

Challenges and learning opportunities: Pre-service teachers' perceptions of integrating a digital story project into a literacy course

Mouna Abou Assali

Mohammed V University, Abu Dhabi, United Arab Emirates
mouna.abouassali@um5a.ac.ae

Abstract: Technology is not only seen as a key component in supporting education but also plays a major role in developing the 21st century skills such as problem solving and team work (Sweeney-Burt, 2014 ; Dede, 2009; ISTE, 2015). Consequently, teachers need to ensure that their students are exposed to technology in order to prepare them for the 21st century society that is increasingly heavily based on technology and knowledge (Ahmed, 2012; UNESCO, 2014). This demand has put pressure on teacher training programs to support and train pre-service as well as in-service teachers to be digitally effective practitioners and transform their classrooms into a more digital-oriented environment. Efe (2011) observed that teacher training programs play a fundamental role in the development of future teachers' knowledge and skills to effectively integrate technology into educational contexts. In addition, teachers need to develop awareness of technology, its value and the educational purposes it serves. In other words, teachers are expected to be emotionally, cognitively and educationally well-prepared to adopt the use of the digital tools into their teaching (Kaufman, 2018; Singh & Chan, 2014; Copriady, 2014). Beside the development of digital competencies, technology integration in teaching can potentially enhance students' learning experience. It is worth-mentioning within this context that despite the positive outcomes, the integration of technology in teaching can be challenging (Hew & Brush 2007). In line with this emphasis on the integration of digital technology in educational contexts, a digital story project was introduced into a Language Literacy course taught at a teacher training institution in the United Arab Emirates (UAE). This paper presents the preliminary results of the study that sought to investigate pre-service teachers' perceptions of the challenges and learning opportunities related to the integration of the digital story design project into the English Literacy course. The preliminary results are based on a survey delivered to undergraduate students enrolled in the Bachelor of Education program offered at a Higher Education institution. The overall results show positive outcomes in relation to the learning opportunities experienced at the integration stage of the digital story project. Students did not seem to have faced major challenges when developing their digital stories. One of the limitations of this research study, however, is the method of data collection. Quantitative analysis of data may highlight the most prominent findings, but for better understanding of the learning opportunities and challenges encountered by the pre-service teachers during the designing stage of the digital story, future work will involve qualitative methods for an in-depth analysis of the focus group and individual interviews.

Keywords: technology, teacher training, digital story, skills, pre-service teachers.

Introduction

Technology is not only seen as a key component in supporting education but also plays a major role in developing the 21st century skills such as problem solving and team work (Sweeney-Burt, 2014 [1]; Dede, 2009 [2]; ISTE, 2015) [3]. Consequently, teachers need to ensure that their students are exposed to technology in order to prepare them for the 21st century society that is increasingly heavily based on technology and knowledge (Ahmed, 2012 [4]; UNESCO,

2014) [5]. This demand has put pressure on teacher training programs to support and train pre-service as well as in-service teachers to be digitally effective practitioners and transform their classrooms into a more digital-oriented environment.

Efe (2011) [6] observed that teacher training programs play a fundamental role in the development of future teachers' knowledge and skills to effectively integrate technology into educational contexts. In addition, teachers need to develop awareness of technology, its value and the educational purposes it serves. In other words, teachers are expected to be emotionally, cognitively and educationally well-prepared to adopt the use of the digital tools into their teaching (Kaufman, 2018 [7]; Singh & Chan, 2014 [8]; Copriady, 2014 [9]). In addition to the development of digital competencies, technology integration in teaching can potentially enhance students' learning experience. Despite the positive outcomes, the integration of technology in teaching can be challenging (Hew & Brush 2007) [10].

In line with the emphasis on the integration of digital technology in educational contexts, we introduced a digital story project into a Language Literacy course taught at a teacher training institution in the United Arab Emirates. The present study explored pre-service teachers' perceptions of the challenges and learning opportunities provided by the integration of the digital story project. The study adopted multiple methods of data collection consisting of a questionnaire, the focus group and in-depth interviews. This paper presents an overview of the study and preliminary findings based on some of the closed-questions from the questionnaire. The study sought to answer the following two research questions:

1. What are the pre-service teachers' perceptions of the learning opportunities provided by the digital story in the English literacy course?
2. What are the pre-service teachers' perceptions of the challenges of integrating a digital story in the English literacy course?

The study outcomes can potentially uncover challenges and learning opportunities to support the digital assessment of English literacy projects and add to the literature on teacher education.

