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Students' Attitudes towards the Use of Digital Storytelling in Foreign Language Classroom: The Zimmer Twins Project

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Abstract

The study investigates students' attitudes toward the integration of a Digital Storytelling (DST) project into a foreign language classroom, with particular interest in language improvement and motivation. The study incorporates both quantitative and qualitative research methods. The data were gathered from a class of university students learning English as a foreign language in Thailand (17 participants) via two instruments: questionnaires, and semi-structured interviews. The findings reveal that students have positive attitudes towards the integration of DST into the language classroom and think that participation in such a project is beneficial to their language improvement and motivation. Suggestions are made for further research, especially on the real contributions of DST to students' language improvement and motivation.

INTRODUCTION

Storytelling is one of the oldest forms of human communication, being used for entertainment, and for the promotion of education and cultural values. Barrett (2006) proposed that stories encompass different elements of learning pedagogy including student engagement, reflection for deep learning, technology integration, and project-based learning. Essentially, these elements are crucial for learning and are areas that teachers are perhaps interested in promoting. Also, it can serve as a very effective pedagogical instrument in the development of language skills both in a first language (L1), and in a foreign or second language (L2).

In the language classroom, storytelling has also found its place. Students can bring different experiences to the class, which can generate a resourceful discussion and serve as a good starting point for them to write or speak about (Reinders, 2011). With the Web 2.0 technology, it allows learners more access to technology for learning purposes. Digital Storytelling (DST) has started to find its place in the language classroom, not necessarily as a replacement for traditional storytelling, but as an alternative and perhaps a more engaging and motivating activity for students.

DST is frequently considered an effective tool for developing a variety of skills for students, namely, speaking, writing, critical thinking and problem-solving. However, although research evaluating DST is growing both in first and second languages, the body of DST research is still

rather small especially in foreign language learning (Castaneda, 2013). A considerable number of studies examining the utilization of DST do exist; however, only a handful of them focus on L2 learning. On the whole, the studies that exist appear to show that DST is effective and useful for L2 learning. (Cloud, Lakin, & Leininger, 2011; Vinogradova, Linville, & Bickel, 2011; Sadik, 2008) However, to my knowledge, none of the existing studies investigated attitudes of students towards DST, which is a very important factor indicating the success of technology implementation in a classroom (Al-Shammary, 2007). This paper sets out to expand the body of knowledge regarding the use of DST in foreign language classroom by examining the attitudes of students towards its implementation in the classroom.

LITERATURE REVIEW

Attitude towards language learning

The term 'attitude' can mean different things in different fields. It is one of the central concepts in social psychology (Strauss, 1945). In language learning, attitude is considered one of the factors having a crucial role in second or foreign language learning (Ganschow et al., 1994). On top of that, its significance in language learning has been emphasised by many researchers (Ellis, 1985; Gardner & Lambert, 1972; Sauvignon, 1976). Sauvignon (1976), for instance, suggests that attitude is the most important factor in second language learning. Also, Ellis (1985) emphasises the importance of attitude stating that attitude and motivation are crucial factors determining the proficiency level that different learners can achieve.

Furthermore, as far as language learning is concerned, attitude towards learning situation is also very crucial. Al-Shammary (2007) proposes a very useful idea about students' attitude in language classroom that it is important to measure students' attitudes toward certain classroom activities, textbooks, laboratory experience or even teachers' instruction so that appropriate adjustments can be made. On top of that, when it comes to technology, students' attitudes towards integrating technology into classroom represents a high importance in the success of implementation of technology (Al-Shammary, 2007). Also, as stated by Al-Khadi and Al-Jabri (1998), students' attitudes toward technology are important determinants that may have an impact on the success of implementing that technology and claim that the success of any integration of technology in instruction depends largely on students' and teachers' attitudes towards them.

Digital Storytelling in foreign language learning

The definitions of DST differ among researchers, yet they demonstrate many significant similarities and main ideas. Generally speaking, DST is the practice of using computer and multimedia tools to tell stories. In other words, it combines traditional storytelling with various types of multimedia. In digital stories, a set of multimodal features and elements are included, such as texts, visual images, audio narration, music/sound and video clips (Robin, 2006).

