

## Article

# Harnessing the Potential of Storytelling and Mobile Technology in Intangible Cultural Heritage: A Case Study in Early Childhood Education in Sustainability

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**Abstract:** Digital storytelling can offer multiple benefits both to students and teachers, and new media provide multimodal ways to produce, transmit and communicate stories. In parallel, the need to engage preschool children with the creative use of technology emerges in order to address concerns that arise from the modern way of life and the need to safeguard intangible cultural heritage and to communicate its value for sustainable development. The current study presents an example of digital storytelling utilization in a preschool class to raise awareness on sustainability issues. A linear digital storytelling was created, representing a local myth about watermills, then an educational intervention was conducted, where the myth's digital representation was used as an educational tool to raise awareness on local cultural heritage and sustainability issues and also as an example to inspire and guide teachers and students to create their own stories. Results showed that the digital storytelling was an effective educational tool to the acquisition of new knowledge and the motivation of preschool children's interest about the cultural asset of watermills and that the production of digital storytelling is feasible in the class context. These findings prove the potential of digital storytelling and mobile technology by using low-cost devices and applying simple techniques in preschool education.

**Keywords:** intangible cultural heritage; storytelling; digital technology; sustainability

## 1. Introduction

The critical role of culture for sustainable development has been highlighted in recent years in several important policy documents [1], where the need for cultural heritage protection from various risks such as “urbanization, phenomena associated with climate change” [1] (p. 5) is emphasized. Social and economic changes such as globalization, lifestyle, labor migration and inhabitant's displacement and the modern way of life (urbanization, weakening of social ties, excessive use of technology, etc.) arise concerns including “children's lack of cultural knowledge” [2] (p. 404) and create changes that threaten intangible cultural heritage. As a solution, the integration of culture “in the development sector as well as in educational programmes” is proposed [1] (p. 5). Storytelling is considered an innovative tool for safeguarding intangible cultural heritage and an important direction for engaging us (visitors, community, students, etc.) with cultural heritage [3], and that can offer multiple benefits both to students and teachers. Nowadays, the new media provide multimodal ways to produce, transmit and communicate stories and the new digital tools can be used in storytelling utilization and production in a low-cost, simple and effective way.

The current study aims to present the potential of storytelling and mobile technology in early childhood education, an educational level which plays a critical role on children's development, where fewer similar studies have been conducted, compared to other educational levels [4]. A local myth about the cultural asset of watermills is used as a trigger to raise preschool children's awareness on cultural heritage and related sustainability issues such as water management and flour production, and digital storytelling is utilized in three different approaches. Initially, a linear digital storytelling in a video format was created, representing the local myth about watermills. Next, an educational intervention was conducted in a public preschool class, where the myth's digital representation was used as educational tool to raise awareness on local cultural heritage and sustainability issues. Finally, the pre-created digital story was used to inspire and guide teachers and students to create their own stories. According to the results of other researches, pre-created stories are used for teaching purposes [4] and as the difficult part for the students-creators was to write the story, the use of a video as an example is necessary to guide the students [5]. Therefore, utilizing folk tradition and local cultural heritage such as traditional myths, fairytales and stories could additionally be a valuable guide for students in creating their own digital stories. The current study highlights the potential of digital storytelling and mobile technology in the learning process and provides an example of a creative and pleasant educational activity, able to effectively engage the preschool students and teachers, a critical part of the educational community, and to draw their attention towards local cultural heritage and sustainable development by using simple devices, techniques and materials.

The current study is organized as follows. A literature review is presented in Section 2. Then the case study description follows, including the research, the myth's digital representation and the educational intervention. Next, the results are presented and, finally, the conclusions, which revealed, among other findings, that digital storytelling is an effective educational tool and the production of digital storytelling is feasible in the preschool class context. The results also reveal the acceptance and positive attitude of students and teachers in the use of digital storytelling as a part of the educational process.

## 2. Literature Review

### 2.1. Sustainability and Intangible Culture Heritage

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" [6] (p. 41). The critical role of culture for sustainable development has been highlighted in recent years in several important policy documents [1], setting out either general principles or specific actions. For example, in the 2030 Agenda for Sustainable Development, the 17 Sustainable Development Goals that were adopted with explicit references to cultural aspects emphasize the central role of local heritage and cultural heritage in sustainable development [7]. Similarly, in the 2003 Convention for the Safeguarding of the Intangible Cultural Heritage, the role of intangible cultural heritage "as a mainspring of cultural diversity and a guarantee of sustainable development" is highlighted [7] (p. 5).

More specifically, in the 2013 The Hangzhou Declaration—Placing Culture at the Heart of Sustainable Development Policies, the need to recognize culture as a source of building sustainable development, creativity and renewal as well as the need "to draw from the experiences of past generations" are highlighted [1] (p.2). Furthermore, general actions and specific suggestions that aim "to place culture at the heart of future policies for sustainable development" [1] (p.2) are proposed, the benefits of culture and heritage are emphasized [1] (pp. 4–5), as well as the need for protection from various risks (e.g., "urbanization, phenomena associated with climate change" [1] (p. 5) and, as a solution, the integration of culture "in the development sector as well as in educational programmes" is proposed [1] (p. 5).

According to 2017 ICOMOS-IFLA Principles Concerning Rural Landscapes as Heritage, tangible and intangible heritage of each rural area is part of the world heritage [8]. In order to

promote the sustainable preservation of each region and to transmit their cultural value to the younger generations, the definition of cultural value, its knowledge and awareness is required [8]. Rural areas contribute to the protection of the natural environment, the dissemination of their culture and when a rural area emphasizes on communication and enhances the value of its heritage, then it can have positive economic results [8]. Rural areas are vulnerable to demographic, cultural, structural and environmental changes [8] and protection measures should be taken (e.g., “D. Communicate and transmit the heritage and values of rural landscapes,” “through collaborative participatory actions, such as shared learning, education etc.” [8] (p. 6).

Intangible cultural heritage is defined in the 2003 Convention for the Safeguarding of the Intangible Cultural Heritage as “the practices, representations, expressions, knowledge, skills—as well as the instruments, objects, artefacts and cultural spaces associated therewith—that communities, groups and, in some cases, individuals recognize as part of their cultural heritage” [9] (p. 3). Part of the intangible cultural heritage are oral traditions and expressions, which are living forms of expression and are used to transmit knowledge from one person to another, from one generation to another. They include various categories such as proverbs, riddles, fairy tales, legends, myths, songs, etc.; are characterized by differences in narration depending on the area, the performer, etc. [10]; and “contribute to giving us a sense of identity and continuity” [11] (p. 2). Oral traditions and expressions are threatened by various factors such as urbanization, migration and environmental change. Measures for protection should include their integration in the daily life of the society (e.g., transmission from person to person, from generation to generation), in the formal and nonformal education [9] (p. 4), as well as the use of Information and Communication Technologies (ICT) because they can protect “the full range and richness of oral traditions” [10] (p. 5).

