, with a *p*-value of .000($t = 7.94$, $p < .001$).

TABLE 2

Pre-test and Post-test Results of TOEIC Speaking

	Test	M	SD	*df*	*t*	*P*
Digital Storytelling	Pre	94.31	44.61	123	7.94	0.0001***
	Post	113.36	28.02			

The TOEIC speaking test results showed that students' post-test scores improved 9.05(113.36-94.31=9.05) points on average. The t-test revealed a statistically significant improvement in post-test score. Table 3, however, shows that the results of the perception of language learning is not in agreement with the result of the TOEIC speaking test.

TABLE 3

Perception of Impacting Four Language Skills

Skill	Test	M	SD	*df*	*t*	*p*
Reading	Pre	3.69	0.61	123	5.61	0.0001***
	Post	4.03	0.53			
Speaking	Pre	3.85	0.64	123	0.87	0.3875
	Post	3.91	0.58			
Writing	Pre	3.84	0.61	123	3.30	0.0013**
	Post	4.08	0.68			
Listening	Pre	3.68	0.68	123	0.31	0.7546
	Post	3.70	0.81			

*** $p < 0.001$, ** $p < 0.01$

At the beginning of the program, the students expected that their speaking skills would be substantially improved with the native speakers of English. Most of the students expected some improvement in their speaking skill with the class goals of digital storytelling. But the results showed that there was no improvement in speaking skills (M:3.85→3.91, t=0.87, $p < .387$). The results showed an improvement in reading and writing skills (Reading: M=4.03, t=5.61, $p <.001$, Writing: M: 4.08, t =3.30, $p <.01$). The students perceived that reading and writing skills were more improved than speaking and listening skills were after going through the program. There was a gap between students' perceptions of the language improvement and the reality of their improvements. It would be safe to say that the TOEIC speaking strategy lessons resulted in the improvement of the speaking skills. For the pre diagnostic test, the students were not familiar with the TOEIC test and showed low performance. At the end of program, the students score increased with more practice and test-taking skills. Overall, students showed that the

project-based digital storytelling program was effective in improving their reading and writing skills except for speaking and listening skills. The discrepancy will be discussed in connection with the students' responses.

2. Learning Attitudes

Table 4 shows the results of the students' perceptions of the effectiveness of the project-based digital storytelling program in impacting learning attitudes.

TABLE 4

Perception of Impacting Learning Attitudes

Item		M	SD	*t*	*P*
Creativity	Pre	3.65	0.55	8.90	0.0001***
	Post	4.19	0.57		
Critical thinking	Pre	3.68	0.64	0.87	0.3875
	Post	3.74	0.79		
Meaningful study	Pre	3.58	0.62	5.36	0.0001***
	Post	3.98	0.68		
Multimedia Tech. usage	Pre	3.50	0.68	5.10	0 .0001***
	Post	3.96	0.80		
Affective learning	Pre	3.68	0.69	2.52	0.0130*
	Post	3.87	0.73		
Fun learning	Pre	3.71	0.67	4.09	0.0001***
	Post	4.02	0.71		
Collaborative learning	Pre	3.75	0.58	6.65	0.0001***
	Post	4.27	0.68		

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table 4 shows the change of their perceptions of impacting learning attitudes from the project-based digital storytelling program. Among the perceptions, the paired t-test results indicated that there were significant differences in the average score for creativity (M=3.65→4.19, t=8.90, p<.001), collaborative learning (M=3.75→4.27, t=6.65, p< .001), meaningful study (M=3.50→3.98, t=5.36, p<.001), multimedia technology usage (M=3.50→3.96, t=5.10, p<.001), fun learning (M=3.71→4.02, t=4.09, p<.001), but not for affective learning (M=3.68→3.87, t=2.52, p<.013), or critical thinking (M=3.68→3.74, t=0.87, p<.387).

The students showed a strong desire to learn collaboratively in groups to do the digital storytelling project. The collaborative learning led them to be active in creating their own story and it became meaningful for their study. The students participated in engaging activities to develop digital stories by discussing story topics and choosing appropriate words and sentences for their story creation. Technology use during the making of their story in the groups led the students to engage in more active learning environments. The integration of technology and language learning was positive in multimedia technology usage. The students found that the projected-based digital storytelling activity was fun to do. However, there was no statistically significant difference in affective learning (M=3.68→3.87, t=2.52, p<.013), and critical thinking (M=3.68→3.74, t=0.87, p< .387). This revealed that the digital story telling project process was not efficient in leading them into being deep and thoughtful learners. Such a phenomenon seems to have occurred for two reasons. First, some of them were not confident enough in expressing themselves because of the limit of their English-speaking ability; second, some were hindered by technological difficulties in the development of their videos. The detailed reasons will be discussed with the students' responses in the interviews.