DST has been seen as a powerful tool for L2 learning. A limited number of studies have demonstrated that DST is beneficial for L2 learning, particularly in terms of language improvement and learning motivation. Robin (2006) suggests that DST is useful for students with different learning styles (auditory, visual, text, etc.). Furthermore, Sadik (2008) investigated the effectiveness of DST and students' engagement among middle school-aged learners and reported improvements in students' usage of the past tense through their creation of a digital story. Additionally, Tsu, Wang, and Seng (2006) studied elementary school-aged students using a storytelling website to compare two groups of learners, an experimental group and a control group, and reported that the experimental group retained more language (words and phrases) and showed greater sentence complexity.

In addition, Ramirez-Verdugo and Belmote (2007) lends support to the aforementioned study, finding that students who were exposed to DST performed better in a listening comprehension task than students who only listened to the story from the teacher. On top of that, they reported that the application provides visual images and interaction for students, which in turn encourages them to focus better on their spoken language. Recently, Yang and Wu (2012) explored the impact of DST on academic achievement among senior high school students learning English as a foreign language using a quasi-experimental design. Echoing the results of Tsou et al. (2006) and Ramirez-Verdugo and Belmote (2007), it was found that the experimental group outperformed the comparison group in listening skills. Besides, students in the experimental group showed significant improvement in their reading and writing skills through providing and receiving critical feedback and collaboration with their peers.

DST has been reported to be utterly engaging and motivating for students (Yoon, 2013; Yang & Wu, 2012; Hafner & Miller, 2011; Robin, 2008; Sadik, 2008). This is because, although creating a digital story involves the process of writing, it is not perceived as a writing assignment by learners. Instead, it is perceived as a creative process rather than an academic one. This makes the assignment more engaging and motivating for them (Robin, 2008). Similarly, Hafner and Miller (2011) lend support to Robin's study that university students perceive a DST task as a different type of writing and reading from an academic one.

Sadik (2008) suggests that DST provides students with opportunities to personalize a story which contains deep individual meaning. This element of DST is suggested as being very motivating for many students. Yang and Wu (2012) went further by conducting an empirical study on the impact of DST on learning motivation. Promisingly, the results revealed that DST had a positive effect on student's learning motivation in terms of task value and self-efficacy.

As we can see from the literature, DST has been found to be motivating for and beneficial to language learning. Also, students' attitude towards technology is considered an important factor contributing to the success of technology implementation in L2 classroom. Therefore, the purpose of this study is to investigate how students view the use of DST in a foreign language classroom in relation to their language improvement and motivation in order to provide information to other teachers about whether such technology should be implemented in the future. This research study is guided by one research question:

What are students' attitudes towards the integration of a digital storytelling project into a language classroom?

RESEARCH DESIGN AND METHOD

Participants

The participants are from a class of university students learning English as a foreign language at a middle-sized university in Thailand. The class consists of 17 students. All of them are enrolled in an English course called "English for Communication Skills I", a compulsory course for all non-English major students at the university. From a demographic perspective, fifteen were female and two were male. All of them have a computer at home and use it at least once a month. Their English levels range from beginner to intermediate (self-reported). Also, their reasons for learning English are varied, but mostly it is for their future career. The data were collected using a Demographic questionnaire consisting of nine items. The items consist of these categories: name, age, gender, years of learning English, computer knowledge, frequency of computer use, computer ownership, English proficiency and reasons for learning English (see Table 3 for details).

Table 1
Background information on study participants (1)

Participants	Age	F	%	Gender	F	%	Years of learning English	F	%
	18	2	11.76	Male	2	11.76	0-5	0	0.00
	19	13	76.47	Female	15	88.24	6-10	2	11.76
	20	2	11.76				11-15	13	76.47
							15-20	2	11.76

Note: F = frequency

Table 2
Background information on study participants (2)

Computer knowledge	F	%	Frequency of computer use	F	%	Computer	F	%
Poor	0	0.00	Every day	8	47.06	Yes	17	100.00
Fair	8	47.06	Every other day	5	29.41	No	0	0.00
Good	7	41.18	Once a week	1	5.88			
Very good	2	11.76	Once a month	3	17.65			
Excellent	0	0.00	Never	0	0.00			

Table 3
Background information on study participants (3)

English proficiency level (self-reported)	F	%	Reasons for learning English	F	%
Beginner	2	11.76	Interested in English	3	17.65
Elementary	7	41.18	Interested in culture	1	5.88
Pre-intermediate	6	35.29	Have friends who speak English	0	0.00
Intermediate	2	11.76	Compulsory course	3	17.65
Upper intermediate	0	0.00	For future career	9	52.94
Advanced	0	0.00	For travelling	1	5.88

The Zimmer Twins

The online platform used in this study is called the Zimmer Twins. It is a website (http://www.zimmertwins.com) primarily designed for children to share their creative stories through animated movies. The functions afforded by the website allowed the researcher to create a virtual classroom for students participating in the project. The website provided the students with an easy-to-use movie making tool (Figure 1). The multimodal features offered by the website include visual images, self-generated texts, sounds, movements (Figure 2), feelings and expressions. Plus, three characters, a twin brother and sister and a cat, are provided. It should be noted that DST tasks in this platform only allow users to produce speech in written formats i.e. they cannot record their voice into the programme, instead they have to create dialogues between characters using texts.