Literature Review

Educational digital world in the 21st century has witnessed tremendous changes. The influence includes platforms that facilitate the teaching-learning process. It simply provides a variety of opportunities to connect and collaborate. It broadens the knowledge horizon, and allows for learning to happen and empowers innovation.

Preparing pre-service teachers for the market (i.e. 21st century schools) and developing their technical skills is crucial. In other words, digital literacy proficiency has become an essential life skill that teachers need to enhance and implement in their educational environment.

In fact, digital literacy requires not only critical thinking skills, but also an awareness of the necessary skills and IT knowledge expected by the practitioner. This highly demanded need emerges from the fact that “the majority of today’s college students have grown up in the digital age, and have therefore, been influenced by the digital technology” (Strawser, 2017, p.47) [11]. Not to mention that college students, as Garcia and Sanchez (2017) [12] posit, who are prepared to be teachers, would be in ultimate need to cultivate their digital literacy needs and skills so as to be able to teach the tech-savvy consumers (i.e. students).

Within this context, Tomlison (2014) [13] states that for teachers to facilitate children’s learning, there is the need to be able to use and evaluate digital integration purposefully. In

other words, digital skills required by 21st century teachers should have meaning, purpose and utility in the classroom.

However, integrating technology into the educational environment cannot go without probable challenges. The existence of barriers to the successful integration of technology into the classroom are sometimes factors external to teachers who aspire to implement technology. External barriers may include lack of training, resources or institution support. Or, in some cases, the barriers may be attributed to internal factors like teachers' proficiency, attitudes or beliefs. It is believed that training students, or the pre-service teachers, on the options different technologies might provide to them would result in optimizing the experiences of both; the teachers and the students. Helping student teachers know and enhance their technological skills and capacities show positive results as Hofer and Grandgenett (2012) [14] claim.

The Study

The study was conducted at our higher education teacher training institution in the United Arab Emirates (UAE) during semester 2 of the 2013-2014 academic year. It was approved by the institution research committee. The institution offers a four year undergraduate Bachelor of Education (BEd). The program prepares Emirati female and male pre-service teachers to work in the UAE primary schools, the major in English, Science and Math. A range of subjects content and pedagogical as well as educational technology courses are taught across the program. The institution also offers a Master Degree in Education and Post-Graduate Diploma in Education (PDGE). The medium of instruction is English.

Fifty one undergraduate pre-service teachers were enrolled in the Language Literacy course. It was taught in Year 3 within the Bachelor of Education program. These students were assigned to three sections. All students were invited to participate in the study. Forty seven gave their consents to participate. The sample consisted of 45 females and 2 male students. The course was chosen for the study because the first author designed and taught the three sections.

The Language Literacy course focused on the child's emotional, linguistic, physical, cognitive and social development. It emphasized that young children need opportunities to enhance and explore their developmental skills at all levels. In addition, the required textbook provided examples of hands-on activities and proposed that appropriate digital games and activities would help support the growth of those skills and allow for more classroom engagement (Tompkins, 2014 [15]; Adams, 2011 [16]; Barron et al., 2011 [17]). To this end, both print and interactive digital forms of teaching were emphasized according to the grade and age level of children. For the digital story project, student were required to use their digital literacy skills to create a digital story based on a chosen fiction and non-fiction books, and include a series of rich-pictured interactive activities. All the activities should be paired with appropriate grade and level literacy educational games. All of the activities should be based on a disciplinary approach to teaching literacy where trainees design linguistically and subject-content oriented appropriate activities (e.g. Math and Science) which demonstrate understanding of relevant themes and vice versa. The course built on students' prior knowledge of digital literacy courses taught to them within the program.

Methods of Data Collection

The study used different data sources consisting of an anonymous questionnaire, focus groups, and in-depth individual semi-structured interviews to enable triangulation. We developed the

questionnaire which sought information on 1) background information, 2) learning opportunities, 3) challenges, and 4) recommendations. The questionnaire included two scales. The first consisted of beginner (1), competent (2), expert (3) and (4) never used; and the other included strongly agree (1) to strongly disagree (5). It also included open ended questions. We piloted the questionnaire with three students outside the study and two experts in the field. Based on the feedback, we changed the wording of a few questions. The questionnaire aimed at investigating pre-service teachers' perceptions of the challenges, and learning opportunities when integrating technology into the Language Literacy course. The questionnaire was administered in person to students. A total of 47 students completed and returned the questionnaire.