3. Students' Responses and Experiences

The third research question is about the students' experiences and responses about doing the digital storytelling project to improve their learning and how the students perceived the use of platform (technology) selected for doing the digital storytelling project. The data for this question were derived from the open-ended items (Jot down any things you like/don't like about the DST project.) and the interviews conducted with 24 students. The responses of the students were summarized into four aspects, 'collaboration and creativity,' 'meaningful learning with feedback,' 'language improvement,' and 'use of video creating platform.'

1) Collaboration and Creativity

As the results above showed, the students revealed the positive perceptions of the project-based digital storytelling program. In particular, the digital storytelling project helped them to be creative and collaborative in language learning. In the interviews, the most common response was that digital storytelling project enhanced their creativity and collaborative skills. It is notable that 17 of the 24 students specifically mentioned collaboration as being something they really liked about the digital storytelling project. 15 students, without being prompted, listed creativity as something they enjoyed about

doing the project. For example, two students reported that: "[the] digital storytelling project was really fun because I liked working with a partner and it was a very creative time." (S1) Similarly, Student 2 shared the following: "Working with a partner was exciting. We could be so creative together to make our story, *Lee Hansel and Lee Gretel*." (S2) Making a story line was not a difficult task for a group, but writing the story into English was difficult task for the lower level students.

Therefore, it would appear reasonable to suggest that collaboration and creativity worked harmoniously together, with group collaboration which acted as a causal factor in the enhancement of creativity. This fits closely with the results of the quantitative survey -collaborative learning ($M=3.75 \rightarrow 4.27$, $t=6.65$, $p< .001$). The students were satisfied with the project-based learning in terms of creating digital stories in the small groups. In a group, members were responsible for completing tasks together and helping each other. Even though their ideas or skills were not complete or perfect, the students were still encouraged to explain them to each other with images, as each member was an active participant as well as an important resource for the rest of the group.

2) Meaningful Learning with Feedback

The activity of creating a story pushed the students to get engaged in dynamic group interaction with the instructor's prompt feedback. First, the students were actively involved in their group work to create their stories. Sometimes lower-level students negotiated the meaning in Korean to use appropriate words and sentences for their story in a group. They approached to the instructor to get feedback on their language when they faced some difficulties to express their ideas. Through the instructor's prompt feedback, the digital storytelling project enabled the students to collaborate in a more interesting manner. While the students produced their own story which is an authentic and meaningful task, the instructors listened to the group story and facilitated the students' language learning.

Using the story platform, which is a video editing software and technology, less-skilled students observed their partner's video-editing by giving their opinions and searching images to make a better video-story. Less-skilled students were eager to make their share of contribution to the project by not hesitating to do extra work in areas that they could. The experience of creating a video story seemed to help students develop a sense of collaboration which enabled even less-skilled students to see themselves as active participants and to make their own contributions for completing the project. Their willingness to do some extra work for their group project suggests that collaboration work is good for language retention. Instructors helped the students within the groups with ideas to provide more meaningful feedback and assisted them as needed. The

instructors who have knowledge of editing videos helped less-skilled students edit each group's video for example. On the other hand, some instructors who were not as familiar with the multi-media editing program, instead, contributed to correction of students' sentences and to voice-recording on the video editing platform.

3) Language Improvement

Regarding language improvement, the TOEIC Speaking test taken after the completion of the course showed linguistic improvement in speaking skills in most students. However, students felt that the digital storytelling program was helpful in improving their reading and writing, but not for their speaking and listening skills. In other words, there was a gap between students' perceptions of the language improvement and the reality of their improvement. For example, S4 stated the following in the interview: "The program was helpful in writing a story in my group but it was [only] a little bit helpful in speaking because I had to use my language, Korean to express my complex idea. My partner and I in the group negotiated the topic-related ideas in Korean to create a story. We also spent most of time in writing our story rather than speaking English. For negotiating [our] complicated idea, my partner and I took an advantage of our mother tongue, Korean. I'd rather practice how to negotiate my ideas in English in English class. I became confident to write an English story after the class, but I'm still less confident to speak English to negotiate my ideas" (S4).

As the quantitative data showed no significance in critical thinking, students interview data revealed that the digital story telling project was not able to lead them into being deep and critical learners. Such a phenomenon seems to have occurred for two reasons. First, some of the students were not confident enough to express themselves because of the limit of their English speaking ability. There was little meaning-negotiation to make stories in English. It would be hard for them to develop their complicated ideas in English. Second, some were hindered by technological difficulties in the development of their videos. They spent more time on dealing with technology.

