

**Using Educational Digital Storytelling to Enhance Multilingual Students' Writing Skills
in Higher Education**

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Abstract

Educational Digital Storytelling (EDS) is a powerful technology-enhanced learning approach that enables learners to develop 21st century skills. Students often complain about their digital illiteracy, academic writing challenges, and lack of interaction in classes. In the current case study, 50 multilingual and multicultural ESL student-teachers were involved in the creation of digital stories in an undergraduate module. Students used Canva to create their own digital stories which included text, images, videos, podcasts, and infographics. The overall aim was to improve their academic performance and motivation towards learning, and explore their attitudes towards this new dynamic learning-oriented instructional strategy. The current semi-experimental study tried to challenge monolingual bias and promote a more integrated and inclusive approach to learning as both efficient and desirable in preparing university students for constructive involvement with various cultural perspectives promoting the creation of global networks. Findings from both quantitative (paired and independent samples t-tests of test scores) and qualitative (anonymous feedback, lecturer observations and focus group discussions) data analyses indicated that learners improved their writing performance, critical thinking skills, self-confidence, and intercultural awareness. Students stated that they felt proud of their final products (digital stories) and that the EDS intervention was rewarding. However, some non-traditional students reported facing challenges with the use of technology. Learners expressed their wish to experiment more with digital stories and use them in other modules. Implications for teaching and learning practices in the Higher Education academic environment and suggestions for the successful implementation of EDS at the tertiary level are provided.

Keywords: educational digital storytelling, digital skills, writing performance, motivation, multilingualism, undergraduate students

Educational Digital Storytelling (EDS) is a pioneering learning-oriented technology-enhanced approach which allows students to develop a wide range of academic and professional skills (Dewi et al., 2019; Hava, 2021; Robin, 2008). Lambert (2012) describes a digital story (DS) as a narrative blending visual and aural features for telling a personal story. Various studies have indicated that EDS provides numerous benefits to learners. Selective examples include: (a) affective—enhancing motivation (Hung et al., 2012), (b) cognitive—developing critical thinking skills (Yang & Wu, 2012), (c) academic—developing writing skills (Yildiz Durak, 2018), (d) technological—enhancing IT skills (Chan et al., 2017), and (e) social—promoting interaction (Lin et al., 2013). Additionally, Sukovic (2014) indicated that EDS provided an increased sense of achievement to learners while Hung et al. (2012) underlined the development of student confidence. EDS also supported a conducive context for the enhancement of language skills (e.g., listening and speaking) and mastery of story structure and multimodal expression (Liu et al., 2018). Finally, EDS was reported to increase other awareness as creating, crafting, and exchanging stories are part of people's everyday life and a basic element of social group interaction (Carmona & Luschen, 2014).

This article examines the use of EDS in a Higher Education Institution (HEI) in Cyprus. The overall aim was to improve multilingual and multicultural undergraduate students' writing skills and motivation towards learning. International ESL student-teachers were asked to tell their own stories using Canva and a variety of resources, exchange ideas, and provide feedback and suggestions for improvement to each other using the target language (English) and their first language (L1). This was the first time these undergraduate students were asked to engage in this creative activity.

This intervention enabled undergraduate student-teachers to craft and share digital stories (DS) with the aim of stimulating creative and thoughtful philosophies of teaching to develop specific skills. The research considered that students might enjoy using media to describe their teaching aspirations in a narrative format. Robin (2008) proposed that EDS could be used to synthesize learners' knowledge and findings in a more imaginative, meaningful, and interesting way. While reflecting on their current teaching principles and practices, these learners were encouraged to refine their teaching philosophy so as to better detect and manage unpredicted challenges. IT use was necessary during the development of their DS. This reflected the current need for educators to use technology in their sessions due to crises such as the COVID-19 pandemic (Ahmed & Opoku, 2022). As soon as the pandemic started, educational institutions had to resort to blended and online learning worldwide (Choi et al., 2021). Consequently, the experience and the findings of the current study should encourage student-teachers to use EDS in their classrooms in the future. Scant research has investigated learner perceptions of EDS use in a Higher Education (HE) instructional context including the use of EDS to develop undergraduate student writing skills (Eissa, 2019). In the current research study, learner perceptions about EDS were explored as they participated in an EDS intervention. The aim was to examine and understand student reflections regarding EDS use for educational purposes. The research questions for the study were:

- What was the impact of EDS on undergraduate multilingual student-teacher writing performance?
- What were undergraduate multilingual student-teacher perceptions of the impact of EDS on their motivation and academic achievement?