We conducted three focus group interviews consisting of five students. The topics covered in the focus were similar to those covered in the questionnaire. It aimed to obtain a collective understanding of the broader shared experience among participants. It allowed views and discussions which brought about a clearer vision of the participants' prevailing situations at a certain stage of their implementation of the digital project experience. We visited the sections and asked for volunteers for the focus group. The interview was conducted face to face and audio taped. It lasted approximately 40 minutes. We also invited participants from the focus group to take part in an in-depth interview. Two students gave their consent to participate. The individual interview explored in-depth the same questions from the focus group and questionnaire. Both the focus group and individual interview questions were reviewed by an expert in the field.

Data Analysis

As mentioned earlier, this paper presents preliminary data based on some of the closed questions from the questionnaire only. Analysis started with checking the questionnaire for completion. Guided by Cohen, Manion and Morrison (2011) [18], analysis of the closed questions from the questionnaire consisted of assigning a code to each variable (e.g. yes: 1; no: 2). Next an Excel sheet was used to manage the data. A column was created with students' name and another column for each question where the coded data were added. Percentages were then calculated. Mean calculation was also carried out for the scales.

Preliminary Findings

Table 1 shows pre-service teachers' perceptions of learning opportunities provided by the digital story project. Overall, the results show positive perceptions in relation to the learning statements shown in Table 1. Pre-service teachers seemed to feel comfortable at the creation stage of their digital stories and the methods of introducing the digital activities to the targeted children in their classrooms. Likewise, the selection of the relevant readings and the planning of appropriate activities linked with math and science lessons did not seem to create considerable challenge. In other words, there is a slight tendency to strong agreement for many of the statements. For example, there is a slight tendency to strongly agree ($M= 1.23$) that the digital story makes reading stories more enjoyable. There is also a slight tendency to strong agreement that the digital story helped students to develop technological skills. Table 1 suggests that the integration of the digital story into the Literacy course worked as a catalyst to help students to develop their knowledge and skills.

Table1. Pre-service teachers' perceptions of learning opportunities

By creating my own digital story I learned how to: (Scale: 1 -Strongly Agree to 5 - Strongly Disagree)	Mean (N=47)
Relate theoretical knowledge to the practical aspect of teaching*	1.73
Create digital stories appropriate for young learners	1.45
Make reading stories more enjoyable to children	1.23
Allow for more interaction in the classroom	1.54
Integrate science and math into a reading class**	1.71
Plan for interactive activities	1.38
Introduce new content easily	1.72
Facilitate students' learning of complex ideas	1.82
Develop my technology skills	1.41
Integrate technology into the teaching of literacy skills**	1.49
Improve my presentation skills	1.45
Collaborate with peers	1.46
Collaborate with teachers	1.53

*Two students did not answer the question

**One student did not answer the question

Table 2: Pre-service teachers' perceptions of the challenges

Challenges (Scale: 1 Strongly Agree to 5 Strongly Disagree)	Mean (N=47)
I was able to manage my time during the preparation stage	2.34
I was able to choose relevant fiction and non-fiction texts	1.91
I was able to decide on the appropriate technology for the activities	2.02
I was able to use technology to create activities*	1.73
I was able to decide on the appropriate content for each technology	1.99
I was able to access the technology I needed	2.32
I was able to find the technical support I needed	2.09
I felt I did not need any help in using technology	3.29

*One student did not answer the question

Table 2 displays the results of pre-service teachers' perceptions of the challenges faced when creating the digital story. Overall, students did not seem to have encountered major challenges during the development of the digital story. However, there is a slight tendency to disagreement for the statement that students did not feel the need for help in using technology. Most of the students seemed to have designed their digital stories with appropriate knowledge of content,

technology and presentation skills. The support they received from their peers and teachers seemed to be fairly acceptable compared to the time allotted to the project and efforts exerted. Preliminary results show positive outcomes in relation to the learning opportunities provided by the integration of the digital story into the literacy course. Added to that, students did not seem to have faced major challenges when developing their stories.

Limitations and Future Work

One of the limitations of this research study is the method of data collection. Quantitative analysis of data may highlight the most prominent findings, but for more information about the integration of the digital story project, future work will involve qualitative methods for an in-depth analysis of the focus group and individual interviews to understand better the learning opportunities and challenges encountered by the pre-service teachers during the designing stage of the digital story. Moreover, analyzing data would also focus on the digital literacy and collaboration skills student teachers need to utilize or improve in similar future projects.

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