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THE COMPLEXITIES OF DIGITAL STORYTELLING: FACTORS AFFECTING PERFORMANCE, PRODUCTION, AND PROJECT COMPLETION

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ABSTRACT

Digital storytelling projects provide a variety of opportunities for learning in the language classroom, but along with these opportunities come a number of challenges for both pedagogy and technology. This presentation describes an ongoing multi-method study into factors involved in task-based learning using digital storytelling. Using intact classes over a three-month period, participants were required to create a series of digital stories and present them to their peers. The stories were quantitatively analyzed using the factors of module (topic), time, medium, and reported technological proficiency. Student attitudes towards the tasks were gauged using and a questionnaire, based on the theoretical framework of Self-determination Theory (Deci & Ryan, 1985), which measured perceived task cost and value, engagement with the task, and expectancy for success on future tasks. The results suggest that digital storytelling can be incorporated into EFL classes for distinct purposes: to reduce foreign language anxiety; provide greater opportunities to use English for lower proficiency learners; and to foster ICT skills, such as knowledge of computers and using software for higher proficiency students.

KEYWORDS

Digital storytelling, action research, learning management

1. INTRODUCTION

In early Computer Assisted Language Learning (CALL) programs the stimulus was in the form of text presented on a screen, and the only way in which the learner could respond was by entering an answer at the keyboard. However, more recent approaches to CALL emphasize more learner-centered, explorative approaches, in contrast to teacher-centered drill-based approaches (Davies, 2000). For example, Ho and Savignon (2013) expound on the advantages of employing face-to-face peer reviewing (FFPR) and computer-mediated peer review (CMPR) for academic writing contexts in CALL settings. Another example of recent approaches to CALL is digital storytelling.

The Center for Digital Storytelling defines a digital story as a short story containing digital images, text, recorded audio narration, and/or music. It allows computer users to be creative storytellers through the process of selecting a suitable topic, writing a script, and developing interesting stories based either on their own experience or the course subject matter. By telling stories with the aid of digital media, students are engaged in learner-centered, authentic tasks. In a digital storytelling project, creating an end product (the digital story) is clearly goal-oriented, and the process itself helps students develop a deeper connection with the subject matter. Robin (2008) suggests that digital storytelling projects provide a strong foundation in many different types of literacy such as digital literacy, global literacy, technology literacy and information literacy. Indeed, the digital storytelling process is an example of a 'multiliteracy' approach. Due to the simultaneous use of a foreign language and technology, students not only are asked to cope with an increasingly globalized society, communicating with other cultures through language, but also are asked to develop communicative competence through new communication technologies.

Digital storytelling (DST) has the potential to help students gain "21st century literacy skills", providing a unique opportunity to acquire new media literacy and IT skills, as well as the standard four skills covered in most language classes. Morgan (2014) reported that digital story projects were beneficial for motivating and helping students improve their writing and reading, because the projects encouraged students to think about

how their stories were created. In addition, Kim (2014) suggested that participants in her study were able to develop their oral proficiency. Yang and Wu (2012) have suggested that DST has an effect on both receptive and productive language competences, serving as a transformative technology-supported pedagogy that combines both English language learning in a constructivist/collaborative context, and self-production of authentic materials.

Regarding the educational framework of our study, English as a foreign language (EFL) in Japan, a number of studies have been implemented. Susono (2011) instigated a digital storytelling project at a junior high school for second grade students, finding benefits of the project included a greater understanding of their peers, as well as significant 'knowledge reformation' while writing and rewriting the scripts. Enokida (2015) had students make digital stories about books they had read in an extensive reading assignment and suggested that the stories had a great effect on students' understanding of the content and promoted awareness of story structure. Ono (2014) found that higher proficiency students in his study seemed to feel that their Project Based Learning (PBL) skills, such as computer use, data collection, problem solving, discussion and presentation in the field of foreign language teaching, greatly improved after the project, while the lower proficiency students in the study felt that the main benefit of the project was a reduction in their foreign language anxiety. With the results of these studies in mind, we set out to explore the design and use of DST projects in a content-based framework at the university level.

2. THE PRESENT STUDY

The present research is concerned with the design and implementation of presentation projects for EFL university students majoring in cultural studies. The students were expected to create digital stories/presentations on topics covered in the course texts, and to present them to the class for discussion. It was felt that the digital story projects would allow students to deeply explore the cultural content presented in the course while using English in a focused and purposeful way. The story projects reflect the Content-Based Instruction (CBI) goals of helping students connect meaningful content with language instruction, in an effort to improve their cultural knowledge and language and literacy skills.