Literature Review

EDS allows multilingual and multicultural learners to explore the possibility of using multimodality to create and share their stories with their peers and even with a wider audience (Lambert, 2012; Liontas & Mannion, 2021). Students can combine their written texts with pictures and music or video to participate in new forms of online literacy, become more creative, and understand how these forms may relate to print literacy they use in their everyday lives as students. However, many lecturers avoid using EDS in their classrooms due to the amount of time students need to complete relevant tasks, the demand on IT equipment and expertise, and doubts regarding value as EDS does not conform to the rules of traditional writing assignments (Belcher, 2017).

Nevertheless, such new approaches to writing allow learners to explore basic academic writing concepts from a different perspective (Bloch, 2018). EDS encourages the use of a mixture of different modes of print, visual, and aural expressions which allow students to be more creative and engage more deeply in their own learning process. Students can therefore make choices and transform staid assignments into meaningful exploration for alternative expressions. A DS allows learners to present their own ideas by telling their own story, for example, relating it to a significant period in their lives. They can also record parts of their stories using their own voice or add voices or videos of other people. They can include images, photos, infographics, or even music. These multimodal forms have become very prominent as students can tell their own story in a unique way. DS also became more important when used outside the teaching sessions for professional reasons, e.g., to showcase their creative talents to potential employers (Yancey, 2004).

Engaging learners in comprehending genre (stories) across both print and digital modalities potentially allows learners to become more active members of their academic and professional groups as well as the wider digital world. Additionally, the implementation of EDS may facilitate discussions on language and content in the writing classroom as students may find the creation of DS preferable to writing an assignment. Students can also use their own native language, what Wei (2018) refers to as “translanguaging” – a practice used to create intercultural narratives and improve multi-cultural awareness promoting a “circle of digital storytelling” (Pahl & Rowsell, 2019, p. 12). Unfortunately, opportunities for learners to engage in activities which involve the utilization of more than one language are infrequent in HEIs in Cyprus and other European countries.

Silvers and Shorey (2012) discussed learner identities and the significance of new literacies allowing students to become socially responsible, critically literate, as well as genuinely involved in the learning process. Barrett (2019) claimed that EDS combines four student-centered learning techniques: learner engagement, reflection for enhanced learning, project-based learning, and the successful blending of technology with instruction. McLellan (2008) claimed that EDS facilitates training in creativity, complex problem solving, cooperation, and autonomy. EDS may also promote reflection and collaboration (Jamissen et al., 2017). Other benefits include flexible pacing, increased concentration, imagination, extended reach, motivation, and cooperation (Robin, 2016). Some researchers also claimed that users’ creation of a personal and academic identity, the development of skills such as digital searching and writing literacy, and its interdisciplinary and participatory nature, were advantages for engaging students in this innovative approach (Chiang, 2020; Özüdoğru & Çakir, 2020).

Taking into consideration increased digitization of education due to COVID-19 (Díez Gutiérrez & Gajardo Espinoza, 2020; Wang et al., 2020), there is an increasing need to promote social justice and support all students, irrespective of their background, especially in providing training and technical support (Choi et al., 2020; Portillo et al., 2020). Heidari et al. (2021) highlighted the significance of digital informal learning for students' academic development. The current pandemic forced HEIs to prioritize digital technologies (Murphy, 2020) although these presented a number of challenges to both students and academics (Toquero, 2020). To ensure students' academic engagement, HEIs needed to develop students' competencies (Villela et al., 2020) through involvement in innovative learning methods such as EDS (Wu & Chen, 2020).

Although some studies have explored EDS in primary (Fokides, 2016; Liu et al., 2018) and secondary education (Damavandi et al., 2018), few studies have investigated EDS in foreign/second language education (Eissa, 2019). Moreover, limited studies have examined the impact of EDS on learner writing skills (Balaman, 2018) or motivation (Hava, 2019) in Higher Education (HE). For example, Balaman (2018) explored the impact of EDS on 43 English as a Foreign Language (EFL) English-major student writing skills at the School of Foreign Languages, Cumhuriyet University for 14 weeks. Hava (2019), who examined the effects of EDS on student motivation in teacher education, reported that learners' self-reliance and personal use improved after their engagement in EDS activities. The research highlighted that EDS is an emerging approach for the enhancement of writing skills in the narrative genre, but more research needs to be conducted to explore its effectiveness when used with other literary genres in different contexts.