4) Use of the Video Creating Platform

As for the use of the video creating platform, twelve interviewees indicated that the project-based digital storytelling program changed their learning attitude. S6 stated: "With the digital storytelling activity, I made more efforts to learn and search for data than to practice English. I learned a video-editing program which was consuming my time. I spent lots of time in editing my story for several days and nights due to the lack of my editing skill." (S6) S7 indicated, "Digital storytelling would enhance our team

collaboration, we united our efforts to create our video with the professor's feedback on grammatical correction. I recorded the story while my partner chose background music to make our story sound better." S9 also stated, "I was so delighted to see a video showing each piece of well-organized content with pictures and music. Also, my presentation with the video was the best at the end of the class. I became more confidence with the video during the presentation. It was a really fun activity."

Images on the screen helped learners deliver accurate, detailed content, and the text insertion function within digital storytelling software helped students emphasize specific, relevant vocabulary. Before the actual recording, the students were encouraged to practice their narrations several times so as to correct grammatical mistakes, timing or problems with pronunciation. Visual images with written text and personal narration not only help students' present materials in a meaningful way but also increase their comprehension of such content (Ohler, 2008).

Lastly, the students' responses added insight into this research. Some students in the class at first experienced some difficulties in dealing with the video-editing program. They expressed difficulties in dealing with the software, or editing the video. Those students that were behind needed to catch up the editing skills required and needed more time to learn the technology for the required creation of a digital story. S10 stated that "Why do I have to learn a video-editing program in an English conversation class? I'd rather spend more time in practicing English conversation." The student was frustrated and stressed that she had to learn about editing videos instead of improving her English ability. One of the instructors also negatively mentioned about teaching how to deal with editing videos in the English conversation class. "Why do we (instructors) have to teach non-linguistic skills such as video editing, [and] tech-mediated skills?" He also got stressed out the time-consuming on the use of video editing software. It usually comes from the idea that learning other skills except English is useless and time-wasting in the language class.

There were some negative responses about working with a partner. Some students also complained about the group activity. Two students reported that they didn't like working with a partner because they had difficulties in arranging meetings and working together outside of classroom. At the end of the program, some of the students were short of time to finish editing their video and preparing their presentation in class. They were not able to get the instructor's feedback on their video-editing because they could not finish on time. Sometimes they released the final video product with some grammatical mistakes. They were not able to amend or re-edit the grammatical mistakes before they presented their video story.

V. DISCUSSION

There was a gap between students' perceptions and the reality of their improvements. While the result of the final TOEIC speaking test showed improvement of speaking skills, the students perceived that the program was helpful in improving their reading and writing, not for their speaking and listening skills. It can be concluded that the improvement in speaking skills was caused by the TOEIC speaking lessons while improvement in reading and writing skills was made from the digital storytelling activity through the creation of the group story. The students also had positive perceptions of their group collaboration, creativity, and the use of the platform but not for critical thinking and affective learning. Overall, the students enjoyed doing the digital storytelling project using a video-editing platform.

In discussing the findings in detail, the researcher must mention what aspects of the program the students did perceive positively. In the interviews, the students responded on clear benefits of collaborative and creative learning in the small group. The students valued the project-based digital storytelling language learning in relation to the improvement of their writing and reading skills to make a creative story. The members of each group worked together to correct their sentences by checking grammar. It is considered as 'collaborative creativity' (Pennycook, 2007) which is a matter of re-contextualizing and building upon the words and ideas of others through group interaction. In this research, the lower skilled students lost their fear of making an English story due to the help of their partner(s) and the instructor's feedback in the small group. However, this study showed that the project-based digital storytelling approach was not necessarily effective in critical thinking learning due to the limit of student' English ability while being rather successful in making many of the students feel motivated for learning.