## 2.2. *Storytelling and Digital Technology*

### 2.2.1. Digital Technology

New media provides multimodal ways to produce, transmit and communicate stories [12], and new digital tools can be used in storytelling in a low-cost, simple and effective way [13]. The use of ICT has affected the evolution of cultural heritage dissemination [14]. It is also believed that the use of ICTs can transform museums into hybrid spaces and provide them with opportunities to create qualitative, interactive and engaging cultural experiences [15]. Particularly, the use of Virtual, Augmented or Mixed Reality is considered a means to transform the way museums communicate with their visitors [16]. Applications of Mixed Reality (MR) and Augmented Reality (AR) can prove to be valuable for cultural heritage [17] and education, since they can support many types of learning, in formal and informal education [18]. Also, they enable new forms of experiences by telling stories in meaningful and compelling ways, different from traditional media (books, movies, etc.), connected to particular locations, places, people or objects with long-term benefits [19].

Technology users have also changed; they are more familiar with the use of mobile devices and applications, especially young children, who are born and raised in a technology society and digital culture [20]. On the other hand, with the vast availability of information ICT offers, users dedicate short time to a topic and prefer short text and videos [21]. Mobile devices are used in everyday life [17]; they can provide a powerful means for the enhancement of intangible cultural heritage [22] and tablets are considered as the ideal tool in education [20]. According to Yallihep and Kutlu [23] and based on studies’ results, in K-12 and upper secondary school, the use of mobile devices in education led to an increase in student learning, but contradictory results were reported concerning students’ willingness to use mobile devices rather than computers, and therefore more research to this direction is required.

The research of Papadakis and Kalogiannakis [24] in preschool and early childhood education showed that tablets are very popular with both children and their parents. These devices have low cost and flexible use, especially for preschoolers, as the tablet size is ideal even for children up to 2 years old. Children from the age of 2 are familiar with the use of touch technology, while children up to the

age of 2 can easily learn and use touch devices. There is also an ever-increasing trend for the use of tablets in the educational process and in preschool children. Using tablets as an educational aid, in the context of a properly enriched teaching activity, can stimulate children's interest, enhance learning and acquisition of skills, develop their creativity and improve learning outcomes in the preschool class. Also, their use as a game helps children improve skills, enrich knowledge and understand the role of technology in their lives [24].

### 2.2.2. Storytelling

Storytelling is a narration form [14,25]. It is used in different sciences and fields, for example as teaching tool [26], as a healing tool (e.g., regarding historical trauma [27]) or as a research method (e.g., as narrative-based data-gathering method [28]), and thus different definitions and descriptions are given [13]. As defined by the National Storytelling Network, it is "the interactive art of using words and actions to reveal the elements and images of a story while encouraging the listener's imagination" [29]. A story can be a blend of legends, facts, myths, beliefs, feelings and emotions [16]; it is considered as a way to store information [17] and it as a way to connect the past, present and future [25]. Stories and storytelling are enjoyable and engaging to all people, can enhance learning, improve the connection between people of different generations [16,30] and strengthen our uniqueness and our identity, helping us to meet the challenges of our time [17].

Storytelling is considered as one of the oldest existing forms of art that has the power to transmit cultural content and valuable information [16], to reveal secrets and to inspire noble behaviors [25]. It plays an important role in human interaction [31], gives people the opportunity to connect their personal stories or experiences [12] and is used from the beginning of human life [16,31]. Handler Miller [25] mentions that scientists believe that storytelling "can be traced back to sometime in the Pleistocene Age," where it was used "as a critical survival tool (to communicate important information about the environment, behavior of wildlife, and availability of food)" [25] (p. 4). Storytelling is also considered as the oldest learning and teaching tool [16], used in every culture to share knowledge and experiences [31,32] in a comprehensible, memorable [16] and enjoyable way [19]. It can communicate complex concepts and important information and is used "to teach and train young people" [25] (p. xviii), to record events and to preserve cultural and moral values [32].

Storytelling is influenced by social and technological changes [21] and its creative combination with digital technology formed Digital Storytelling [32,33], "the modern extension of the ancient art of storytelling that makes good use of current technology," according to Lambert, as referred to in [5] (p. 3).

### 2.2.3. Digital Storytelling

Digital Storytelling, as referred to in [30], has been defined by Lambert, Atchley and Mullen (Centre for Digital Storytelling) as "a 2 to 5 min audio-visual clip combining photographs with voice-over narration (and other audio if desired)" [30] (p. 4). It is used for different purposes (therapeutic, educational, research, information, etc. [25]) that often overlap [30]. It is one of the arts genres (dance, theatre, etc.) that has been used for research purposes [30]. In education, it is considered a basic educational strategy [2] and a suitable and powerful teaching tool [32] that should be an important part of the educational process [17,34]. In cultural heritage field it is considered as the modern equivalent of oral storytelling traditions and as an effective way to preserve traditions and stories [25], capable of encouraging "new ways of thinking" [30] (p. 7).

Digital storytelling has been positively affected and become a powerful communication tool with the evolution and advancements of ICT technologies [33]. Diverse developments in digital technology such as virtual reality and wireless networking have led to various applications of digital storytelling (video games, mobile apps, etc.) in multiple fields [16,25]. It can be linear, non-linear, adaptive, participatory [16,25] and its main features are engagement and interactivity [16]. Interaction allows the user to change story elements, such as plot or flow [14], and to interact with story elements [25]. It is one of the key features of digital storytelling [14] that has been enhanced by digital technology; however,

it is not a new feature, since, according to the researchers, interaction has always existed in storytelling, for example in interactive books, in role play games [14], even in oral narration, according to a theory, when the storyteller could change the story based on audience reactions [25].