In this article, the challenges of using EDS to assist students developing writing skills and increasing motivation was explored. EDS was introduced in an undergraduate course at a University in Cyprus. The aim was to help learners improve essay writing skills. As some of these students seemed to struggle with academic genres, a goal of the research was to use EDS to introduce students to key concepts from a different perspective (Bloch, 2018). The following section lays out the research methods and describes the implementation in detail.

Methodology

This research employed a mixed-methods approach (Almeida, 2018), collecting both quantitative (essay scores) and qualitative (anonymous student feedback, focus group discussions, lecturer's observations) data to answer the research questions (Table 1). Paired t-tests compared students' scores in the pre- and post-tests for two modules (control and experimental). Student performance in the control versus the experimental module were also compared to examine the impact EDS had on academic achievement. Finally, thematic analysis was used to analyse data from student feedback, triangulating data with lecturer observations and comparing main themes for increased reliability and validity (Flick, 2018).

Table 1
Methodology

Mixed-methods approach	
Quantitative data	Qualitative data
Sample: 50 students	Sample: 50 students and 1 lecturer
Sources of Data:	Sources of Data:
<ol style="list-style-type: none"> 1. In-class pre- (week 1) and post-tests (week 13) 2. Two essays about students' personal teaching philosophy 	<ol style="list-style-type: none"> 1. Anonymous peer feedback via Mentimeter every 3 weeks 2. Focus group discussions every 2 weeks 3. Lecturer observations about the procedure and student responses to the implementation, every week
Method of analysis: Paired and independent sample t-tests	Method of analysis: Thematic analysis of recorded and transcribed material. Triangulation with data from observations.
Raters: Researcher and an assistant	Coders: Researcher and an assistant

Fifty EFL/ESL student-teachers (Table 2) attended two mandatory parallel modules on Lesson Planning and Classroom Management which explored basic principles and approaches of teaching and learning as part of their regular undergraduate curriculum. One module focused on productive skills (writing and speaking) and the other on receptive skills (listening and reading).

The researcher received research ethics approval for the study and students provided informed consent. The researcher maintained confidentiality of learner responses. The DS and Mentimeter feedback were not compulsory and did not count for student grades.

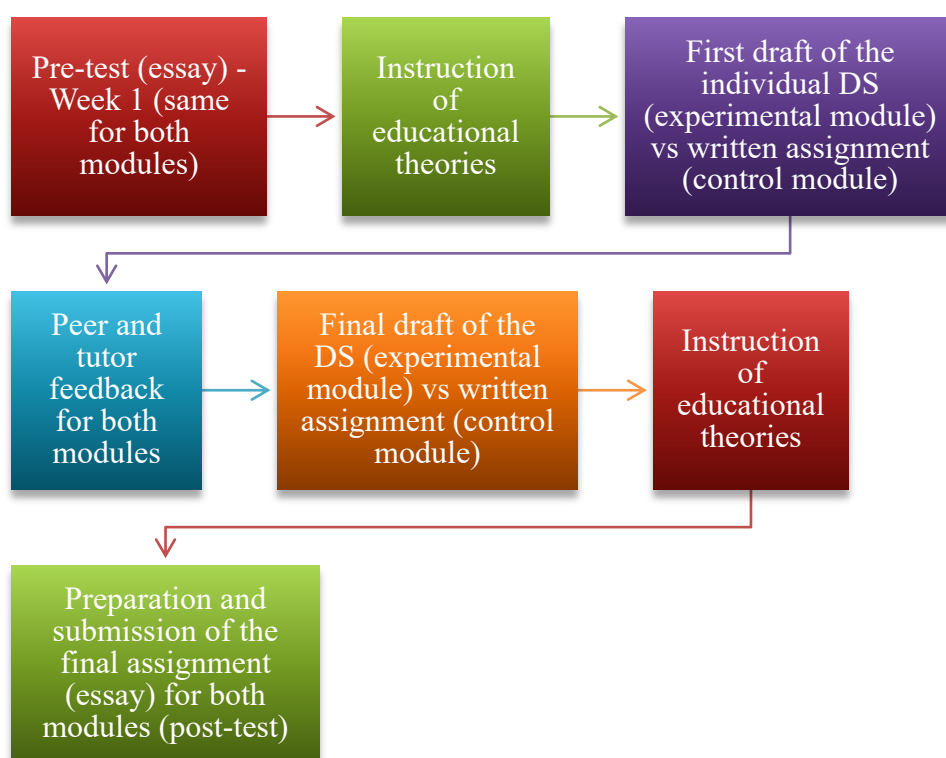
Table 2
Student Demographic Characteristics

