



Article

Building Learning Communities through Digital Storytelling

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Abstract: This paper shares the first insights of the Digital Storytelling Hubs research project held by the School of Primary Education, Aristotle University of Thessaloniki, funded by the Hellenic Foundation for Research and Innovation. It is a still in-progress action research study that comprises two action research cycles. The aim of the present paper is to outline the dynamic role that digital storytelling could play in building learning communities. The research program includes the creation of three hubs, one digital and two physical, for transferring higher education research practice to primary and secondary education, and for disseminating digital storytelling as an innovative learning tool. During the pilot cycle, digital storytelling was implemented in two experimental schools in Greece, while during the main cycle, a total of 50 elementary and secondary teachers were involved. Data sources include students' and teachers' participation statistics, the digital stories created by students so far, the students' answers in questionnaires and teachers' semi-structured interviews after the pilot interventions in class. The findings suggest the dynamics of digital storytelling workshops to create vivid and powerful learning communities that foster both classic and new literacies and enhance a creative and critical attitude towards modern media culture.

Keywords: digital storytelling; communities of learning and practice; action research; primary education; secondary education; new literacies



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1. Introduction

In the constantly changing and evolving modern era, individuals are required to respond immediately to unprecedented challenges and to draw from collective knowledge that is not easy for someone to master on their own. Most modern learning theories stress an emphasis on social interaction as a key factor for learning. According to the transformative learning theory (Mezirow 1991), the necessary condition for learning is critical reflection on previous experiences and knowledge, through a persistent process of continuous review and reconsideration of already acquired knowledge and through interaction with others in an environment of cooperation, mutual respect and effective communication (Eades 2001).

Also in light of social learning theory, learning behavior is considered to be an interplay between personal factors, actions and social events, in a “reciprocal triadic relationship” (Bandura 2001). Moreover, social constructivist theories see the educational experience as a dynamic process which is “constructed” by the participants within the socio-historical context in which it takes place (Kimble et al. 2008). Furthermore, situated learning that derives from the cognitive theory of Vygotsky (1978) approaches learning as the creation of meaning through social interaction, through the interpretation of experience within real situations and experiences. More specifically, learning:

- Takes place in a specific context (working or scientific community);
- Is a sociocultural function that requires communication and interaction with others;
- Depends on the situations in which it takes place;
- Is best achieved when embedded in the social and physical environment and in authentic learning environments;
- Is the result of social negotiation (Lave and Wenger 1991).

After all, the construction of knowledge is a social process. [Wenger \(1998\)](#), by combining assumptions from various learning theories, identifies four elements for learning:

- Experience (learning as experience), a description of our ability to know the world;
- Practice (learning as doing), a description of shared social resources, contexts and perspectives that support mutual engagement in action;
- Community (learning as belonging), a description of social relationships defined within the organization with recognizable participation of members;
- Identity (learning as becoming), a description of how learning changes the identity of individuals, i.e., their knowledge, attitudes and behaviors.

Therefore, learning emerges through the practice of community members, while the commitment to serve common purposes forms a framework for learning. In this light of converging learning and practice, Etienne [Wenger \(1998\)](#) defines Communities of Learning and Practice as groups of people who share an interest, a problem or a passion for something and who deepen their knowledge and expertise in this area, through learning activities that involve systematic communication and interaction.

According to [Bolam et al. \(2005\)](#), a Community of Learning and Practice is described as a group of individuals in which participants adopt the following interwinning principles:

- Shared vision and sense of purpose;
- Collective responsibility that helps to sustain commitment and reduces isolation;
- Reflective professional inquiry that promotes new shared knowledge through interaction;
- Collaboration and interdependence;
- Promotion of group, as well as, individual learning.

As there are multiple recognized ways to engage in social learning, different levels of participation in a community of practice and learning are identified. [Wenger-Trayner \(2015\)](#) recognize five different levels of participation, from a smaller core group of members who identify very strongly with the community and contribute most of the activity to merely passive observers (or so-called lurkers on the web). This disparity is usually not a problem, as long as it reflects personal interest in the domain and not some other distinction. In a healthy community, there is usually a flow of people moving across these levels of participation, depending on their interest in the activities or projects of the community.