Project-based learning tends to be more complicated in nature than more directed forms of task-based learning. Digital storytelling, when used in a project-based learning approach, is an inherently messy process, with the product not always in sync with the original task (Thorne & Black, 2007). Due to the number of steps involved in creating a digital story, and the technical skills necessary, task design is of utmost importance. The researchers are interested in what factors contribute to a successful digital story experience for students. The present research explores the question of task design in digital storytelling, taking into account the context of the task, and the four elements of good task design—purpose, content, activity, and completion— and how they were perceived by the participants. Since task complexity is an important factor to consider in design, both the complexity of the task (in terms of familiarity with the topic and cognitive demands of the task) and required technological proficiency are considered. It is hypothesized that more unfamiliar topics will lead to perceptions of higher cost and less engagement on the part of the participants (Hypothesis 1), and that experience and familiarity with technology needed for task completion will lead to perceptions of those tasks as having greater value and a higher expectancy for success (Hypothesis 2). Also to be considered are the limitations of both technology and technological proficiency when designing a task, since previous research in this area has shown that perceived proficiency has an impact on both product and process (Gobel & Kano, 2013; 2014). To this end, the following research questions were formulated:

1. How do students perceive their technological proficiency?
2. To what extent does project design affect perceived complexity of each project?
3. What were student attitudes towards the individual tasks?

2.1 Methods and Materials

The participants were 18 third-year non-English major university students, studying in the Faculty of Cultural Studies. Their English proficiency, as measured by the TOEFL ITP ranged from (437-515). The participants were enrolled in a compulsory oral skills presentation class which met for 90 minutes a week. All participants

had completed a required information technology course in the first year of their studies at university, so all were familiar with using PowerPoint and the school LMS (Moodle).

The course goals centered around developing presentation skills, but as a content-based course the subjects covered in the text and readings focused on the following topics: problems in urban areas; how products are marketed; describing a process, such as how to perform Japanese tea ceremony; comparing cultural differences. Each topic was covered for three weeks, with outside readings provided to supplement the textbook. While studying the text and topic in class, students were asked to prepare a presentation on the topic. This preparation included choosing a topic based on required readings, writing the story, choosing the media, and creating the final product. Students were given 20-30 minutes each week to work with groups to finalize and present their ideas. Table 1 summarizes the topic, style, and requirements of the projects.

Table 1. Project topic, style, and requirements

project	topic	presentation style	requirements
1	city issues	group - in class	visual media, voice recording
2	product critique	group - in class	visual media, voice recording, auto play
3	how to …	individual - in class	visual media, project sent to instructor as file
4	cultural comparison	individual - watch and respond on LMS	visual media, voice recording, auto play, upload to LMS

At the end of each topic students were asked to present a 1-2 minute digital story on their topic, meant to stimulate a final discussion on the topic. As a result, the projects themselves had a focus on meaning and a non-linguistic outcome. The projects themselves were manipulated to emphasize either familiarity with the topic (topics 1 and 3) or technological and process demands (group work versus individual work, and audio recording versus live presentation, and online submission and online feedback).

At the end of each project, students were given a questionnaire (cf. Appendix). The questionnaire was created with 20 Likert scale items meant to measure perceptions of project design and difficulty (5 questions covering perceived purpose of the project, difficulty of content and project), self-efficacy (6 questions covering perceived performance and perceived technological proficiency), and perceived cost and value of each project (9 questions dealing with actual and expected difficulty of the project, amount of time and effort involved, interest in the project, and expectation for success in future tasks). It was hypothesized that unfamiliar topics would lead to higher cost and less engagement with the project, and that familiarity with technology would lead to greater value and higher expectancy for success in future tasks (Gobel & Kano, 2013; 2014).

3. RESULTS

The projects were assessed based on the rating by the instructor and the impressions of the participants using questionnaires. Instructor ratings for the four projects resulted in the following: Topic 1 (city problems) showed a better use of media and a better presentation of material. There were problems with recording sound; Topic 2 (marketing tricks) displayed less coherence in all stories, with less critical thinking involved, and problems with sound and automatic play functions; Topic 3 (how to) showed a better use of pictures and visual media, clearer story structure, and better presentation of material; Topic 4 (cultural comparison) showed coherent presentations, less critical thinking (a focus on impact rather than logical thought), and problems with sound and automatic play functions and uploading to Moodle and completing forum posts.