	Students	Frequency
Gender	Male	19
	Female	31
Age	22-30	29
	30-40	21
Class rank	High-performing learners	4
	Average-performing learners	10
	Low-performing learners	36

The Implementation Process

In previous years, many students who completed the same two modules complained about their low writing performance and the repetition of monotonous essay assignments used to assess their academic performance. Therefore, DS was implemented instead of written assignments in one of the two modules and its impact explored. All students took a pre-test (Figure 1), which was an essay to assess their writing performance at the beginning of the academic semester. The essay asked them to discuss their current philosophy in teaching productive and receptive skills. The researcher implemented EDS in the module focusing on productive skills (experimental module) and used the module focusing on receptive skills as the control module (no use of EDS). The aim was to explore the impact of EDS on student writing skills and motivation. The post-tests for the experimental and control modules were the final assignments students had to submit at the end of the semester.

Figure 1
EDS Implementation Scheme



Participants in the experimental module were asked to prepare a DS by the end of the module. Students did not receive a grade for their DS, but they had to use the texts they produced in their DS for their final assignment. They were expected to work individually, then share their stories with peers and receive feedback from their lecturer and peers.

During the implementation, student communication in their L1 was promoted in class to facilitate the flow of ideas and allow a fruitful collaboration as students were asked to help and learn from each other. Learners were encouraged to create and share their multilingual DS to cross boundaries of language, culture, and the syllabus using the extended possibilities for cooperation and communication which were made possible by the digital media. They were supported to represent their multilingual repertoire positively through their work. Therefore,

multilingualism was used with the aim of developing multiliteracies and involving the many voices of the students. A significant part of this multilingual process took into consideration learner opinions and examined multiple perspectives as a predominant aspect of diversity and social inclusion. Learners were also free to share their DS on YouTube to reach a wider audience. At the beginning, students were asked to create a first draft. They received feedback from their peers and lecturer and then completed their final draft. The students in the control group went through the same procedure (including the peer and tutor feedback stage with a focus on translanguaging) but produced written essays instead of a DS.

All learners had to participate in weekly webinars (3 hours each) and a forum every week for both modules. In terms of written assignment, the lecturer requested learners to discuss their personal philosophy in teaching (to develop students' writing skills in the experimental module and their reading skills in the control module). They were also asked to prepare a DS to present their philosophy using Canva in the experimental module. They used covered theories in the module and developed digital learning skills at the same time. This allowed them to include not just text but also images, infographics, podcasts, and videos to present their stories. Their goal was to illustrate ways in which they would teach specific skills successfully and manage their classrooms effectively. Students also spent time discussing the theories in depth and writing drafts of their essay in the control module but did not prepare a DS. The lecturer and the assistant used the same assessment criteria to assess all student essays.

Students were divided into groups and participated in discussions regarding their DS (experimental module). The researcher used various questions to prompt discussion in the focus groups every 2 weeks. For example, did you find this experience (using DS) worthwhile? Why or why not? Every 3 weeks, learners also provided anonymous feedback using Mentimeter (<https://www.mentimeter.com/>), an interactive digital platform used by educators to elicit anonymous responses from students, to explore their attitudes towards the learning strategy.

The researcher kept a research diary during the implementation of this technology-enhanced approach, adding field notes every week. Students also had access to a Google document where they shared thoughts about participating in the implementation. This allowed the lecturer to intervene and provide support when needed and to learn which teaching aspects were helpful during the EDS implementation. The lecturer/researcher took an insider role and devoted time lecturing, observing, and collecting data. Finally, peer assistance and feedback was sought during the study (Morse, 2016).