Communities of learning and practice and digital storytelling are actually intersecting fields. Since creating community is one of the ultimate goals of a digital storytelling workshop ([Lambert and Hessler 2018](#)), digital storytelling can be exploited as a new dynamic tool in building communities of learning and practice both for teachers and for students. In fact, the current research is an extension of our recent doctoral research, in which we focused on the use of digital storytelling in the teaching of literature and the promotion of traditional literacies and modern multiliteracies in secondary education ([Gkoutsioukosta 2020](#)). As already indicated in our doctoral thesis, and other relevant publications of ours ([Gkoutsioukosta 2018](#)), digital storytelling motivates and activates students more effectively ([Kearney 2011](#); [Vasudevan et al. 2010](#)), and appears to perfectly combine with modern learning environments, such as blended learning and distance learning, and to modern student-centered teaching methods such as project-based learning and collaborative learning. Moreover, digital storytelling by promoting [Gardner's \(1983\)](#) multiple intelligences allows the release of students' latent skills and talents. In addition, it engages learners with a wide range of expressive resources, while also enhancing students' critical thinking ([Hwang et al. 2023](#); [Kulla-Abbot 2006](#)), motivation, creativity, identity development, connection with others ([Kim and Li 2021](#)) and reflection ([Burgess 2006](#)), enabling engagement, participation ([Bryant 2023](#)), inclusion and even empowerment of the most marginalized ones ([Nilsson 2010](#); [Scott Nixon 2009](#)).

As the fore-mentioned literature indicates, a lot of current papers explore either digital storytelling in an educational context or communities of learning and practice. However, not many focus on building communities of learning and practice through digital storytelling ([Lathem 2005](#)). This study shares the preliminary findings of a participatory

action study, conducted in the context of a research program still in progress. Drawing from the above theoretical framework, this paper focuses on the following question: if, and in what ways, could digital storytelling be exploited in building communities of learning and practice?

2. Goals, Materials and Methods

This study was conducted in the context of the Aristotle's University of Thessaloniki research project "igiStory Hubs" that will last 24 months and is still in progress. The aim of the project was to transfer research practice from Higher Education to Compulsory Education, and to encourage action research in schools, through the implementation of organized teaching interventions for the use of digital storytelling in various subjects and the carrying out of extensive action research, where a total of about 50 teachers, both from Primary Schools and from High Schools, were involved. Digital storytelling was used as a means of promoting students' abilities related to reading and understanding, writing and researching a variety of topics arising from the school lessons. Moreover, the systematic use of digital storytelling as an educational tool constitutes a promising field for the creation of a dynamic community of learning and practice, whose members will experience educational action research and later act as multipliers not only for the dissemination of the specific educational tool, but for the dissemination of good practice in general. The project comprises of five successive phases: A preparation phase, a pilot phase, a reflective phase, a main phase and a dissemination phase.

The research project included the creation of three nodes for transferring higher education research practice to primary and secondary education and for disseminating digital storytelling as an innovative learning tool: one digital node, i.e., an online platform, and two physical nodes, an urban and a regional one, which operate in Thessaloniki and in the wider area of Larissa, respectively.

The project intends to function not only as a channel for disseminating research results from the University to other levels of education, but as a field of convergence and the expansion of empirical research through action research in which the teachers involved are supposed to form a community of learning and practice. Action research is a qualitative research method, strongly reflective and critically oriented, based on the belief that educational research should be conducted by those who serve in education, as it studies pedagogical phenomena within their natural context, the classroom.

Educational action research is participatory and, at the same time, collaborative research that aims to improve education, as it involves teachers, school leaders and students (Kemmis and McTaggart 1988, pp. 21–28). It is conducted with and by the people of the practice, and not on those people by some external researchers (Ledwith 2007, p. 599). Those involved in action research actively participate in the research process as agents of change and improvement, forming communities of practice and learning, as action is carried out collaboratively within a community that collectively produces new practical knowledge useful to participants. After all, as pointed out by other researchers, 'good' action research aims at improvement for the benefit of all concerned, at the production of useful knowledge for all those involved in it, at the dissemination of this knowledge for the professional development of teachers as whole and in the development and improvement of education in general (Altrichter et al. 2005, p. 74).