#### 2.2.4. Digital Storytelling in Cultural Heritage

Storytelling has the potential to be an innovative tool for safeguarding intangible cultural heritage. It is recognized as an important direction for engaging us (visitors, community, students, etc.) with cultural heritage [3] and it is believed that the application of storytelling itself is an innovation, due to the way it is used [35]. In the cultural heritage field, storytelling can effectively draw the community's attention [12] and safeguard its identity. The gradual weakening of a society's identity leads to the gradual degradation of its cultural identity and heritage and to the gradual emergence of social and economic consequences [35]. The cultural assets of a place can contribute to the promotion of its products and services [15] and lead to the creation of positive outcomes in multiple levels such as social, developmental, environmental, etc. [12].

Stories including folk tales, legends, myths, historical facts, etc. and storytelling have the power to transform an intangible element to tangible [13], and to link the tangible with intangible and the past with the present and the future [12]. Stories about sites and monuments can give emphasis to the unique aspects of a place [13], make them more understandable and interpretable, and shed light on and enhance its meaning, value [12] and authenticity [36]. In museums, the use of stories and digital storytelling helps museums convey their messages in an understandable way and offer their visitors engaging experiences that combine learning and entertainment [16]. The use of narration can be a powerful tool to improve learning and to enhance dissemination, where the emotional factor, the user's previous knowledge and the nature of narration itself play a key role [14]. One challenge is the engagement of the young generations, in order to ensure that stories, lessons and skills will not be lost [12].

Storytelling in cultural heritage may or may not refer to real events [3]. In case it is strongly linked with real historical facts, that works restrictively to the author. The narrative environment, the environment where the action is placed, is a crucial point and a kind of relation between its elements and the real elements should exist [14].

Various applications and projects have been implemented as a vehicle to preserve cultural heritage, for example as a medium for the preservation of memories [26], to extend a building's life, to highlight its importance and to engage the community [12], where storytelling is combined with various forms of digital technology and with different perspectives. For instance, Augmented Reality technology and transmedia storytelling were used on a city's street art (considered intangible cultural heritage) [37]. In [22], an AR app is presented, which plays audio (popular music, oral history, local tradition, etc.), without the user having to interact with the screen, while visiting the place. Another example is a museum project aiming to show the importance of preserving the intangible heritage of a Zambia community including traditions, customs and beliefs through storytelling [38]. The CrowdMemo is a community technology project aiming to preserve the local heritage of a rural town. In that program, through a technology intervention, local children were trained to create digital videos by using mobile phones and low-cost cameras. Videos contained the memories of the community's senior members and were accessed by QR code scanning or were uploaded to YouTube [26]. Another example is ShadowStory, a digital storytelling system for children, inspired by traditional art form of Chinese shadow puppetry. It aimed to promote local traditional culture and art and to address concerns that arise from the modern way of life (urbanization, weakening of social ties, excessive use of technology, etc.) that may affect the development of children. It was tested in a primary school by students who created stories, inspired by traditional myths, grandparents' stories and their daily life. Results showed that creativity and collaboration among children were promoted and at the same time children had the opportunity to become intimate with their cultural heritage [39]. Digital storytelling was used to preserve folklore stories [40,41]. In [40], the folklore stories that were studied were associated with natural objects (textiles, wooden masks, the lake) and a historical figure. Digital storytelling was



implemented for 2 folklore stories, delivered in a video format and displayed by projection mapping and a large screen TV. The researchers aimed to document stories about Malaysian culture and heritage collected directly from storytellers and the traditional boatbuilding process, based on the narration of a local craftsman. They created AR books to disseminate stories to the public and emphasize the importance of collecting intangible heritage data for AR experiences in order to make the use of the technology meaningful.

#### 2.2.5. Digital Storytelling in Education

In the education field, according to Yuksel-Arslan, Yildirim and Robin, digital storytelling is a process of creating “short stories that allow students and educators to enhance their information-gathering and problem-solving skills and their ability to work on a collaborative team” [33] (pp. 427–428). It is considered a basic educational strategy [2] and a suitable and powerful teaching tool [32], since it offers multiple benefits and opportunities both to teachers and students [2,5,33]. It promotes various skills such as cultural literacy, information literacy, visual literacy, media literacy, etc. and engages students [16,30,42]. The use of digital storytelling draws students’ attention, helps to capture and expand their imagination, enhances children’s self-reflection, strengthens the construction of science knowledge and gives them a sense of ownership [33] and opportunities to express and enhance their creativity, to stimulate their curiosity, to develop cognitively, socially and emotionally [2]. It improves students’ achievement, critical thinking and knowledge acquisition [31,32] and stimulates their interest through a collaborative, creative and pleasant process [16,25,26,34] and, thus, it can be a meaningful learning experience [5].

Digital storytelling is used in all educational levels [4,43], where various applications and projects have been developed. Usually, it is used by school teachers to deal with a certain curriculum’s topics, where students have the opportunity to create their own stories [25], as well as in higher education for professionals such as student teachers, nurses or health professionals [30]. For example, in higher education, preservice elementary teachers had to create original video on a sustainability issue and to think about how they might integrate digital storytelling in the teaching process [5]. They present and evaluate the creation of videos with original stories on sustainability issues by teachers in the context of a six-month course at the university, specially designed for teachers. They studied whether teachers realized the usefulness and benefits of digital storytelling and the results showed that despite the difficulties (in some cases the difficult part was to write the story and needed a ready-made video for guidance), all teachers created suited videos, appreciated the pedagogical value of digital storytelling and stated their willingness to integrate digital storytelling creation into their teaching practice [5]. Representative examples in school settings are the study by [2] where they developed a tool for the creation of digital storytelling by children that aimed to enhance their creativity and collaboration and the study by [31] where a role play game was developed to be played by a whole class using their mobile devices. The game aimed to enhance teaching and learning of languages and users had storytelling as a guide, and the help of myths and other elements such as images, music, etc. [31].

An example of ICT’s potential in the context of formal education is the study of [44]. They developed a mobile application—called “Fiabot!”—that enables the creation of interactive and multimedia stories by students of primary schools. Results showed that the application had a positive impact on curriculum enactment, effectively supported the related educational activities, supported children to explore an educational use of digital media and provided both teachers and students with a tool to develop new skills. The use of tablets was the most suitable and attractive solution, which helped students to be more active and to change their view about how mobile devices can be used [44]. In another example, elementary students created digital stories about literature and stated that they liked participating in a new experience based on collaboration and teamwork, but also the fact that their work would be available online and would become known [34].

An example of using storytelling in early childhood education is the research by [33]. They studied the teacher’s experience in creating digital stories, after attending a two-day workshop. Then,

they created digital stories in classroom, individually or in collaboration with students, and on a topic related to students interests and concerns. Teachers stated that they found digital storytelling more effective, able to transform abstract knowledge into concrete form. Also, it provides an opportunity for change in their practice and use of technology in teaching [33].