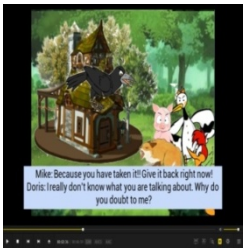
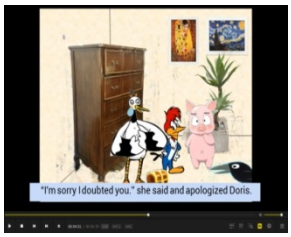
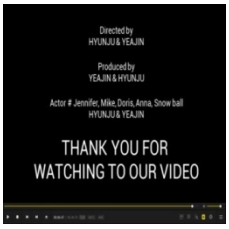
As some interviews showed, project-based language learning in a homogenous group of the EFL context could be less effective in negotiating some complex ideas once they resorted to their mother tongue to express themselves. In the observation of a lower-level class, the researcher noticed that the students were a little bit afraid of creating a story in English when the instructor mentioned the project at the beginning of the class. However, in time, the students became confident in creating their own story in the small group and with the instructor's feedback. Each student was not alone to follow the lesson and do the work. In each group 'affinity group' (Jones & Richards, 2015), the students collaboratively developed their story, and 'shared passions (Gee, 2015)' by providing their ideas. Groups were advised to collaborate in all aspects of the story-making process. The students made sentences together, and then reviewed and discussed their stories by offering ideas. Through the group collaboration, the project proved a fun activity for the

students. Lastly, the instructor met the individual groups so they could receive personalized feedback regarding their projects. With the instructor's prompt feedback and help, each group was able to finish their project.

The use of technology to create a video, however, becomes an obstacle to those who are not familiar with the editing program. Those students wanted to spend more time in practicing conversational English than dealing with video-editing and technology. While the students were editing their story on the software platform, the instructor acted as a facilitator, ensuring that students were able to use the technology appropriately. Each group of students was asked to complete a digital storytelling project by adding subtitles, recording voices, and inserting background music. For the final touch on the video story, the instructor checked the finished product of every digital story before allowing students to publish their story on the platform for each group presentation. Unfortunately, some student groups did not have enough time for the instructor's final approval due to their insufficient technology skills. At the end of the program, the students were short of time to finish editing their video and preparing for their presentation in class. That is why they released the final video product with some grammatical mistakes as in the following video example: "THANK YOU FOR WATCHING TO OUR VIDEO. (underline added by the author)"

FIGURE 2

Video Sample (Who is the Suspect?)

Creative story (Title)	Scene1	Scene 2
		
Scene 3	**Scene 4**	**Ending credit**
		

Students who were not competent with the video editing software could not meet the deadline for the instructor's feedback and just released the final video with some grammatical errors which affected student's final grade.

The use of technology, particularly the internet, is useful for communicating in the era of the globalized world (Sadic, 2008). In other words, given that students do not learn everything exclusively in class anymore, instructors need to provide different contexts of learning by using current technology with classwork and homework. In this regard, training on how to use instructional technology should be justified to take advantage of existing digital content and methods for improvement of language skills.

VI. CONCLUSION

This study investigated whether the digital storytelling project could positively impact students' language skills and learning attitudes as well as how students would perceive such an impact. Through the digital storytelling project, the students improved their language skills in speaking and perceived the improvement of reading and writing skills, and experienced enhancement of the abilities to plan, research, and fulfill the project goals in the small group. Therefore, it can be concluded that the project-based digital storytelling program not only reinforces the students' learning attitudes but also improves their language competence.

Accordingly, based on the results, some important implications and suggestions are made for those who want to utilize a project-based digital storytelling program for university students. In order to search for effective ways to help them in the EFL context with the usage of technology, this study investigated the integration of the project-based digital storytelling approach into language classroom. The findings demonstrate that the project-based storytelling not only helps students create a collaborative learning environment but also assists students to be more creative while improving their English language skills. No previous study has examined the potential of the digital storytelling approach using a story platform in the college general English curriculum in the EFL context. In the post-study interviews, the students were mostly excited about getting engaged in technology-rich, active, and collaborative learning situations. The digital storytelling project offered a group-centered learning environment and thus encouraged the students to get motivated through group collaboration.

This study has several limitations: First, there was no standard assessment of language proficiency except for speaking skills. To get corroborative evidence of learners' language improvement, standard assessments must be needed for the research. Second, because this study focused on a language skill over a limited period of time, the findings

may need to be compared to a result of a longer intervention period. Third, the lack of comparison group made it difficult to provide any definitive answers with regard to the pluses and minuses of the approach. Any future studies should be conducted by developing more "contextualized" implementation methods which may yield a stronger framework for different students for the general English curriculum.

Even though there are several limitations of this study, it has some pedagogical implications in EFL contexts in terms of developing a project-based digital storytelling approach for college students. Findings of this research would be valuable in adding digital storytelling projects to the college English curriculum and providing instructors with a wealth of examples of project-based digital storytelling activities. In the digital society, the college general English curriculum needs to focus not only on English communication skills but also on technological skills for millennial students in the digital era.

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Examples in: English
Applicable Language: English
Applicable levels: Secondary/College

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