According to the methodological framework of the action research model (Carr and Kemmis 1986; Altrichter et al. 2005), the classroom research was practically carried out by each teacher—a researcher in collaboration with the members of the university team who facilitated the research process and attended some of the classroom meetings. Moreover, during the classroom research, for reasons of data triangulation, information was collected from the students, the teacher-researchers and the research facilitators, who recorded their observations and impressions after each classroom meeting. Thus, the following observation materials were collected: the students' responses to open-question questionnaires, the analytical reflective diary of the teacher-researchers and the comments of the

researcher-facilitator who operated as critical friend. These data sources enabled unfolding reflectiveness and revision that is constitutive of action research.

Other sources of data involved teacher participation statistics, student participation statistics, teachers' semi-structured interviews after the intervention was completed and, of course, digital stories. The digital stories created by students, which amount over 300 constitute a fundamental analysis element.

Thematic analysis in the framework of Grounded Theory (Strauss and Corbin 1998) was chosen for the analysis of the research data, as it offers an analysis scheme that fits well to the specificities of action research. In the case of digital stories in particular, a method of multimodal analysis (Alonso et al. 2015; Gubrium and Turner 2011; Yang 2012) that has been devised for the needs of our doctoral research (Gkoutsioukosta 2020) is to be exploited.

3. Procedures

Digital storytelling was implemented for developing two different types of communities of learning and practice:

- A. A teacher community of learning and practice that included:
 - On-line and face to face digital storytelling workshops;
 - Asynchronous communication (DigiStory Hub forum and email);
 - Synchronous communication (thematic video conferences, class observation, scientific conference).
- B. Numerous student communities of learning and practice that included:
 - Face-to-face digital storytelling workshops;
 - Synchronous communication (in class and outside class activities, digital storytelling festival);
 - Asynchronous communication (school platforms, such as e-class, e-me and social media, e.g., Viber).

In the current research project, two research-action cycles were planned. During the first cycle, the so called experimental-pilot circle, which lasted six months, 5 primary and 3 secondary teachers were involved, as digital storytelling was implemented in two experimental schools, namely the experimental primary school of Thessaloniki and the experimental high school of Larisa. We attempted to build a teacher community of learning and practice by organizing an on-line digital storytelling workshop for all the involved teachers in the first place, and by continuously supporting them during the implementation either asynchronously, via email, or in-site, via class observations and meetings. On the other hand, 8 student learning communities were created by the implementation of digital storytelling in 8 different classes. A total of 160 students participated in these interventions, and 69 digital stories, both individual and collaborative, were created. Students attended face-to-face digital storytelling workshops conducted by the teacher of each class and participated in various in-class and out-of-class activities (such as reading, screening, out of class visits, etc.). For the asynchronous communication and collaboration between students, available school e-platforms were used, such as e-classes.

Digital storytelling was introduced to teachers through an on-line workshop. Before the intervention, they were supported by the research team in linking digital storytelling to certain school subjects, in creating their learning scenarios and in finding suitable teaching resources. Teachers implemented digital storytelling in their classes following the learning scenarios, and they were supported during the intervention by the research team asynchronously. Most teachers enriched and transformed their learning scenarios in practice. After the class intervention was completed, all teachers were interviewed by the research team. As far as students are concerned, digital storytelling was introduced by the class teacher. Afterwards, students created either individual or collaborative digital stories, working both in class and at home. They presented their digital stories in class and, finally, they answered the questionnaires created by the research team.