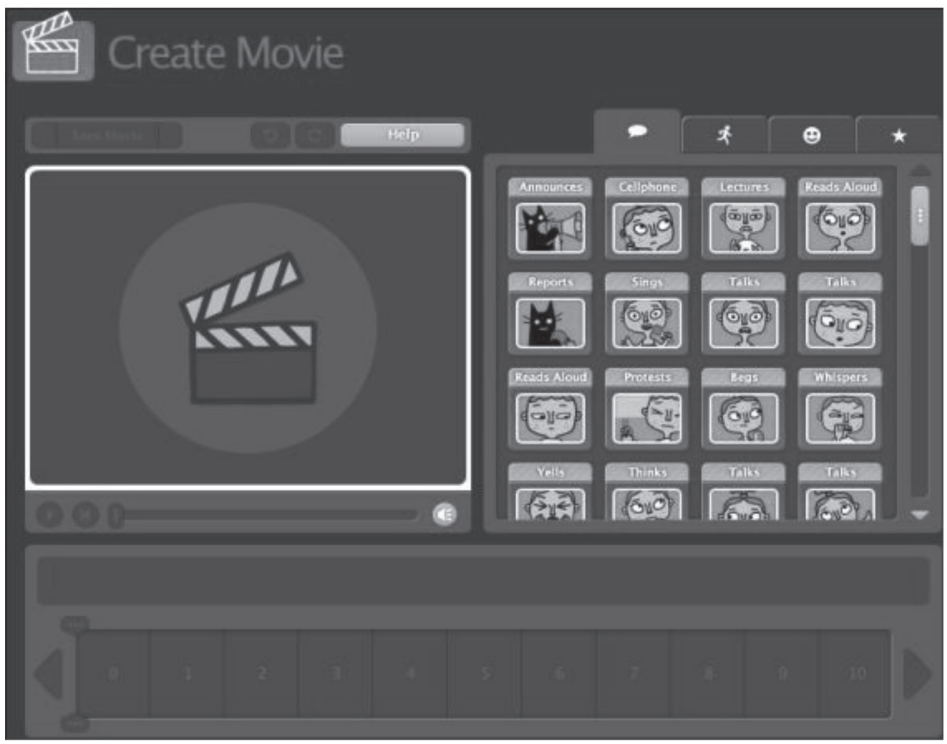

Figure 1 Movie-making tool

Figure 2 Movements available to students

The movies created by students were stored and could be viewed only by the teacher, the researcher and other students in the virtual classroom. Also, the movies could be commented on by the teacher and the other students. Additionally, the website provided space for students to write a blog and was utilized by the students to write their weekly reflections. Importantly, the videos created could not be shared in other online spaces. This provided privacy and exclusiveness for the students in this project.

Implementation of the DST project

The course was designed for non-English major students at the university to develop their English communication skills. The DST project was integrated as part of the course syllabus and implemented for the first four weeks of the course (see Figure 3). In the introduction class, students were introduced to the project by the course instructor. Also, an introductory video, explaining what the project was about and briefly introducing the Zimmer Twins website, was presented in the classroom. Then, they were asked to familiarize themselves with the website at the end of the class and over the week before the next class. In addition, they were informed that a video tutorial created by the researcher was available on YouTube. In the second week, students were assigned to individually complete a storytelling video on a given topic. The topic was related to what students had learned in the class that week.

In the third week, students were assigned to individually create a personal storytelling video on any topic. In the last week, students were assigned to work in groups of three to complete a storytelling video. In every video, students were encouraged to use vocabulary and grammar

they had learned in class. Also, the course instructor and researcher gave feedback on the students' videos every week and students were encouraged to comment on their peers' videos. Besides, students reflected on their learning process every week through weekly reflections.

