

EUROPEAN EDUCATORS' TRAINING NEEDS FOR APPLYING DIGITAL STORYTELLING IN THEIR TEACHING PRACTICE

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Abstract

Storytelling, especially in its digital form, is an innovative pedagogical approach that has the potential to engage learners in student-centered learning, and improve the learning outcomes across the curriculum. This paper reports on a trans-national survey regarding the training needs of teachers, educators and trainers regarding the necessary key competences for applying this methodology in their teaching practices. Based on the results of the survey, a training program, presented in this paper, consisting of a digital course and a learning handbook, was designed and implemented.

Introduction

Storytelling is an innovative pedagogical approach that has the potential to engage learners in student-centered learning, and improve the learning outcomes across the curriculum. It enhances learners' motivation, providing them with a learning environment conducive for communication, reflection, construction, and collaboration.

For thousands of years societies have taught key principles through storytelling (Brady, 1997; MacDonald, 1998):

- In some cultures without written language, storytelling was the only way to convey a society's culture, values, and history (Egan, 1989).
- Great leaders of all types (e.g., religious, political, educational, and military) have used stories as instructional tools in the form of parables, legends, myths, fables, and real life examples to convey important information (Benedict, 1934; Brown & Duguid, 1998; Davenport & Prusak, 1998; Leonard-Barton, 1995).

When combined with the latest technologies, storytelling has the potential to be used in all settings, including formal, non-formal and informal education settings as well as work environments, such as in medical practices (Heiney, 1995; Chelf, Deschler, Hillman, & Durazo-Arvizu, 2000) or human resources and knowledge management (Swap, 2001; Sole, 2002).

Digital storytelling is the combination of traditional oral narration with multimedia and communication tools (Lathem 2005). It is a form of art that combines different types of multimedia material, including images, text, video clips, audio narration and music to tell a short story on a particular topic or theme (Robin & McNeil 2012). Digital stories can be stored or published on the Internet, allowing people to review, critique and discuss them, thus enhancing their educational value and their life span (Lathem, 2005).

Some learning theorists believe that as a pedagogical technique, storytelling can be effectively applied to nearly any subject. Constructing a narrative and communicating it effectively requires one to think carefully about the topic and the audience's perspective. Both listeners and narrators have the opportunity to develop their personal and narrative speech, to represent their knowledge, to present their story and receive feedback (Coventry, 2008).

Growing up with unprecedented access to technology has changed the way young people, *digital natives*, communicate, interact, process information, and learn (Oblinger & Oblinger, 2005). Technological progress is such that communication and interactivity are easier to facilitate (Jenkins, 2006) and high fidelity and media rich learning environments are becoming more and more common (Gee, 2007). This contributes to the belief that life and learning in the Information Age will differ significantly from that of the Industrial Age (Reigeluth, 1999).

Although future teachers may hold strong positive beliefs about technology and may be proficient with a variety of software applications, they may be unable to translate this knowledge to their teaching. According to the European Internet Foundation the key to adequately prepare learners for life in a digital world is to “redesign education itself around participative, digitally-enabled collaboration within and beyond the individual educational institution.” (EIF, 2009: 21) The foundation predicted that by 2025 this would have become the dominant worldwide educational paradigm.

In this vein, the T-Story project was initiated, attempting to train teachers/educators/trainers how to incorporate the digital storytelling methodology. The initial step of the project was to record the training needs of the target groups and then design and implement the training material. This paper describes the training needs' survey, discusses the results, and briefly presents the designed training material.

Training Needs' Survey

The survey was conducted from March to April 2013 among seven (7) European countries: Italy, Portugal, Romania, Greece, Poland, the Netherlands and Spain. The purpose of the survey was to develop a training needs'

analysis of educators/teachers/trainers regarding storytelling and digital storytelling skills, which should constitute the basis for the design of the training material of the T-Story project. Furthermore, the survey aimed at collecting a representative set of case studies, which exploited this approach in practice, to serve as a good practices' guide.

Research Methodology

A questionnaire distributed online or in print, was used to acquire the research data. The main language was English, although in some cases the questionnaire was translated in the native languages of the project partners.