Findings

Impact of EDS on Student Writing Performance

The researcher compared learner writing performance on a pre- and a post-test (Table 3). A second assessor marked 20% of the tests. Both received inter-rater training in which they marked 3 scripts (a high quality, an average, and a low quality one) utilizing a rubric provided by the University. The second rater was a colleague who taught the same module to another group of students. Inter-rater reliability was estimated by calculating the similarity percentage of 94 %. The high percentage indicated student grading was reliable (Chaturvedi & Shweta, 2015).

Table 3
Student Writing Performance

Measurement	N	M	SD	T value	Df	Sig.	Cohen's d
Pre-test same for both modules	50	25.9	17.4				
Post-test with EDS	50	52.7	14.5	17.4	49	p < .05	d = 1.67
Post-test without EDS	50	33.4	17.9	13.4			d = .42

A paired t-test was used to explore academic progress in the two modules. The test indicated a statistically significant difference between learner pre-tests (M = 25.9, SD = 17.35, n = 50) and post-tests (M = 52.72, SD = 14.53, n = 50) in terms of their writing performance ($t(49) = 17.35$, $p < .05$) for the experimental module, while there was a small difference for the control module (M=33.4, SD=17.9, n=50, $t(29)=13.4$, $p<.05$). Cohen's effect size value ($d= 1.67$) suggested a "large" effect size and high practical significance for the impact of EDS on learner writing achievement for the experimental module and a small effect size ($d=.42$) for the control module. These tests indicated the use of EDS improved writing performance in essay writing compared to the written assignments.

An independent t-test was also used to examine the differences between the post-test scores of the same group in the two modules. On average, student scores in the EDS module (M= 53.2, SD=13) were higher than those in the module without EDS (M= 33.4, SD=18). This difference was statistically significant $t(49) = 6.33$, $p = .000$, $d = 1.27$. This finding highlighted that the use of EDS had a statistically significant impact on student writing performance confirming previous research (Yildiz Durak, 2018).

Paired t-tests were also utilized to explore the influence of EDS on learner writing performance taking into consideration each one of the categories in the marking rubric. There were statistically significant differences between learner pre-tests and post-tests on the five categories of the marking rubric which showed the various areas of learner writing achievement in the EDS module. Overall, EDS had a significant impact on all aspects of learner academic achievement. Cohen's effect size values suggested a "large" effect size and high practical importance for its impact on various aspects of student writing achievement (Table 4), but predominantly for vocabulary and language use confirming previous research (Duman & Göcen, 2015).

Table 4
Aspects of Writing Performance

	Measurement	N	M	SD	'T' value	Df	Sig.	Cohen's d
Content/ Analysis	Pre-test	50	5.7	4.3	9.31	49	p < .05	Cohen's d=1.59
	Post-test		12.3	4				
Organisation/ Structure	Pre-test	50	5.5	4.6	8.23	49	p < .05	Cohen's d=1.21
	Post-test		10.9	4.3				
Vocabulary & Language use	Pre-test	50	5.7	4.8	10.93	49	p < .05	Cohen's d=1.28
	Post-test		11.9	4.8				
Purpose/ Audience	Pre-test	50	5.4	4.4	6.21	49	p < .05	Cohen's d=.9
	Post-test		9.6	4.7				
Mechanics & Presentation	Pre-test	50	3.8	3.1	7.2	49	p < .05	Cohen's d=1.2
			7.9	3.4				

Impact of EDS on Student Motivation and Academic Achievement

The research used thematic analysis to explore the perceived impact of EDS on learner academic achievement and motivation. Analysis of qualitative data relied on an inductive approach, intended to identify the main themes and patterns emerging in the data (Lester et al., 2020). Finally, interpretive content and thematic analysis were also performed (Creswell & Poth, 2016).

The researcher collected qualitative data from learners (i.e., anonymous feedback and focus group discussions). The data were first read in their entirety and then coded using an exploratory and holistic approach (Saldaña, 2021). Saldaña's (2021) method of "in-vivo" coding (referring to direct learner quotes from student anonymous feedback and the focus group discussions) was applied to the data. Analysis of the data showed different themes, e.g., *development of critical thinking skills* and *self-confidence* (Table 5). Data were then triangulated with lecturer field notes. An additional lecturer reviewed 20% of the data collected and analysed it to minimize researcher bias (Cumming et al., 2006).