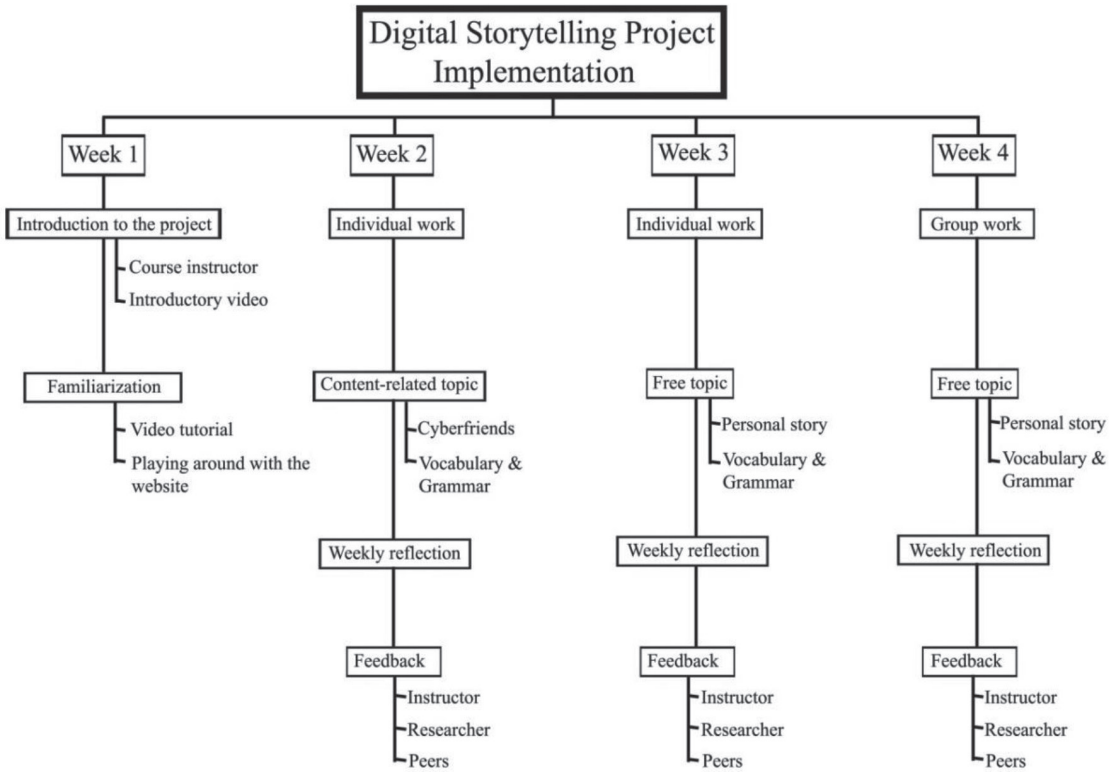

Figure 3 Implementation of the digital storytelling project

Instruments

Two sets of data, quantitative and qualitative, were collected through two instruments: questionnaires and interviews. An attitude questionnaire was developed for this study. The attitude questionnaire consisted of 21 five-point Likert scale items measuring student's attitudes in five categories: language improvement, intrinsic motivation, task engagement, self-efficacy and task value. Also, three open-ended questions were added to get more ideas from the participants. The attitude scale was developed for this study by the researcher based on the potential of DST found in the literature, namely, language improvement, motivation and engagement. In the language improvement scale, listening and speaking skills were not included due to the nature of the task (as described in the Zimmer Twins section above).

Individual semi-structured interviews were conducted face-to-face and online via two platforms: Skype, a voice-over-Internet-protocol (VOIP) application and Facebook Chat, an instant messaging service on Facebook.

Data collection and analysis

The attitude questionnaire was distributed at the end of the project. All copies of the questionnaire were distributed online using the Google Docs online survey tool. Then one third of the participants (N=7) were selected randomly for interviews with the researcher (3 via Skype and 4 via Facebook Chat). Throughout the project, participants wrote their reflections and these were used to support the data from two other sources.

The data obtained from the questionnaires were analysed using the Statistical Package for Social Sciences 20.0 (SPSS), and fundamental descriptive statistics, including frequency, mean scores and standard deviations, were calculated. The scores for the five-point Likert-scale items are interpreted as follows: 1.00 is strongly disagree, 2.0 is disagree, 3.0 is neutral/don't know, 4.0 is agree and 5.0 is strongly agree. The scales' items 4.0 = agree and 5.0 = strongly agree are combined when reporting the data as well as the scales 2.0 disagree and 1.0 strongly disagree. The data from the open-ended questions, interviews and reflection logs are used to support the quantitative data.