The literature review demonstrates the potential of digital storytelling and mobile devices in education and reveals the need to address concerns that arise from the modern way of life (urbanization, weakening of social ties, excessive use of technology, etc.). It also highlights the fact that, nowadays, preschool children are familiar with the use of mobile devices and applications and it stresses the need to engage preschool children with the creative use of technology. On the other hand, it reveals the need to safeguard intangible cultural heritage and to communicate its value for sustainable development, especially to young generations. In this context, a case study is presented that evaluates the use of digital storytelling, mobile devices and a traditional myth in order to raise awareness of preschool children on sustainable development. This study provides an example that is in line with the guidelines and the principles of cultural heritage and sustainable development document policies such as “value, safeguard and transmit culture to future generations” [1] (p. 5), [8,9], harnesses the potential of digital storytelling and mobile technology by using low-cost devices and applying simple techniques, and investigates its effective application in a preschool class.

### 3. The Case Study

#### 3.1. The Research

The current research aimed to evaluate the effectiveness of the pre-created digital storytelling video (myth representation) as an educational tool and to assess the development of digital storytelling as an educational activity in the preschool class. The study and evaluation of teaching and learning processes in young children is a complex and multifaceted procedure. Case study was selected since it allows in-depth investigation of facts and behaviors in real context, especially in systems with complex and dynamic relationships and interactions [45], such as the preschool class. The research questions are:

1. What is the impact of digital storytelling as an educational tool to the acquisition of new knowledge by preschool children?
2. How can digital storytelling affect preschool children’s interest about the cultural asset of watermills?
3. What are the effects for preschool children and teachers of their own digital story creation in a class context?
4. What are the teachers’ opinions about the creation of digital stories by preschool children in a class context?

A qualitative research was conducted in July 2020 at a public preschool class with 12 children of average age 4 years (7 girls and 5 boys) and 3 teachers: the 2 teachers of the class and 1 internship preservice teacher. One of the teachers was also a researcher of the current study. Observation, interviews and informal conversational interviews [45] were used as quality data collection techniques [46], as follows:

- class group interview before the educational intervention, in order to find out what the children know about the watermills and matters related to them.
- class group interview after the educational intervention supplemented by discussion with each of the children during the implementation of their paintings, in order to record, in more detail, the results of the pedagogical intervention at individual level as well.
- interview of one class teacher and the internship preservice teacher (hereinafter referred as T2 and T3, respectively), in order to triangulate the results of the research.

- class teacher-researcher observations: the class teacher-researcher was also the coordinator of the educational intervention and she had previously been trained in the video production process by taking part in the digital representation of the myth.

The class group interviews were conducted during the educational intervention and lasted 10–15 min. They were supplemented by discussions with each student lasting about 3–5 min each, conducted while the children were drawing their individual paintings. Both in the class and the individual interviews, they were asked questions in order to investigate the learning outcome. In the end of the individual discussion, they were asked about what impressed them and would like to draw. The children's drawings constitute another source of qualitative data, which were not analyzed in the context of the current research due to time constraints, and it could be a significant part of future work. The teachers' interviews lasted 20–25 min and took place outside the school environment. Both students' and teachers' interviews were based on a set of questions (listed in Appendix A) and only handwritten notes were used to record observations and interviews.

The goals of the current research required in depth study and analysis of preschool children's and teachers' attitude and opinions, so the qualitative approach was chosen. The restrictions caused by the COVID-19 pandemic at the time of the research led the study to be conducted in only one preschool class and without the presence of a second researcher in the class. Therefore, the results of the research cannot be generalized, but they give clear answers to the questions of the specific research, while the interviews of the class teachers increase the validity of the results. The aforementioned data collection methods, that is, (i) the interviews of the class teachers, (ii) the interviews of the students both in class and individual level and (iii) the detailed observations of the researcher-teacher, constitute the methodological triangulation used in the current study, which ensures reliability and validity of the qualitative data. The intervention was part of the daily school curriculum. The recorded research data relate exclusively to the educational intervention and its results. Furthermore, the participation of two teachers along with the researcher-teacher throughout the conduction of the intervention guarantees the objectivity, reliability and validity of the research and ensures compliance with the ethical rules of the research process.

Content analysis of the students' and teachers' interviews and the researcher-teacher's observations was performed, with emphasis on examination of how the research questions are answered by the participants' answers and remarks. Results are presented in two parts, corresponding to the two parts of the teaching intervention. Within each part, the presentation of the qualitative data was done according to the data collection tool used [45]. The data of the first part answer the first two research questions while the data of the second part answer the third and fourth research questions. The major points of the children's and teachers' interviews and the researcher-teacher's observations are presented in the results section.

### 3.2. *Myth's Digital Representation*

In myth representation, in addition to the seven elements of the digital storytelling (point of view, a dramatic question, emotional content, the gift of your voice, the power of the soundtrack and pacing [43]), emphasis was also placed on elements proposed by other researches and more specifically on the representation of details that make the scenery set more credible (e.g., customs, architectural items) [14] (p. 136) and the connection of the story with other relevant elements, such as habits and way of working [35].

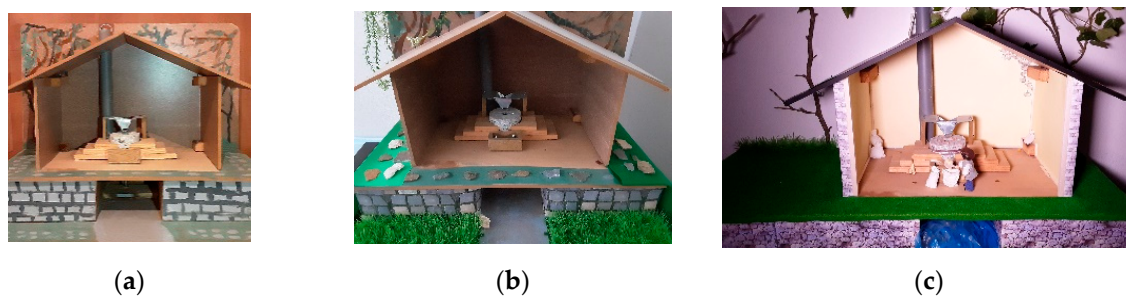
The digital representation of the myth aimed to preserve the local traditional story [25], to enhance the interpretation and communication of the cultural asset of watermills, to impart knowledge and to enrich the intellectual process. In particular, it aimed to provide a more perceptive view of the myth that will lead to better understanding of the millstone construction, the operation of watermills and the human creation/activity regarding how they managed natural resources (water management, flour production, utilization of local materials) to meet basic needs in the pre-industrial period.