Table 5
Impact of EDS on Student Motivation

Themes (with frequency)	Sample Student Comments
Positive Impact	
1. Digital skills enhancement (48)	<i>I must confess I was a bit terrified when I heard that we had to prepare a digital story as I am not that good with computers. Our lecturer was very supportive. Incorporating images and videos was very exciting and I feel so confident now... (Focus group discussion 2)</i>
2. Development of critical thinking, reflective and writing skills (31)	<i>I was able to develop my writing skills as creating an EDS was so interesting...I got plenty of support, too...I was also able to develop my critical thinking skills, reflect on my work and provide arguments to support my ideas and suggestions...all these theories suddenly made sense... (Anonymous feedback – session 3)</i>
3. Professional skills enhancement (37)	<i>EDS allows me to prepare a portfolio of tasks I can use to showcase my work to prospective employers. It also allows me to use interactive elements which make my work even more engaging for my audience. (Focus group discussion 3)</i>
4. Impact on students' enjoyment of learning (46)	<i>I love using EDS. I can tell my own stories and be creative. I want to use it in other modules, too. I will certainly use it with my students as well. Writing seems so much fun now... (Anonymous feedback – session 4)</i>
5. Influence on students' self-confidence (45)	<i>I felt so proud of myself as peers congratulated me on the strategies, I have used to cope with various challenges I faced while creating EDS... (Focus group discussion 4)</i>
6. Impact on development of intercultural awareness (41) & collaborative skills (35)	<i>Interacting with peers from around the world through our DS and sharing problems and experiences helped us realise we are not alone and that peers face similar problems in other countries... We would not reach other people by just writing an essay as part of our assessment for the module... (Anonymous feedback – session 4)</i>
7. Improvement of learning attitude (47)	<i>Working on real-life stories and personal experiences made us more conscious of potential challenges we might encounter as teachers and some of the pitfalls of our profession. We became aware of different scenarios, and stories were more engaging as we could listen to podcasts or short videos and read our peers' texts...I do not think I would have paid so much attention if I just had to read a plain assignment... (Focus group discussion 5)</i>

Challenges

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| 8. Non-traditional students' challenges with technology (17) | <i>I cannot complete my assignment... I do not know how to use podcasts. Thank God, one of my peers helped me. We need additional support. For example, an assistant who could devote some time to each one of us individually to help us... We are old... We did not use these techniques 10 years ago... (Focus group discussion 1)</i> |
| 9. Lack of stable Wi-Fi and access to the internet (10) | <i>Wi-Fi is very poor in the block of flats I live... Lots of people log in at the same time and I cannot download the images I need... Otherwise, I have to wait forever... Who will help me and how? (Anonymous feedback - session 2)</i> |
| 10. Lack of equipment, i.e., personal laptop (4) | <i>I only have a desktop computer which is rather slow. I need help to make changes so that I can improve my stories... They are so poor. I need training as well. (Anonymous feedback - session 1)</i> |
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Data indicated participants valued authentic engagement in highly interactive real-life experiences, such as EDS, which allowed them to express unique points of view using words from their own language. Students indicated that EDS enhanced digital, professional, and critical thinking skills; improved writing skills; increased motivation and self-confidence; and developed intercultural awareness and collaborative skills compared to written assignments (Table 5). These findings, supported by lecturer observations, corroborated previous research in other settings (Hung et al., 2012). As students had to submit similar written assignments for all their modules, which they characterized as demotivating in previous surveys, they were more excited when working on their DS. They collaborated more with their peers, developed digital skills, and resolved various problems encountered while preparing their DS. Although there were twenty-one non-traditional students who faced several challenges while using Canva and other technology, all students successfully submitted their digital stories. Students shared their final products through social media, and some of them reported they intended to include them in blogs and share them with friends and colleagues. Student-teachers felt less isolated and enjoyed sharing DS with peers from around the world when their identities were reflected in the DS.

However, some non-traditional students reported that they faced challenges while using Canva, needed additional training to use certain elements, such as podcasts, and more time to prepare a DS compared to written assignments. These findings were also confirmed by the lecturer who observed that students faced a number of challenges due to lack of internet at their home. The lecturer confirmed most of the benefits and challenges except for the lack of laptops as most students seemed to have one. In sum, the current implementation may help educators reflect on their practices, help students develop digital skills, and inspire HEIs to create more interculturally oriented curricula.