RESULTS

Overall, the students in this study showed positive attitudes towards the integration of DST into a language course in terms of their perceived language improvement, motivation, engagement and task value.

1. Students' attitudes related to language improvement

Four items in the questionnaire aimed to investigate the participants' attitudes towards DST tasks in terms of their perceived effect on language learning.

Table 4
Students' attitudes about DST and language improvement

		SD	D	N	A	SA	Mean	STD
Q1	F	0	0	3	11	3	4.00	.612
	Percentage	0.00	0.00	17.65	64.71	17.65		
Q2	F	0	0	3	13	1	3.88	.485
	Percentage	0.00	0.00	17.65	76.47	5.88		
Q3	F	0	0	5	8	4	3.94	.748
	Percentage	0.00	0.00	29.41	47.06	23.53		
Q4	F	0	0	0	9	8	4.47	.514
	Percentage	0.00	0.00	0.00	52.94	47.06		

Notes: F = frequency, SD = strongly disagree, D = disagree, N = neither agree nor disagree, A = agree, SA = strongly agree, STD = standard deviation.
Q1: The DST project helped me improve my reading skill. **Q2:** The DST project helped me improve my writing skill.
Q3: The DST project helped me improve my grammar. **Q4:** The DST project helped me improve my vocabulary.

The descriptive statistics in Table 4 show that the participants agreed with all the statements in this category. A majority of the students (82%) agreed that the DST project helped them to improve their reading and writing skills. A slightly lower percentage (71%) reported that they had improved their grammar in the project. Impressively, all the students (100%) agreed that the project helped them to improve their vocabulary.

In answer to the open-ended questions and in the interviews, most of the participants agreed that the DST project helped them improved their language skills, particularly the development of vocabulary and grammar. In terms of vocabulary, students reported the following:

> *I gained a lot of new vocabulary, especially from the movements, because it's like a picture dictionary, so I learned new words when I was creating my videos. This is because I learned better from sounds and pictures than from texts, so this program really helps me develop my vocabulary.*
>
> [Interview, Participant #13]

> *Using conversational sentences and vocabulary. This is because when we created the videos, we needed to plan and write the story plot for which I had to find appropriate vocabulary in order to create complete sentences, as I wanted.*
>
> [Questionnaire, Participant #13]

2. Students' attitudes related to intrinsic motivation

Five questions looked at students' attitudes toward the DST project in relation to intrinsic motivation. The mean scores in Table 5 illustrate that most of the students agreed with all of the statements in this category and perceived using DST as motivational.

Table 5
Students' attitudes related to intrinsic motivation

		SD	D	N	A	SA	Mean	STD
Q5	F	0	0	3	7	7	4.24	.752
	Percentage	0.00	0.00	17.65	41.18	41.18		
Q6	F	0	0	4	9	4	4.00	.707
	Percentage	0.00	0.00	23.53	52.94	23.53		
Q7	F	0	0	2	10	5	4.18	.636
	Percentage	0.00	0.00	11.76	58.82	29,41		
Q8	F	0	0	1	8	8	4.41	.618
	Percentage	0.00	0.00	5.88	47.06	47.06		
Q9	F	0	0	2	11	4	4.12	.600
	Percentage	0.00	0.00	11.76	64.71	23.53		

Notes: F = frequency, SD = strongly disagree, D = disagree, N = neither agree nor disagree, A = agree, SA = strongly agree, STD = standard deviation.
Q5: The DST project aroused my curiosity, even if it was difficult to learn.
Q6: The DST project made me like English more. **Q7:** The DST project was challenging.
Q8: The DST project was interesting. **Q9:** The DST was a motivational tool for me to learn English.

A majority of the students (82%) reported that although the DST project was difficult to learn, it aroused their curiosity. Similarly, a significant proportion (76%) agreed with the statement that the DST project helped them to like English more. In addition, very high percentages of the students found that the DST project was challenging and interesting (at 88% and 94%, respectively). Finally, DST was perceived to be a motivational tool to learn English by a large proportion of the students (88%).