After each project, the same questionnaire was administered to elicit participant impressions in four different aspects of the projects: self-efficacy, project design, cost/value of the projects, and presentation and requirement preference. Here are some interesting points we found from the questionnaire, matched with our research questions.

Research Question 1: How do students perceive their technological proficiency?

Student use of computers was rather limited (4 hours per week in average), mostly for school work and searching for information. They reported a mild dissatisfaction with their PC and PowerPoint proficiency, which stayed stable over the projects.

Research Question 2: To what extent does project design affect perceived complexity of each project?

Students were generally satisfied with the projects and what they learned from them, and they felt the projects' purpose became clearer over time. The group work was viewed as being more difficult than the individual work. They found that the presentation demands and use of computer and PowerPoint became more difficult over time. The recording was the most difficult part of the project for the students, especially in the last project.

Research Question 3: What were student attitudes towards the individual tasks?

Student actual and expected difficulties were similar, and the time and effort they put into the projects remained the same, even though they felt the difficulty level of the projects rose over time. As a result, their evaluation of their final product decreased over time, and expectation for success in future projects also slightly decreased.

On the whole, they preferred individual work to group work, and live narration to recording. Manual/auto play preference changed over time. They preferred Moodle upload over class presentation, responding that they didn't have difficulty viewing assignments and commenting on the LMS forum.

4. CONCLUSION

In conclusion, the results show that Hypothesis 1 (unfamiliar topic/cost and engagement) was not supported, while Hypothesis 2 (familiarity with technology/value and expectancy for success) was found to be inconclusive. The results suggest that the more familiar/personal topics resulted in a marginally better product (from the instructor's viewpoint). Students' view of their own skills remained stable throughout the entire study, despite the fact that project demands increased over time. Finally, it seemed that the participants had very little motivation to learn new aspects of technology (auto play function, recoding their voice, Moodle forum). In other words, although the DST projects offered opportunities to learn new skills and master old ones, the students saw the completion of the project (the product) as more important than the creation of the story (the process).

This suggests that, at least with these participants, more support regarding the technical aspects of the DST projects is warranted. Although the students were familiar with most aspects of PowerPoint and the Moodle LMS, it might have been beneficial to review technology and skills throughout the projects, in an effort to build up students' technology skills. Although support was provided in the form of video tutorials and links to 'how to' web pages, it seems that students were not that interested in accessing them or improving their skills.

As with any small-scale intact study, the limitations of sample size and inability to perform meaningful statistical analysis must be noted. With such a small sample size it is difficult to generalize the results in any meaningful way, and he lack of statistical power in the results creates a situation where the findings must be viewed with caution. A future study with a larger population, allowing statistical analysis, should provide more robust results that will add to the body of knowledge in this area. More importantly, the study has suggested a number of areas for future research. Among them are the efficacy of interactive presentations, projects using a variety of formats (movie, chat, Google Maps, etc.), projects using mobile devices, online peer feedback at each step, and the effects of recursive training sessions (teacher or peer-led).

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APPENDIX

Digital Story Questionnaire Items (most set on a four-point Likert scale)

Task design questions (don't agree → agree)

The purpose of the group presentation clear to me.

I learned things from the project.

The topic made the task easy.

The task steps were easy to understand

Rank the difficulty of each part of the task

- Working with others
- Difficulty of the topic
- Finding information for the presentation
- Writing or creating the presentation
- Using computers
- Using powerpoint or prezi
- Recording the presentation
- Finding digital images

Self-efficacy questions (don't agree → agree)

I was able to complete the digital story satisfactorily.

I am proficient at using powerpoint.

I am proficient at using a computer.

I have a computer at home.

How many hours a week do you use a computer?

What do you mainly use it for?

Cost/value questions (not at all/none → very/a lot)

Before starting how difficult did you think the task would be?

How difficult was the task to actually complete?

Did the task take a lot of time?

Did the task take a lot of effort?

Was the task interesting?

Was working in groups interesting?

Did you learn a lot from the task?

Was this task a good way to study?

Do you think you did well on the task?

Do you think you will do well on future tasks?