During the second cycle, the so-called main phase, which lasted nine months, 50 primary and secondary teachers were involved, a total of about 900 students participated and 377 digital stories were created. Most teachers that were involved in the pilot circle remained in the project with an expanded role in the teacher learning/practice community that was created. Teachers attended a digital storytelling workshop at the two physical hubs that were created in Thessaloniki and Larisa, respectively. Subsequently, they were supported by the research team to create their own learning scenarios and to implement them in class. Besides the face to face workshops, teachers were supported during the implementation via the digital hub, the digital platform that was created by the research team where they could find useful resources about implementing digital storytelling in class, such as student digital stories, free software, learning scenarios, image repositories and other useful links. The platform also included a forum for the asynchronous communication of the teacher community; however, teachers preferred to communicate with the research team via e-mail. For this reason, in order to strengthen the community, we additionally organized five thematic video conferences so that teachers could present the evolution of their class implementations, discuss the difficulties they have faced and exchange good practices. Moreover, we visited most of the schools involved for class observation, mainly at the phase of the digital story presentation in class. The program will conclude with a two-day scientific conference for the teachers and two digital storytelling festivals in Thessaloniki and Larisa, respectively, for the students. The first will be addressed to the scientific and educational community. Members of the research team and educators/researchers will participate with announcements. The festivals will be addressed to the students of the schools involved in the project, in order for them to have the opportunity to present their digital stories in a wider student community.

4. Results

The material gathered by the program is vast. The interviews of the teachers have just been completed, and the processing of the student questionnaires, the recorded interviews and the field notes has just started. A conference is planned in October 2023, which will give the opportunity for a meaningful exchange of experiences between the teachers, the research team and invited experts. The conference, along with the digital storytelling festival we are organizing for students, will be the peak moments of the two learning communities, namely that of the teachers and students.

4.1. Teachers' Learning Community

According to the few surveys that have been conducted in Greece, the levels of knowledge, experience and readiness of Greek teachers to create or participate in communities of learning and practice are relatively low (Avdelli 2012; Guso 2018). Our idea was that a digital storytelling program is an opportunity to bring together teachers on a voluntary basis for two main reasons: first of all, because it has a clear goal and a concrete outcome, which is the creation of digital stories by students; digital stories which, as creative works, can go public and advertise the school's work (Prenger et al. 2017). Second, because it involves both traditional and new literacies and can, therefore, appeal to a variety of teaching profiles, both traditional and innovative. Moreover, everyone realizes the role that digital story can play in connecting school culture with extracurricular youth culture (Ohler 2013).

The fifty teachers who volunteered to participate come from many different schools, urban, suburban and rural. Admittedly, we cannot say with certainty that they already consist of a learning community, mainly because they do not communicate with each other as much as they do individually with the research team. Although the on-line meetings in thematic groups that we organized throughout the school year went well, the digital forum that we designed within our webpage was not able to attract the attention of our teachers in order to sign in and exchange their experiences. There are, however, five schools, each one of which might be considered a learning community as long as three or more, closely

cooperating, whose teachers were participating in the program (Ogle 2003). At least, we could say that the seeds were planted for the creation of a learning community.

Nevertheless, many teachers in other schools worked in pairs, either because they taught different groups of students of the same grade, or because they needed each other's expertise. Usually, language arts teachers cooperated with ICT, art and music teachers. On top of that, many teachers have told us that digital story program made quite an impression on their colleagues, and they have been proposed for mentoring further implementations next year.

Digital stories have been implemented in a variety of school subjects: language arts, foreign language teaching, history, social studies, and art education. The most popular topics were diversity, environment, war and peace, and teenage problems. Most successful, in terms of the digital stories' quality so far, happens to be art education, probably because in such projects, there is a solid and qualitative virtual material on which students can rely upon and, thus, invest their time on their own perspective and relationship with the works of art.

4.2. Students' Learning Community

As far as the student learning community is concerned, we could not be happier. Almost all participating students answered in the given questionnaires that collaboration with their peers was the most enjoyable and creative element of the program. The large majority of the digital stories were made by student groups. The students were involved in a variety of activities: reading of a diverse corpus of texts, exploring digital sites, creative writing, roleplaying, taking interviews of relatives and citizens, taking photographs, visiting museums and exhibitions, designing school yards, exploring digital theater archives, and walking in the nearby forests.