The questionnaire was structured in six (6) sections, with a total of 52 questions. Section A included eight (8) questions regarding the demographic and professional profile of the respondents. Section B was comprised of nine (9) questions, aimed at capturing the respondents' knowledge about and attitudes towards storytelling and its educational exploitation. Section C contained four (4) multilevel questions, attempting to record the participants' ICT and digital tools' competence. Section D was similar to Section B, but it was related to digital storytelling. Section E contained eleven (11) multilevel questions, attempting to record the respondents' training needs and their expectations from a training program on the application of digital storytelling in their teaching practices. Finally, Section F contained two (2) questions that provided the respondents the opportunity to freely express their opinions and comment upon the scope of the project, as well as to express their intention to follow the forthcoming activities.

A total of 381 (121 male - 256 female) valid questionnaires were collected from all countries. The geographical and age distribution of the respondents is presented in Table 1 (six respondents did not provide their age). The questionnaires were analyzed quantitatively with the SPSS software and qualitatively (open-ended questions) by applying a content analysis approach.

Table 1

Geographical and Age Distribution of the Research Population

		a3						Total	
		Greece	Netherlands	Italy	Poland	Portugal	Romania		Spain
a1	18-25	1	9	2	4	2	6	3	27
	26-35	15	8	12	23	23	17	14	112
	36-45	29	14	17	20	13	21	25	139
	46-55	11	13	18	3	10	5	12	72
	>55	1	3	12	2	2	4	1	25
Total		57	47	61	52	50	53	55	375

Demographic Information

The research population was highly educated, as 89.48% held a higher education degree or diploma (44.74% BSc, 36.58% and 8.16% PhD). Regarding their professional profile, 57% of the respondents were employed by a public education institution, 22.6% by a private education institution and 13.6% by a state-subsidised school. Figure 1 presents their employment status in more detail.

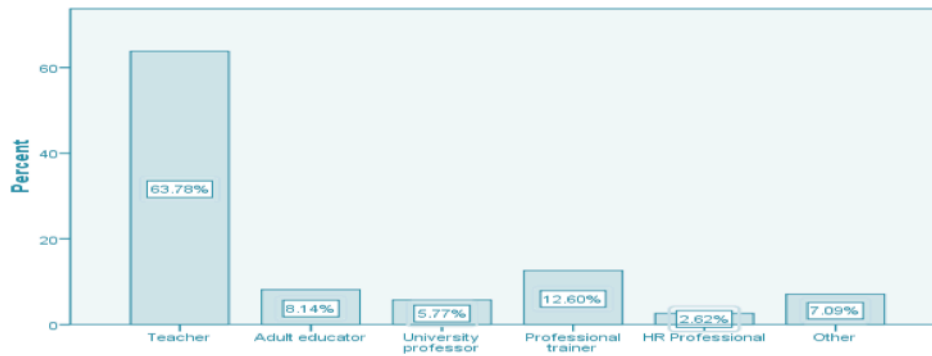


Figure 1. School level of employment distribution.

Results

Section B of the questionnaire focused on the respondents' knowledge about and attitudes towards storytelling and its educational exploitation. The results revealed that two out of three (66.93%) knew what storytelling was, with respondents from only one country providing a lower percentage of affirmative answers. Half of the respondents (50.13%) were familiar with the educational exploitation of storytelling, whereas 38.06% provided a negative answer (the rest selected the *I don't know/I don't remember* choice). The geographical distribution in this case was not as even. The respondents from Greece (71.9% yes) and the Netherlands (61.7% yes) provided the highest percentages of affirmative answers. On the contrary, more than half of the respondents from Poland (57.7%), Portugal (54%) and Spain (69.6%) provided negative answers.

Attempting to clarify these answers, the question "could you please indicate what is storytelling applied to education for you" was addressed to the respondents. The answers were analysed and categorized. The largest category considered storytelling to be a way to learn through stories and experience (13%). The next category considered storytelling as a way to foster learning on a specific subject, like English, history, mathematics, etc., (11%). Another 10% claimed that storytelling is a way to transmit knowledge, content and ideas. Furthermore, 8% of the respondents described storytelling as a way to explain or re-formulate new concepts and another 8% as a method. Other significant percentages were: way to engage, motivate, interest learners (6%) and way to share and exchange knowledge, ideas, experiences and values (5%). Smaller percentages were coded as attributes or descriptive definitions of storytelling as an approach, such as: an action of telling stories (4%), representation of event and reality (3%), creativity (4%), imagination enhancer (2%), etc.