The selected myth is a local traditional story about watermills of the area of Tzoumerka in North-Western Greece. Watermills are considered the first invention that utilizes a natural and renewable energy source, the water. They are a proper example for the new generations to get in touch with sustainable development and learn through the practices of previous generations, since they use a renewable source of clean energy. Additionally, they constitute a significant innovation of ancient times with long history and evolution over time [47,48] and they stand out for their tangible and intangible heritage such as proverbs, riddles, songs, etc. [49–51]. The myth attempts to explain how man came up with the solution for the construction of the millstone (watermills in this area have millstones that are made by stone parts and pieces of wood bound together and enclosed by metal wreaths). According to the myth, a craftsman was trying to construct the millstone of the watermill. Although he had prepared all the materials carefully, he failed to bound all the stones together to form the millstone. No matter how hard he tried, the stones would not hold steady together. After many failures, a goblin appeared and revealed him the secret, that he should insert pieces of wood between the stones to fix and tighten them all together [52].

The digital representation of the myth was created using the stop motion technique, a simple and well-known technique that can be used even by children since it requires no special equipment or expert knowledge, but only minimum guidance, and included the following phases: shaping the scenery and the characters (toy-figures), setting up the photo shooting area and conducting tests, and, finally, photo shooting and video production.

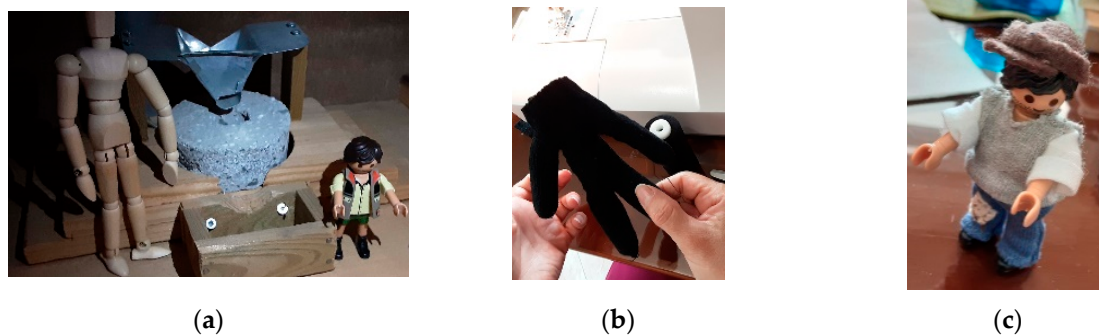
The scenery set included a watermill model in its natural environment (Figure 1). The watermill model was originally created in 2013 as a student project for the Technology course, in Junior High School and it was purposefully used because it is a feasible construction for preschool teachers and students. The main parts of the watermill mechanism were functional, i.e., rotation of the fan caused the millstone to rotate, and therefore covered the educational needs. The scenery set was lined with simple materials (paper, dry leaves and twigs, etc.) in order to represent the real natural environment of the watermills in the specific area and as few objects as possible and appropriate color combinations were used so the scenery set would not tire the viewers and distract them.



**Figure 1.** (a) The original watermill model; (b) Tests of lining with various materials; (c) The final scenery set.

The two myth characters are the craftsman (miller) and the goblin, and articulated dolls were used for their representation (Figure 2). The size of the craftsman doll was determined by the watermill model size and a Playmobil® figure was finally chosen, since it had the ideal size, it is suitable for the stop motion technique, due to its modular motion; it is an intimate and pleasant figure as it is one of the favorite toys of children of new and older generations; and it is used in representation projects [53]. A wooden painting model doll was used for the goblin and it was purposively chosen to be larger than the craftsman, in order to transmit the message of the supernatural forces that characterize goblins, but also to make its presence impressive and arrestive. The costumes of both dolls were clothes and accessories that were sewn exclusively for the specific representation. Various tests were performed on costumes, according to local traditions, so that the craftsman's clothing would resemble the actual

clothing of that period, the goblin costume would indicate a dynamic but impersonal character and altogether would match and fit in the rest of the scenery set.



**Figure 2.** (a) The dolls used for the myth's characters; (b) Costumes creation; (c) The craftsman/miller.

Three devices were used to take different shots (a Samsung WB100 camera, a Samsung Galaxy J6 mobile phone and a Samsung Tab A tablet) and spotlights were used for fixed artificial lighting (Figure 3). Earphones were used as remote controllers with the smartphone and the tablet to avoid device displacement.



**Figure 3.** (a) The tablet and the camera; (b) The mobile phone.

The photo shooting process lasted 5 days. The photo editing process followed, where the Adobe Photoshop CS6 software was used to edit photos. Then, in the audio editing process, the narration of myth was recorded, and natural sounds were edited. The calm and clear voice of a young woman was used for the narration of the myth in an attractive and expressive way, and the natural sounds of water flow, real watermill in operation and hammer blow on wood were edited. Finally, the video production process followed, where Adobe Premiere CS6 and Windows Movie Maker were used and a video with duration 3:13 min, in mp4 format, was produced.

### 3.3. Pedagogical Intervention

The intervention had two parts. The first part included the use of digital storytelling as an educational tool to communicate the cultural asset of watermills and to raise awareness of preschool children on sustainability issues. More specifically, the myth's digital representation was used as a trigger to teach preschool children about water management, grain cultivation, flour production through the old generation practices to meet their basic needs. The second part included the digital storytelling production by preschool students and teachers as a classroom activity, where the pre-created video of myth's digital representation was used as an example as proposed in [5].

The intervention lasted 6 days. Initially the video was shown, then the watermill model and all parts used in myth's representation were presented and, as a final step, two relevant digital stories were created by educators and children. More specifically:

- Day 1 activities:

Activity 1: An initial dialogue revealed that children had no knowledge about watermills, so they were given general information about the watermill and its main utility. Before the video was shown, a short oral introduction was done, in order to introduce the children to the craftsman's main problem and boost their curiosity, so they would observe the video carefully and search for a solution to the problem.