Students definitely combined their digital stories with previous knowledge, shared personal experiences, and articulated authentic speech. A few students chose to talk, not entirely openly but nevertheless eloquently, about their immigrant experience and the discrimination they suffered when they first came to Greece and went to school. Others talked about health issues, others about domestic violence. As far as digital literacy is concerned, teachers and students used a variety of digital tools and different semiotic resources: OpenShot, MovieMaker, Canva, CapCut, Stop-motion, i-Movie, Clipchamp, VideoPad, FlexClip, Scratch, PhotoFunia, Adobe Premier and ibisPaintX. The important thing is that students chose the applications and the software by themselves.

There is no doubt that students took a more active and empowering role. This is particularly evident in those classes or individual students who are considered low-performing, usually from an unprivileged social and cultural background. There is a case of a fifth grade student who had articulation problems and managed to record her voice after fifteen attempts. Their participation in the program and the production of digital stories which were shown to the rest of the school greatly increased their confidence and changed their image in the school.

5. Discussion

As we have pointed out in the introduction of this paper, it is widely accepted in the bibliography that digital storytelling is a powerful strategy to create learning communities and communities of practice for teachers. More recent studies focus on particular means that facilitate the participation of elementary students to a digital storytelling community, such as a social network application (Liu et al. 2019). Others focus on the role of collaborative digital storytelling in advancing university students' writing skills (Tanrikulu 2022). Psychologists have been consistently shown that digital storytelling is an effective methodology to address issues of inequality and inequity when working with underrepresented and marginalized communities (Fish and Syed 2021), a finding that is immensely important for educational research, since many schools or classes can be characterized marginalized communities; in our project, we came across a few of those.

Our research project involves about 900 students in 50 different schools; the magnitude of the sample cannot be easily compared with the samples in the above-mentioned studies, which concerned only a couple of classes. With such a big number of participants, apart from various case studies that can be conducted, we are interested in posing questions that can be investigated throughout the whole sample and may bring to light megathemes, such as What kind of teaching practices favor the creation of digital storytelling learning communities? Given that digital storytelling is more-or-less an expression of individuality, how does individuality balance with collaborative work within a student's learning community? What do educators need in order to develop motivation to participate in a learning community, and how can we, as academics and researchers, facilitate the formation of teachers learning communities?

Obviously, we are going to need quite a long time to analyze our data and be able to sufficiently answer those questions. At the moment, we have to limit ourselves to some preliminary findings only. Digital storytelling is a powerful means for building learning communities because it provides teachers and students with a clear target and a concrete result, which is the digital story: A work of art that can be presented to the community, posted on the internet, on social media and make everyone proud. Of course, the production of digital stories is dependent on the pedagogical approach of each teacher. Teachers who invested on the "preparation" activities, before starting planning the digital stories, had better results. The fifty teachers of our program have worked very hard. Some of them tried the project method and group work with students for the first time in their career, whereas others enhanced their experience on this method. The program had a significant positive effect on teachers' receptivity to change, and on their confidence in professional collaborative learning (Pan and Chen 2023). Teachers preferred to collaborate with a colleague in their school and were reluctant to take part in the digital forum on the program's website. Perhaps this has to do with their familiarity with digital forums, and not with their willingness to exchange their thoughts and experiences with one another. The conversations that were carried out during our digital theme group meetings were very thoughtful and helpful for all the participants.

A temporary conclusion is that students did more writing than reading in depth. Thus, collaborative writing is the key element in learning community building, rather than group discussions on printed material. Students were easily satisfied with the information they got and they have not been looking further into each subject or question. However, this is a general literacy problem that cannot be resolved only through a digital story program. As far as the literature class is concerned, problems arose with the constructing of the storyworlds in the fictional digital stories and the interpretive relation between the literary texts they had read and the digital story that was inspired by that. In history classes, a whole other set of problems came up that are rooted in traditional history teaching. Apparently, a digital story program in various school subjects brings up deeper teaching problems of the subject itself, and this is a proof of the digital story's dynamics.

Creating digital stories in school encapsulates the entire pedagogical process, and reveals teaching weaknesses as much as talents. It is a process rather than a product. It is a powerful tool for building learning communities, because it is neither too easy, nor too difficult (Hastings Gregory and Rozzelle Nikas 2017, p. 34) and includes two essential elements, both for teachers and students: expression and choice.

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