From the interviews, the participants found the DST project motivational, interesting, challenging and fun. Most of the participants reported that the DST project made them feel more interested in learning English and that they eventually liked English language more. One participant said:

> *Well, for someone who is not so good at English like me, it does not mean I do not like it, however, I have been taught in a traditional approach of teaching English which forces students to remember everything by heart and never really got to use what I have learned. I think that is one of the reasons why I am not good at English, but when I find something that is cute, fun and challenging, it urged me to think and be creative so I enjoyed doing it. This also makes me want to learn, understand and when I understand and I start to like English.*
>
> [Interview, Participant #1]

Also, most of them reported that learning through a multimedia tool like DST helped them to feel more motivated and interested in learning English, especially when comparing it with a traditional classroom; as one participant said:

> *Well, if you compare it with traditional English learning, learning through multimedia materials attracts my interest. For example, watching movies or cartoons is motivating for me, but this program is even more motivating because I am involved in creating my own movie and I feel like it's my own work. This really makes me feel motivated and I learned English from doing this as well.*
>
> [Interview, Participant #8]

Some participants indicated that doing the DST project was like playing games rather than doing an academic task; therefore, they were more enthusiastic about working on it. On the whole, students viewed DST as motivational and no negative views were mentioned regarding this issue.

3. Students' attitudes related to task engagement

Six questions in the questionnaire investigated whether students found the DST tasks engaging. According to the mean scores, the students agreed with all the items. The two highest mean scores, for Q11 and Q15, show that almost all the students (88% and 88.23%, respectively) felt that the DST tasks were very engaging and that they were so engaged in them that time passed quickly. Strong agreement can also be found with the notions that the DST tasks were meaningful to them (82%) and that they were able to make decisions when doing

DST tasks (76%). The students also believed that they had the skills to complete the tasks and could control their learning (at 76% and 71%, respectively).

Table 6
Students' attitudes related to task engagement

		SD	D	N	A	SA	Mean	STD
Q10	F	0	0	3	13	1	3.88	.485
	Percentage	0.00	0.00	17.65	76.47	5.88		
Q11	F	0	0	2	8	7	4.29	.686
	Percentage	0.00	0.00	11.76	47.06	41.18		
Q12	F	0	0	4	6	7	4.18	.809
	Percentage	0.00	0.00	23.53	35.29	41.18		
Q13	F	0	0	4	10	3	3.94	.659
	Percentage	0.00	0.00	23.53	58.82	17.65		
Q14	F	0	0	5	8	4	3.94	.748
	Percentage	0.00	0.00	29.41	47.06	23.53		
Q15	F	0	0	2	9	6	4.24	.664
	Percentage	0.00	0.00	11.76	52.94	35.29		

Notes: F = frequency, SD = strongly disagree, D = disagree, N = neither agree nor disagree, A = agree, SA = strongly agree, STD = standard deviation.
Q10: The content of the DST tasks was meaningful to me. **Q11:** The DST tasks were very engaging.
Q12: When doing the DST task, I could make decisions about what to do. **Q13:** I had the skills to complete the DST tasks.
Q14: When doing the DST tasks, I controlled my learning. **Q15:** When doing DST tasks I was so absorbed in what I was doing that time seemed to pass quickly.

The qualitative data lend support to the quantitative data, in that the students found the DST tasks highly engaging. Three main reasons were reported in the interviews and weekly reflections. Firstly, most of the students reported that the DST tasks were interesting, challenging and fascinating to work with. Secondly, when they were working with the DST tasks, they felt engaged and could stay with them for a long time, particularly in comparison to other types of tasks, e.g. paper-based. One participant commented that:

> *Moreover, I am a type of person who cannot just sit on the desk and read books for a long time, but doing this is like reading books in a new pattern and I can stick with it for a long time so it's very interesting for me.*
>
> [Interview, Participant #13]

4. Students' attitudes related to task value

Three questionnaire items looked at the value the students placed on the DST tasks. The mean scores in Table 7 indicate that students place quite a high value on the DST tasks. Nearly all the students (94%) thought that what they learned from the DST tasks would be applicable to other aspects of their lives. Likewise, most of the students appeared to perceive DST tasks as being useful for their English learning (88%). They also saw the importance of learning from the DST tasks (82%).

Table 7
Students' attitudes related to task value

		SD	D	N	A	SA	Mean	STD
Q16	F	0	0	2	8	7	4.29	.686
	Percentage	0.00	0.00	11.76	47.06	41.18		
Q17	F	0	0	1	11	5	4.24	.562
	Percentage	0.00	0.00	5.88	64.71	29.41		
Q18	F	0	0	3	14	0	3.82	.393
	Percentage	0.00	0.00	17.65	82.35	0.00		

Notes: F = frequency, SD = strongly disagree, D = disagree, N = neither agree nor disagree, A = agree, SA = strongly agree, STD = standard deviation.
Q16: DST tasks are useful for my English learning.
Q17: I think I will be able use the things I learned from DST tasks in other aspects of my life.
Q18: It is important for me to learn from the DST tasks.