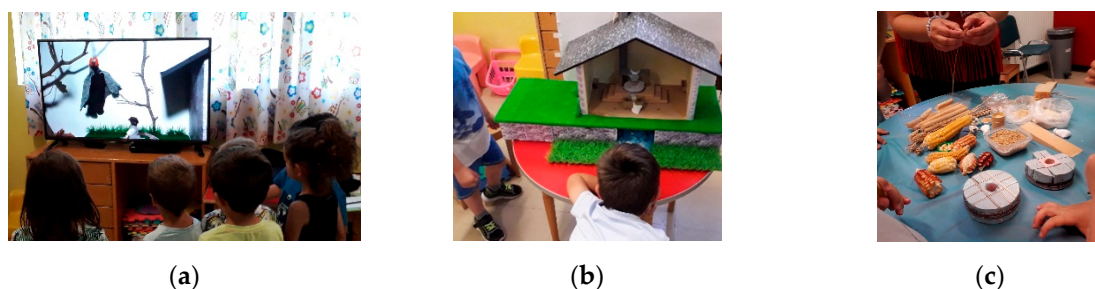
Activity 2: The video was shown to the children and, when it was necessary, the class educator encouraged the children to focus on points helpful for understanding the myth, how watermills work and their usefulness. She asked them to observe what the goblin gave the craftsman to assist him, to observe the seeds that were falling into the millstone hole and finally what the miller collected in the sack.

Activity 3: A short creative dialogue followed, to find out if the toddlers had understood the central idea of the story, if they had retained the information presented in the video about the watermills and if they were able to describe it briefly.

- Day 2 activities:

Activity 1: The video was shown to the children once again. The aim was to help them assimilate the narrative they already knew from the previous day activities, but also to introduce the story to the two children who were absent during the digital narration of the first day.

Activity 2: The children were presented with to the model of the watermill, the two main characters of the story, as well as all the other materials (millstones, hammer, wreaths, wooden wedges, small sacks) used to create the video, but also corn seeds, whole corns, ears of wheat and flour. They had the opportunity to catch and observe the characters, to see the individual parts of the watermill, such as the canal, the fan and the flour case, and rotate the fan with their hands, which caused the millstone to rotate. The children were additionally informed about sowing and grinding of grain, since, as was found from the initial interview, children could recognize flour only as a final product and they were unaware of the previous stages of its production (Figure 4).



**Figure 4.** (a) Children watching the video of the myth; (b) Children exploring the watermill model; (c) Mill parts, grain, flour, etc. are shown to the children.

Activity 3: A creative discussion followed and the issue of creating our own video digital narrative was raised. Children were asked to think of something that could become a short story. Teachers and children came up with the idea of a “good story” and a “funny story,” as they named them. The “good story” was about a good man who loaded his donkey with sacks of wheat on its back to take them to the mill to make plenty of flour and give it to the poor. The next day the flour was ready and so happened what the children had wished: “Let the children of the whole world have bread and food!” The “funny story” was about a mischief. The goblin took one of the craftsman's tools and hid it so he could not find it. The children decided that the goblin would take the craftsman's hammer and hide it in the flour case. At the end, the goblin felt sorry for the miller and helped him find the hammer.

- Day 3 activities:

Activity 1: A brief discussion was made about the actions of the previous days, focusing on the short stories that were created.

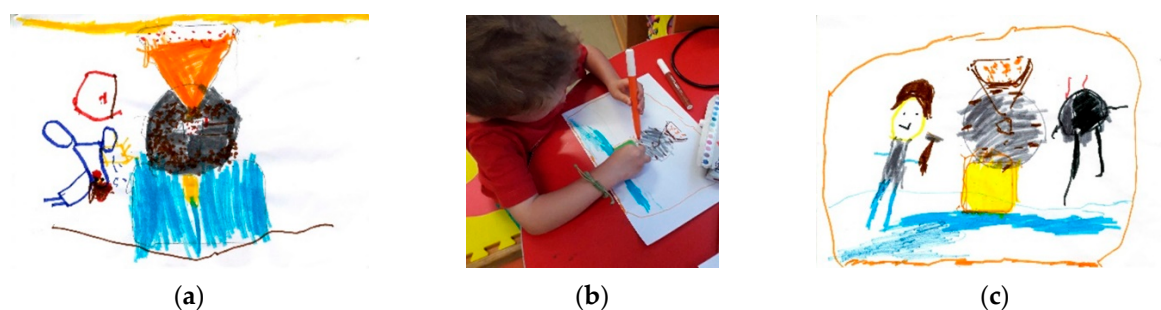
Activity 2: A short video clip of a real watermill in operation was shown to the class.

Activity 3: The children, in groups of two or three, participated in the process of photo shooting of the “good story” with the guidance and help of educators.

- Day 4 activities:

Activity 1: Children and teachers discussed about the photo shooting of the previous day and about the plot of the “good story.” The “good story” was then co-narrated by the whole group and was recorded using a mobile phone.

Activity 2: Depiction of the mill—painting. Children created their own drawings, in which they were asked to capture what they remembered, liked or what impressed them about the watermill and all the previous activities. Each child created their painting individually in about 10 min, whereas the entire activity lasted 1 h (Figure 5).

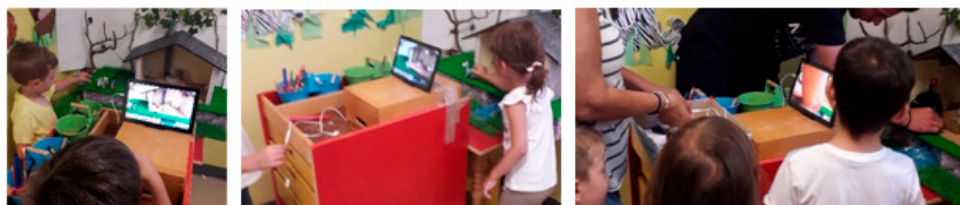


**Figure 5.** Children’s drawings. (a) In the millstone (grey circle), the brown dots represent the wooden parts; (b) A child creating his drawing; (c) In the millstone (grey circle), the brown horizontal lines represent the wooden parts.