When asked if they had used storytelling in class, 60.3% of the respondents provided an affirmative answer. When correlating this question with the previous one, some interesting observations were made. For example, it turned out that some of the respondents who claimed to have used storytelling in class, also mentioned that they didn't know what storytelling actually is. A possible explanation is that they might consider that storytelling in general is something different from the use of stories in class, which as divided consists in mainly 2 axes: a) the use of fairy tales for teaching and/or amusement

(mainly in Kindergarten and the lower grades of Primary school), and b) the use of stories for formulating explanatory examples within a course (most commonly appearing in secondary education). Also, although 191 respondents claimed to be familiar with storytelling in educational contexts, fewer than half of them were able to provide concrete examples. Thus, a conclusion that can be drawn is that the stakeholders are actually not very confident with their understanding of storytelling, as some of them consider that storytelling in class is differentiated from storytelling in general. Overall, it became obvious that the stakeholders use stories in their teaching, but they seem to not be sure that this complies with the notion of storytelling. Instantly, addressing this misconception became a concrete goal for the training material that was planned to be produced at a later project stage.

Further examining the respondents' attitude towards storytelling, they were asked if they used it in their social life and activities. More than half of them (59.32%) provided affirmative answers. The correlation with the first question of Section B (Are you familiar with storytelling?) revealed that the distribution was similar with the previous question. The analysis verified once more that the stakeholders seem to consider that storytelling in social context, in educational context, and in general are not necessarily identical notions. Thus, it became obvious that this issue needed to be clarified at the initial steps of the course, allowing the stakeholders to understand/realize that they already know more about storytelling than they actually think they do. This would allow the course to build upon their existing knowledge and perception, following a constructivist approach.

Section C of the questionnaire investigated the stakeholders' ICT and Digital competence. The first question asked them to rate, using a 5-grade Likert scale, their skills and competences for a range of ICT tools. Only two (2) of them mentioned that they had no general ICT skills at all. The majority felt confident with their ICT competences: 64.6% of them evaluated their ICT competences as *good* or *excellent*. Moreover, 35.4% considered their ICT skills *enough for their purposes*, indicating that they felt confident enough to fulfill their tasks with their acquired skills. Only 31 participants (8.1%) considered their ICT and digital competences as *need to be improved*. As the tools became more sophisticated, the respondents became less confident about their skills. The range of tools spanned from Office suites and Email clients to Social Networks, Mobile Applications and Multimedia tools.

Regarding the use of such tools in their everyday life, 78.5% claimed to be using them daily and 19.2% regularly, on a weekly basis. The analysis revealed that the more frequently the respondents used technology, the more confident and satisfied with their skills they were. When asked if they used ICTs in their teaching, 64.6% responded *very often*. The rest used ICTs a few times per semester (25.7%) or not at all (9.7%). A closer examination of the answers revealed that most of the respondents who claimed that they did not use technology in class at all were actually technology efficient (at least partially). When asked to elaborate on that, their main reason was the poor technological infrastructure in their institutions. They also mentioned lack of time for preparing and searching for resources, which could also be interpreted

(through in-depth correlation with other questions) that they didn't feel confident enough with more sophisticated ICT tools or that they didn't know where to search for suitable resources and ideas.

Consequently, an important outcome of the research analysis is that the project's deliverables should focus on easy, non-demanding tools for applying (digital) storytelling in teaching and training. Also, the lack of time for preparation and resource searching is a significant factor, as the respondents' state. Thus, it became important to highlight through the deliverables that digital resources are reusable and easier to manage in the long term. Finally, some respondents seemed to not be persuaded that ICTs can facilitate teaching or they are not confident with their digital skills. Also, this issue could be addressed through the handbook and the digital course, which could demonstrate how technology can facilitate teaching.

The next Section (D) was related to Digital Storytelling. Only 33.42% claimed to be familiar with it and 57.89% provided a clear, negative answer. When asked to elaborate on this, various reasons were provided, such as: "I don't have enough time for participating to professional development/training events like this," "Lack of money for attending such courses/programmes," "Lack of courses on this topic," etc. Although some differentiations were observed among the countries, obviously related to other activities, such as national training programs for educators, the need for the training material which was to be produced through the project to start from the actual basics was highlighted, once again.