In the interviews, some of the participants strongly agreed that the DST tasks were useful for their English learning and in other aspects of their life. One participant who minored in English said that:

> *As for my language, my English skills are certainly better, particularly for my minor subject. I have to catch up with my classmates, and so it is useful for me.*
>
> [Interview, Participant #1]

Also, the DST tasks were perceived as a process of learning that involves a variety of skills, such as planning, critical thinking and creativity. These skills are stimulated when students are doing the tasks and are believed to be useful in subjects other than English, as one participant mentioned:

> *Well, I actually practised many things in doing digital storytelling tasks such as thinking process, planning and creativity ... It generally helps me to be creative and I can use this with other subjects not restricted to just only English. Moreover, English is important and I will get to use it eventually in my life.*
>
> [Interview, Participant #8]

6. Students' attitudes related to self-efficacy

The last three items in the questionnaire explored students' beliefs in their ability to do the DST tasks. The results in Table 8 below show a slight contradiction. While a very high proportion of the students (88%) believed that they would be able to successfully complete the DST tasks and learn all the technical skills needed, almost half of them were not certain that they would be able to do an excellent job on the DST tasks.

Table 8
Students' attitudes related to self-efficacy

		SD	D	N	A	SA	Mean	STD
Q19	F	0	0	2	11	4	4.12	.600
	Percentage	0.00	0.00	11.76	64.71	23.53		
Q20	F	0	0	2	11	4	4.12	.600
	Percentage	0.00	0.00	11.76	64.71	23.53		
Q21	F	0	0	8	5	4	3.76	.831
	Percentage	0.00	0.00	47.06	29.41	23.53		

Notes: F = frequency, SD = strongly disagree, D = disagree, N = neither agree nor disagree, A = agree, SA = strongly agree, STD = standard deviation.
Q19: I was confident that I would be able to complete the DST tasks successfully.
Q20: I was certain that I would learn all of the technical skills required to complete the DST task.
Q21: I believe I could do an excellent job on the DST tasks.

In the interviews, this slight contradiction was raised as an issue for investigation. On the positive side, five students were confident in their ability to complete for various reasons, e.g. one student had experience of creating a successful story in the past so she was confident in her ability. Also, the fact that the students perceived the tasks to be interesting made them feel more confident. More importantly, the user-friendliness of the tool, as well as having access to video tutorials, appeared to be a crucial factor contributing to their confidence in their ability to do the tasks successfully. To exemplify this, one student said:

> *I think so because the website and movie-making tool are user-friendly. I watched the video tutorials and could understand almost everything and when I did it myself, it was just easy.*
>
> [Interview, Participant #3]

Despite the overall positive trend, two of the students were not very confident that they would be able to do an excellent job on the tasks. They expressed several reasons for this uncertainty. Students' perceptions of their English skills seem to be the most influential one. This is because some students believed that their English was not as good as their friends' and that their friends' videos would be better. One participant said:

> *Well. It is because I am not at all good in English and when I was creating my videos, I always thought my friends who were better in English would do better, so I didn't feel confident that I would do it as well as they would.*
>
> [Interview, Participant #9]

DISCUSSION

Overall, the students reported positive attitudes to the integration of DST into a language course. They believed that DST was beneficial for their language learning and perceived it to be motivational. Also, the DST tasks were reported to be interesting and engaging. Additionally, the students saw the importance of the tasks and placed high value on them.

Regarding students' attitudes towards their language improvement, the development of vocabulary appears to be the effect most frequently reported. This can be attributed to the design of the project, the movie-making tool and the nature of the DST tasks. Obviously, the fact that they were encouraged to use the vocabulary they had learned in the classroom contributed to such perceptions. Additionally, the movie-making tool "forced" the students to learn new vocabulary from the locations, movements and emotions provided in order to be able to complete the videos (see Figure 6 for an illustration and the example below).

Figure 6 Locations students have to choose when creating a video

Improvements in other skills, such as grammar, writing and reading, were also reported. The positive results here lend support to the results from previous studies that DST has a positive effect on students' vocabulary (Tsu et. al., 2006) and writing (Yang & Woo, 2012).

With regard to students' attitudes toward motivational issues, the results from three constructs are brought into the discussion: intrinsic motivation, task value and self-efficacy. To begin with, the DST tasks were perceived to be interesting, challenging, motivational and able to arouse curiosity. This implies that the tasks were enjoyable for their own sake. More interestingly, students did not see doing DST tasks as working on academic tasks; rather, they saw it as playing games. This finding is in line with previous studies on DST, regardless of the task design adopted (Robin, 2008; Hafner & Miller, 2011). Together with their view that the DST project made them like English more, this would potentially embolden students to become intrinsically motivated, which is more desirable (Stripek, 1993) and believed to bring more success (Deci & Ryan, 1985) in language learning.