- Day 5 activities:

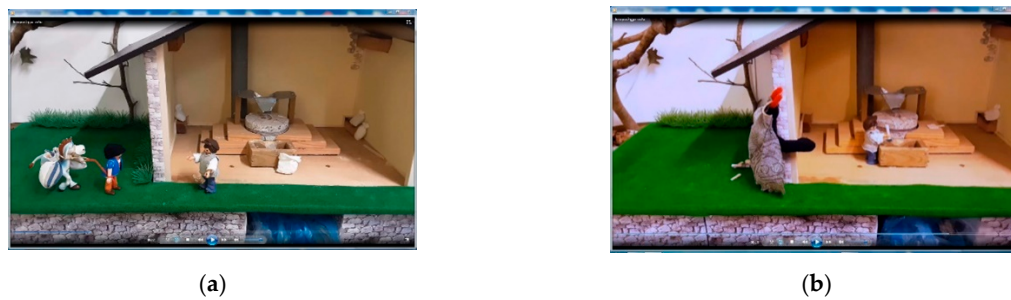
Activity 1: The children were reminded of the previous day’s activities and creative discussion followed about the photo shooting of the “funny story,” the way the children cooperated and the role of each child in the process.

Activity 2: Children and teachers worked together to do the photo shooting of the “funny story” (Figures 6 and 7).



**Figure 6.** Children and teachers taking photos for their stories.





**Figure 7.** (a) Screenshot of the “good story;” (b) Screenshot of the “funny story.”

Activity 3: Recording of the narration of the “funny story” followed, which was done by the internship student of the class and the toddler that had the initial idea for the story.

- Day 6 activities:

Activity 1: The children watched the digital stories they had created (Figure 8).



**Figure 8.** Children watching the “good story” and the “funny story.”

Activity 2: The toddlers with their teachers created a group painting—a painting that depicts the watermill, the main characters of the stories as well as other elements that the toddlers referred to, such as sacks with flour, the hammer, etc.

## 4. Results

### 4.1. Digital Storytelling as an Educational Tool

The class interview with the preschool students before the educational intervention showed that no child knew what watermills and windmills are or what they are used for. When asked if they could think or imagine what a watermill might be, they gave descriptions such as “a machine that makes mud” or “it may look like a tornado.” Only one toddler referred to the “mill of the elves ... we played games there” (a place for Christmas events in the area of Trikala), ignoring that it was a large mill that used to operate in the area at the past. About windmills, they gave descriptions such as “it’s like the propeller of a helicopter” and “it’s that it rotates when the wind blows ... and we have it placed in the flowerpot.” Children were also asked about the flour, whether they know how it is made and what it is used for, and they answered the following: “mom gets it from the super market,” “we buy it in the paper bag,” “bread is made from flour,” “we make pizza” and “we make cake.”

According to the researcher observations, the children were very willing to watch the video. When asked if they wanted to watch the video, their answer was an enthusiastic unanimous “Yes.” Their positive response was also shown by the fact that they moved from their seats and stood in front of the 42-inch TV on which the video was shown. They all watched the video very carefully, were impressed by the myth and their spontaneous expressions were recorded: “stones, he carries them ... and more stones,” “there is the water,” “he gives him sticks,” “he has a hammer,” “the mill rotates.” To the educator’s question, “What does the miller collect with the shovel?” they answered, “It is the flour.” It is worth noting that the children noticed the appearance of the goblin, a thing that was not foreshadowed by the narration and some said: “What is this?,” “who is he?”



Discussion with preschool students after the video show revealed that all children liked the video of the myth representation, they realized the problem that the craftsman had and they understood that the goblin was the one who helped him. When asked for their opinion about the goblin, whether it was good or bad, everybody answered that it was good, “good because it helped the craftsman.” They were asked about the thing that the craftsman inserted among the stones and they all answered correctly “sticks of wood ... and hit them with the hammer.” When asked why he did that, they answered “to tighten the stones.” They were then asked about what a watermill is and what does it make, and they answered: “it grinds the corn,” “it makes flour,” “it gives us the flour.” When asked if they wanted to make their own video digital story, they all answered affirmatively. The digital storytelling was a very enjoyable and at the same time effective educational tool. It activated toddlers’ interest and the meaning of the main story was very understandable. The scene with the craftsman hitting the wood wedges was very successful. There was clarity in the sound of the hammer and at the same time simplicity in the image, allowing concentration and understanding of the projected subject of the narrative.

Teachers T2 and T3 in their interviews stated that they liked the video and appreciated its educational value. T2 said “it is ideal for the children, it offered them understandable information about the watermills” and that “the children understood what help the goblin offered.” T3 answered that “the video was nice! Short, simple and comprehensive” and added, “the children understood how the goblin helped ... and helped them learn different things about the watermills.” Both T2 and T3 were positive to the idea of creating their own digital story with the children. T2 replied “it is a nice idea and I want to participate in the process” and T3 said “it is very interesting ... let’s do it.” When asked if the possible difficulties are deterring factors, they answered “one can overcome most difficulties” (T2), and “I do not think that there are insuperable difficulties to do it ... we can make it ... if you want, I can bring tripod and camera with remote control” (T3).

#### *4.2. Digital Storytelling Creation as Educational Class Activity*

The watermill model and scene parts of the original video were also used as the scene for children’s digital stories. According to the educators’ observations, the children were very excited about the watermill model, the characters and all the objects involved in the story. They wanted to hold them in their hands, to examine them and to reconstruct the initial story. For example, they proposed: “let us put the hammer in his hand” (referring to the craftsmen). The children’s intense interest in the model of the watermill was observed all the days the intervention lasted. The watermill model with the characters was placed in an accessible place for toddlers throughout the pedagogical activities period. Children observed it in their free play time: they spun the millstone or the fan, while some opened the small sacks or played with the characters.

Children had very positive response to the call for the photo shooting process. In addition, they showed great dedication and tried to apply the instructions of the educators for the movements of the characters and the handling the stage objects. After watching the videos created in the classroom, children were asked about the implementation process. Almost all of them said that the videos were made using the photos: “they were made from the photos,” “from the photos on the tablet.” When asked what we did with the photos, they said the following: “we joined them,” “they all came in order.” Finally, they all said they would love to do it again.

After the pedagogical activities had been completed, teachers T2 and T3 were asked about their opinion on the digital storytelling creation process. Both teachers answered that they liked it and found it very interesting, and they stated that the children also liked it. In question if the children understood the video creation process, T2 replied: “I think they understood it very well, they saw it in practice, they participated,” and T3 answered “I believe they generally understood the whole process.” Both teachers stated that they are willing to apply the process in the classroom for a pedagogical purpose in the future. T2 stated: “positively yes and we are already preparing a work plan for this,” and T3 stated: “yes, because it combines knowledge and play at the same time.” They described

the children's response for participation in the process as "very good ... very positive" (T2) and "very satisfactory" (T3). About the final product of the digital stories they created with children, T2 replied: "I enjoyed it" and T3 stated: "the result was very rewarding." When asked if the children were impressed by the result, both teachers answered that the children were very excited about their own stories and impressed with the result.