For those who claimed to be familiar with Digital Storytelling, the next question asked them if they had ever used it in their classes. A total of 76 respondents claimed to have done so; with 74 of them claiming that they know what it was. When further asked if they used Digital Storytelling in their social life, only 8.70% provided an affirmative answer. This element reveals not only that educators do not actually know what digital storytelling is, but also their distance between them and their students, who nowadays do "everything" through social networks. A concrete conclusion up to this part of the questionnaire was that the project's stakeholders were interested in (digital) storytelling, but not many of them (less than 1 out of 5) know what it was and actually had used it.

Furthermore, the stakeholders were asked to provide the names of ICT tools, used for Digital Storytelling. Only 17% of them provided some answers, with only PowerPoint and MS Moviemaker being mentioned by more than 10 respondents. In total, about 50 applications were mentioned, indicating the variety of them, allowing also the novice users to exploit them. On the other hand, this also revealed how minimal the educators' knowledge of the actual exploitation of such tools is.

The next section (E) of the questionnaire aimed at recording the stakeholders' needs and expectations, regarding Digital Storytelling. Most of them (85.56%) considered it to be useful for their target students. Almost one third (32.5%) of the respondents considered that "The age of pupils" was the most

important reason, followed by their teaching subject (21.2%). “Their personal feeling” was also an important reason (19.69%). When further asked if they intended to learn more about this approach and its educational exploitation, 93.91% provided an affirmative answer. Moreover, 89.98% of them expressed their willingness to collaborate with other colleagues who are already using the digital storytelling approach, thus also expanding their professional network.

The most important aim of Section E was to record the training needs that the respondents considered having. A set of skills was provided as possible answers, with research and creative skills emerging as the most important ones. Communication, networking, technical and multimedia skills were assigned significant percentages also. This means that the stakeholders not only wanted their technical knowledge and skills to be improved, but they also expressed their need to be trained on a more conceptual level. By the latter, we mean understanding not only what the digital storytelling teaching methodology actually is, how and when can it be applied, but also how one could be able to be creative enough to build his/her own digital stories, based on his/her target group of students.

The next question focused exactly on this issue, asking to assess the participants’ expectations related to storytelling activities. About one third of the participants answered this open-ended question. Among their answers, the most important and/or interesting ones, regarding their students’ perspectives were: “to better know their learners,” “to understand their inner thoughts and feelings,” “to enhance communication with them,” and “to adapt the learning process to their needs.” Regarding their teaching efficacy, they mentioned: “to improve my teaching,” “to engage learners in a more attractive way,” “to check the understanding of a specific topic,” and “to receive feedback on my own teaching.” As for their communication with their students, they mentioned: “to share experiences and opinions,” “to improve the learners’ social and communication skills,” “to create a common language of understanding,” and “to create a more comfortable class climate.” Other answers were related to more conceptual aspects of teaching, such as facilitating creativity, solve behavioral and social problems in class, and understanding of and adapting to the students’ learning needs, to “come closer” to their students, etc. Detailed, multiple choice questions were provided for the respondents to fill in, enumerating a set of both conceptual and practical skills, competencies and dexterities that they considered important for them or their students to develop, through training on digital storytelling approaches. These provided insights on how the training material should have been designed, by being qualitatively analysed. This analysis is out of the scope of this paper, mainly due to space restrictions.

The last question of Section E was very interesting, as the stakeholders were asked to describe the aspects of the “perfect” digital storytelling software. The most popular description was “easy to use” (37%). All the other aspects were assigned 10% or less of the answers, with the most popular ones being: engaging and motivating, interactive, intuitive, multimedia rich, attractive, flexible and adaptable.

Lastly, the two questions of Section F provided the participants with the opportunity to express their opinions and perceptions in a freer manner, by asking them to provide comments and suggestions. Only 36 answers were provided in this section, as it was not mandatory, and it was mainly addressed to those who felt that there were uncovered issues from the questionnaire or those who felt the need to summarize their answers in a small comment. They mainly underlined the fact that they considered digital storytelling as a method that would have a positive effect in their teaching process. Also they expressed their intension to learn more and deepen their knowledge on this approach, also expressing their wish for it to represent an integral part of schools and learning activities, also mentioning, once again, the infrastructural problems which they often face.