Discussion

Involving and motivating learners is crucial for effective learning and educators should prepare meaningful activities to increase learner interest and engagement and foster active learning (Hyun et al., 2017). Previous studies indicated that the use of technology enhances student writing performance and attitudes towards learning (Barrot, 2021). According to the qualitative findings of the current study, EDS promoted authentic learning as students often used their own personal stories, which they integrated with theory, creating compelling content (Table 5, Comment 7). This was not always possible when students were asked to write a traditional essay. Completing challenging tasks successfully as they developed digital skills due to the EDS increased students' sense of autonomy. Students learned how to create podcasts, were more self-confident and creative, and improved their overall attitude towards learning (Table 5, Comment 7). Consequently, the study indicated that EDS emphasized various motivational constructs such as task significance, self-reliance, and reflective practice, confirming previous research (Jamissen et al., 2017; McLellan, 2008).

The use of technology for EDS created meaningful, interactive, and inclusive multimodal instructional content (Rubino et al., 2018) that facilitated the creation of a community of learning (Table 5, Comment 6). As undergraduate students often have varying life experiences and sociocultural and linguistic backgrounds, the EDS intervention encouraged negotiation of new theories and knowledge allowing learners to present their own perspectives and negotiate language teaching with peers. This ultimately enhanced students' professional and academic skills (Tables 3 and 4), especially their writing skills (Table 3), confirming previous research (Rubino et al., 2018). Moreover, the current study indicated that EDS could improve student academic performance significantly in terms of writing, improving student vocabulary and language use, content, and organization as well as their sense of purpose and audience (Table 4). This outcome was also consistent with previous research (Rong & Noor, 2019; Wu & Chen, 2020; Yamaç & Ulusoy, 2015) which indicated that EDS was a viable approach to help students improve various aspects of writing.

EDS provided an authentic context allowing students to work on real-life tasks (Table 5, Comments 6 and 7). This motivated learners and inspired them to put additional effort to improve their academic performance as they found EDS tasks more enjoyable. Furthermore, as a multimodal writing tool, EDS allowed students to use a variety of elements, such as infographics and videos, in addition to written text. Thus, they could convey their intended message and present the associated theories much more vividly and powerfully. The lecturer observed that students' DS were an interesting marriage of narrative, text, and technology. Rossiter and Garcia (2010) referred to such use of DS as “a potent force in educational practice” (p. 37).

In addition, EDS allowed students to develop their writing skills more effectively due to the audience effect. Having an audience urged learners to pay more attention to detail and try even harder to improve their texts. The findings also supported the idea that involving a real audience created a genuine language context (Table 5, Comment 5). The technological advances in digital media offered innovative ways of exchanging stories and enhancing intercultural awareness and communication. In a fast-paced networked society, there is an even greater demand to enhance intercultural competencies and multilingual skills. These skills can increase the overall set of 21st century competencies frequently linked with professional skills needed in the global workplace, e.g., creativity, imagination, cooperation, problem-solving, and digital

and multimedia literacies. Considering lecturer observations, these were some of the skills the students developed when they were involved in EDS.

EDS also enhanced student motivation and engagement. Literature indicated this often led to increased writing performance (LoBello, 2015). EDS places emphasis on the process and the final product, making learners more persistent and allowing them to engage more fully with the writing process, as they tended to invest considerable time and effort before asking for feedback from their audience (peers and lecturer). To prepare their accompanying videos and podcasts, students had to re-visit their work. This allowed them to detect flaws in their writing compared to if they had to produce written text only as was the case for their traditional final assignments in the control module (Table 3). The lecturer observed that, when students were engaged in EDS, they seemed to devote more time and effort as they tried to improve their work and produce the best end-products because they wanted to share them with their peers, friends, and family. As regards to challenges that students faced, digital literacy was a main issue for some non-traditional students. These learners should be offered systematic training and support before using EDS. This will facilitate the use of this approach which has a statistically significant influence on students' academic performance (Table 3), a finding confirming previous research (Balaman, 2018).

Overall, the EDS intervention managed to increase cooperation and understanding among students from various cultural and linguistic backgrounds and supported them in exchanging ideas about their teaching practices as students shared their DS through the social media and interacted with colleagues from around the world. The literature indicated that digital narratives enhanced effective visualization of reflections and ideas which enabled sharing multicultural views and thoughts (Fokides, 2016). Digital narration created a psychologically safe and supportive foundation for intercultural and multilingual cooperation and learning (Fokides, 2016) as learners in the present research study were also allowed to use short videos in their own native language (with a translation in English). This was not possible with the traditional writing assignments. Consequently, by adopting EDS, the lecturer was able to create a space which promoted intercultural awareness and multilingual interaction in the context of an undergraduate module. The internationalization of HE can also be seen as an exchange among various cultures. Given this stance, more initiatives that promote intercultural learning, plurilingualism and interaction among learners are vital.