In terms of task value, the high value placed on the tasks by the students can be attributed to the fact that the skills they practised in doing the tasks are applicable not only to other subjects, but also to other meaningful aspects of their lives. It is also because they perceived that the tasks are useful for their English learning.

Regarding self-efficacy, the confidence in their ability to complete the tasks might be the result of the user-friendliness of the movie-making tool and the online resources provided. That is, the program did not require any particular technical skills to use and the video tutorials were sufficient to build their confidence. It may also be the case that they have been brought up in the digital era and so using a computer is a part of their everyday lives, thereby being confident in doing technology-related tasks. However, their perceived English proficiency appeared to be a factor diminishing their confidence in the quality of their work. This is mainly because, at university, students are not allocated to classes based on their proficiency, but instead according to their major subject. Therefore, this creates diversity in the proficiency level within a classroom (see Table 1.2).

On a theoretical level, the high value the students placed on the DST tasks and their confidence in completing the tasks may result in enhanced motivation (Pintrich & Schunk, 1996). Also, it may lead to academic achievement as proposed by a number of researchers (Wigfield, 1994; Wigfield & Eccles, 2000). On an empirical level, the results resonate with, though potentially rather than empirically, the study by Yang and Woo (2012) that DST has a positive effect on learning motivation in terms of self-efficacy and task value. Together, students' positive attitudes toward the DST project, related to intrinsic motivation, task value and self-efficacy, may work together in the formation of learning motivation later on.

LIMITATIONS AND SUGGESTIONS

Although the findings of this study have shed light on the potential of the affordances and challenges of using DST to foster learner autonomy, the findings may not be generalisable as this is a small-scale study. A larger-scale study is definitely recommended. However, I am reluctant to suggest a very large-scale study, involving several classrooms or courses at a time for example, because I think this kind of technological implementation works best at the classroom level. Therefore, I would recommend keeping it to the classroom level but with a larger sample.

This study was carried out for only four weeks; therefore, a study conducted in a longitudinal manner (one semester) is recommended. In terms of the potential for language learning and motivation, this study is limited to the level of students' attitudes; therefore, the real effectiveness of DST in language learning and motivation should be investigated. Quasi-experimental studies and/or longitudinal studies using pre-/post-tests should be conducted to examine the real contributions of DST in language learning settings so that teachers can have a clearer picture of the effectiveness of DST when considering implementing it in their own classrooms.

PEDAGOGICAL IMPLICATIONS

The findings offer language teachers and educators a useful tool for language learning, particularly for vocabulary and grammar. Yet DST, as a concept, is flexible in itself and can be used to facilitate other language skills such as speaking (if they adopt a traditional form of DST in which students have to record their voice) and listening. It therefore depends on how a teacher uses the affordances of DST and designs activities to serve their pedagogical purposes. Also, the findings give options to teachers who encounter issues of lack of student motivation in their teaching.

However, technology in and of itself does not constitute methodology; therefore, if teachers are interested in using DST in their classes, they need to make sure that it is well-designed and based on an appropriate theoretical framework and they need to make thorough contributions to it. This applies to the use of other types of technology as well.

CONCLUSION

The findings from this study reveal that students had a positive attitude toward the integration of a DST project into a language course. The DST project was perceived to be beneficial to their language learning, especially for learning vocabulary. Also, the DST tasks were perceived to be interesting and enjoyable for their own sake. In addition, students placed a high value on the DST tasks and were confident in their ability to complete them. All of these indicate that the DST projects have the potential to enhance students' motivation later on. And last, the students thought that the DST tasks were highly engaging. This finding counters the argument claiming that motivation and engagement do not occur together (Russell et. al., 2005; Marciano, 2009), because if a task is well-designed and used with optimal mechanisms, motivation and engagement can occur together.

As a case study in one classroom in one institution, this is essentially an exploratory study. I have no intention to suggest that the results presented here are uniform as the way that different students in different contexts approach DST varies. Instead, my intention is to underline the design of the project here, in order to make suggestions for future practice. Last but not least, the affordances of different types of technology need to be taken into account when making decisions on using them to enhance students' language learning and motivation so that they can learn effectively with the technology at hand.

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