Conclusions

The survey revealed that the research population already had a general, good knowledge of the meaning of storytelling and its possible use in an educational context. They were obviously aware of its potential, but nevertheless, they were not always able or found it easy, at least, to provide concrete examples. Linking these observations with what emerged from the desk research on best practices in the use of storytelling and digital storytelling at the international level, we can find stories and digital instruments used to face current events (like environment pollution, energy crisis, demographic question, peace, earthquake...) or more scholastic subjects (scientific phenomena, historical events...), allowing complete and engaging activities.

Furthermore, the collected best practices reveal a general European transversality regarding the approach to Storytelling applied to learning, without significant national differences and with common instruments, objectives and results.

The survey highlighted the concern of the participants about the infrastructure problems and the amount of time, one has to invest in mastering and applying this teaching methodology when shifting from storytelling to its digital form. In this vein, some of the participants appear not to be very convinced that ICTs can facilitate teaching likewise or they claimed not to be confident enough, regarding their technical skills and competencies. Moreover, there is generally less familiarity with digital storytelling as a learning methodology/process, compared to plain storytelling, probably because digital components are less known from teachers. Participants were asked to provide examples of applications. The answers were coded mainly in the following categories: digital storytelling is used as (a) a method to learn, (b) to foster learning in a more attractive and engaging way, (c) to share ideas through working in group, and (d) to stimulate creativity and imagination. While providing examples of existing projects and training programmes that incorporated digital storytelling in educational practice, most of the respondents either described the digital tool which was used or isolated case studies they were aware of. This was valuable information for the design of the project's training material, as it highlights issues that need to be addressed through it.

Examining the participants' expectations from a digital storytelling training programme, they are diverse and related to both their teaching practice and professional development, as well as their learners and the outcomes they would achieve. In this vein, they expressed their intention to exploit digital storytelling in order to adapt to their learners' needs, improve their familiarity with digital tools, enhance the communication among them, and cultivate several cognitive skills and dexterities too. The latter include, among others, reading, writing, creative and analytical thinking, problem solving and collaboration. All these were linked, through the responses with their and their students' social lives too.

Overall, the research revealed the interest of the teachers/educators/trainers on the digital storytelling approach and provided valuable insights on their needs and expectations in order to design the training material, within the T-Story project. The main conclusion is that for such a material to be transversal, it has to be addressed to both the novice and the experienced user equally. Thus, it should start from the basics and provide many practical examples and information, apart from theoretical insights and techniques' demonstration.

The T-Story Training Material

Taking into account the survey's results, a digital course was designed, along with an accompanying learning handbook. The course is divided into three (3) phases and the handbook in equal chapters. Each one focuses on a specific part of the process of creating a digital story. All phases contain theoretical elements and practical exercises to explain and work with digital storytelling techniques. The course's structure is:

- Phase 1: Storytelling
 - Lesson 1 – The story of storytelling
 - Lesson 2 – How a story works
 - Lesson 3 – Build a story
 - Lesson 4 – Activities with stories
- Phase 2: Digital and Information Communication Technologies
 - Lesson 1 – Digital and ICT tools
 - Lesson 2 – Working with...images and sounds
 - Lesson 3 – Working with...video and animations - e-activities
- Phase 3: Digital Storytelling
 - Lesson 1 - Using Digital Storytelling, potential and impact
 - Lesson 2 – Toward the synchronizing between stories & technology: the storyboard
 - Lesson 3 - Build a D-Story

The course is designed, following the digital storytelling methodology. The learner participates in a fictional world with other classmates, following the narration of Dan, the main character of the course's digital story. The handbook and the course are tightly interconnected and complementary. Dan pauses his narration occasionally, asking from the learners to consult the handbook and elaborate on the provided material. The handbook contains examples and exercises, but it also provides interactive links, utilizing the

Quick Response Codes (QR Codes) for the learners who wish to study even more resources and expand their knowledge.

Guided by Dan and his colleagues, the learner is aided throughout the process of building his/her own digital story, by the end of the course. Thus, by completing the course, the learner does not only familiarize him/herself with digital storytelling techniques and tools, but will have also produced a tangible outcome that will facilitate the deep understanding of the method. The important aspect of this approach is that this product will be based on the actual teaching ideas of the learner, thus consisting an indicative case study for him/her.

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This project intends to promote a wider use of the Storytelling and Digital Storytelling in education and training at all levels throughout Europe by developing a digital course for educators, teachers and trainers.

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