EDS can engage university students through involvement in the creative process it necessitates (see Kocaman-Karoglu, 2016) and promote professional skills such as negotiation. Moreover, EDS may involve learners in genuine learning and enhance their understanding of theories and module content (Table 5, Comment 2). Research showed that the use of EDS in HE is still developing but does provide new techniques for learners to organise and present their work in alternative ways as well as think critically (Chan et al., 2017). As an important new area of study in HE, EDS may capture learner interest and develop valuable capabilities such as digital skills, which are considered essential in the 21st century (Germaine et al., 2016). Gregori-Signs (2014) claimed that EDS enabled learners to “evaluate the reality that surrounds them and produce their own interpretation of it” (p. 241). The current study, confirming previous research (Smeda et al., 2014), reported that the ability of EDS to personalize student learning experiences helped support students' diverse cultural and linguistic backgrounds, increased learner confidence, and developed writing, social and psychological skills (Tables 3, 4 and 5).

Conclusion

Various studies have revealed that adopting EDS connects the high-tech world outside the university and the ordinary typically lower-tech within the university setting, but also engages learners in developing their skills through the creation of personal stories (Smeda et al., 2014). This study advances the understanding of student writing, digital literacy, and motivational enhancement through EDS tasks in multicultural and multilingual HE classrooms. Findings will assist education faculty to use technologically suffused pedagogies to meet module aims successfully as EDS can improve student writing performance and attitudes towards learning. Additionally, having a real audience to view the stories increases learner motivation and helps them improve their work by editing it more carefully. Lastly, the collected data revealed that the previous concerns of some of the students, which were linked to the use of technology and the lack of time, gradually turned into positive feelings, including pride and enthusiasm about their final stories (Table 5, Comment 5).

However, educators must still be cautious when implementing this exciting yet relatively new technique as students face considerable challenges when they have limited access to the Internet or technology. Moreover, some especially non-traditional students lack the relevant knowledge and experience in using technological tools in education. Consequently, practitioners should provide training and continuous support to their students when using EDS to avoid inequity. In addition, educators must have a detailed plan, which can guide their students. This should help students understand the reasons why they are asked to engage in EDS and the benefits to academic and professional development. Lecturers should also emphasize the product as well as the process of learning as learners develop their academic skills while preparing their DS. They also need to focus on assessing student writing skills rather than the elements that learners use to make their stories more attractive. There should also be clear assessment criteria that match curricular goals. Otherwise, the implementation may not be successful and may be unfair for some students. Moreover, HEIs should provide professional development courses to academic staff regarding these new technological tools and encourage lecturers to use them in various modules. Although the current research was a small-scale study limited in time and involved only 50 students at one university, this implementation may be valuable as a genuine learning experience for undergraduate learners.

Therefore, additional research on the use of EDS in multicultural and multilingual HEI settings is necessary. Future research should explore the use of EDS in other academic programs, for example, at the doctoral level, or take into consideration other types of course delivery such as blended learning that have become increasingly popular during the COVID-19 crisis. Conducting interview based qualitative research to explore learners' retention of various learning theories and content would also be helpful to reveal the impact of EDS on academic performance. In addition, quantitative longitudinal analysis on techniques to measure retention and development of other skills, such as oral presentation skills, would be valuable. Further research should examine the influence of this learning method on practicing teachers' school-based activity regarding technology integration and the extent to which teachers use EDS in their own classrooms after being exposed to it as students.

Being a reflective educator requires higher order thinking skills. Problem-solving and decision-making are seen as an integral part of being reflective with respect to student knowledge, social and cultural circumstances, psychological processes, attitudes towards learning and teaching, and self-awareness about oneself as an educator (Schunk, 2012). Taking this into consideration, this study aspired to introduce student-teachers to the significance of reflective practice through

EDS with the goal of enhancing writing skills and motivation. Based on the findings of the study, EDS is a reliable method to develop undergraduate student digital literacy and enhance their motivation to learn. Finally, the present study provides useful guidelines for educators in HE to integrate EDS activities into their modules and courses.

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