According to the coordinator teacher, the educational activity was completed as planned, without any insuperable problems. It was an interesting and original educational procedure, both for the teachers and the children. The children were really satisfied with the activity, enjoyed the process and were very happy and excited about the result, because it was something new for them to watch a video created by themselves and hear their own voices in the narration. The children responded to the call for the photo shooting process in a very positive way and every child wanted to participate. A remarkable reaction of the children was their disappointment when the educational activity was over, and the watermill model was picked up in order to give it back: "Where are you taking the watermill? Why do you take it? Can't we keep it to play with and take more photos?" This fact shows that the children experienced a pleasant and creative educational experience. Teachers were motivated by the educational activity and they decided to prepare a video and present it as part of a school celebration so that parents would have the opportunity to attend. One difficulty in the implementation of digital stories was that children unintentionally touched the desk with the tablet and changed the photo frame slightly. Fortunately, teachers had marked the original position of the desk and after that they used adhesive tape to stabilize the desk. Another difficulty was to edit audio and imported to videos and the help from an expert was necessary.

## 5. Discussion

Based on the results of the children's interviews, their worksheets and attitude, on the teachers' interviews and on the researcher's observations, the following can be ascertained:

- The preschool children that participated in the study had no knowledge about mills, either watermills or windmills. The only part of the watermill somehow familiar to them was the rotational movement of the mills, possibly having their toys in mind, since they mentioned helicopters and their fans. The children were familiar with flour as a final product and its uses, but they ignored the stages of production and processing.
- All children understood the plot of the digital story and the role each character played. They acquired new knowledge about watermills, the way they operate using the power of water, their use and also about grain processing to make flour. They enriched their knowledge about the potential of digital media to photograph, create and project videos, and understood the basic idea of how to create videos with the stop motion technique.
- The digital storytelling intervention led children acquire knowledge about watermills and their use, working with pleasant and entertaining activities. The learning goals were achieved, concerning the construction of the millstone (as presented in the myth), but also the operation of the mill, its usefulness and the processing of grain. The children's interviews showed that, before the intervention, they ignored all these issues. The current study showed that digital storytelling was an attractive and effective educational tool that gained the interest of children and its value was appreciated by the class educators. It motivated the class to pursue new creative learning goals since it led children to create their own stories, activating their imagination and interest. Finally, it offered the teachers valuable feedback as they said that they were inspired to plan new teaching activities based on digital storytelling.
- According to the teachers' interviews and the researcher's observations, digital storytelling has been an attractive educational tool for preschool children that offered them new knowledge and feedback to create their own drawings. The creation of their own digital stories was also an educational experience that was understood by the children in terms of implementation, to a very satisfactory degree, and at the same time offered them the satisfaction of a creative result. It was

also a pleasant experience that highlighted the value of cooperation and teamwork. It was a very enjoyable and creative activity for the teachers as well. They stated that it worked as feedback and gave them ideas for future educational activities. It is important that the views of teachers converge, a fact that triangulates and strengthens the results of research.

Therefore, and based on the research questions, it is concluded that digital storytelling is an effective educational tool for preschool children that offers knowledge and awareness (research question 1) on function and usability of watermills and their contribution in the sustainable management of natural resources. It motivated preschool children's interest about the cultural asset of watermills, which was totally unknown to them (research question 2). Digital storytelling appeared to be an interesting approach for the potential of mobile digital media to be used in the preschool class for more creative goals, including new skills, since children's contact with technology is limited to watching videos, listening to music and playing games, and inspired the use of similar capabilities of digital technology. It also triggered the enhancement of creativity and imagination and led the children to create digital stories, with the support and guidance of their educators (research question 3). According to the teachers' remarks, digital storytelling creation can be applied to several pedagogical and educational activities and can help to pursue various teaching goals in the class context (research question 4) after familiarization with its techniques.

The current study communicates sustainable development in preschool education through a creative and pleasant educational activity by utilizing the powerful tools, as it was presented in the literature review, of:

- myth and storytelling, which are considered capable to engage young generations, to improve learning, to safeguard and to enhance dissemination of cultural heritage [12,16,17,19,25,31,32]. The selected myth is a local traditional story about watermills, the first invention that utilizes a natural and renewable energy source, the water, and is based on local habitant's narration and on field research [52], and its use is in line with relevant studies [40].
- digital representation and digital storytelling. The digital representation of the myth is based on principles and guidelines of other researches [14,35,43] and it was created using the stop motion technique, a simple and well-known technique that can be used even by children, since it requires no special equipment or expert knowledge, but only minimum guidance. The age appropriate digital representation of the myth attracted children's attention and created a suitable pedagogical context for discussion about the way older generations covered their basic needs with respect to the physical environment and natural resources.
- digital storytelling as an educational tool, which is considered as a basic educational strategy [2] and a suitable and powerful teaching tool [32] that should be an important a basic educational strategy [17,34].
- digital storytelling as a pre-created story that had the role of a valuable guide for students and teachers in creating their own digital stories and confirms the results of other researches [5] that stress that the difficult part for the students-creators was to write the story, and that the use of a video as an example is necessary [5].
- mobile devices, which, according to research findings, are considered a low-cost, simple and effective way to produce, transmit and communicate stories [12,13] popular with preschool children [24].

The current work has common features, but also differences, with other works in the field of cultural heritage and education presented in Section 2. For example, the use of digital storytelling as a means to preserve local cultural heritage constitutes a common element with the aim of some [26,38–41] studies. As in CrowdMemo [26], mobile phones and low-cost cameras were used. On the contrary, CrowdMemo engaged students aged 6 to 12, while the current study involved preschool students of average age 4 years. Also, in the CrowdMemo, the stories the students created were documentaries based on interviews of elderly people narrating their personal memories, while in the current

study, students created their own new stories, the “funny” and the “good” story, which reflect the children’s character and their sensitivity to the major global problem of poverty/hunger. Respectively, in ShadowStory [39], traditional myths were used as a source of inspiration for students’ stories, whereas in the current work a local myth and its representation served as an example and as a source of inspiration for the creation of new stories by students. However, ShadowStory was tested by students of a primary school and not by preschool students of average age 4 years of the current study. In the educational field, more applications have been developed for other educational levels than the level of preschool that the current work aims at; however, the multiple benefits for teachers and students are a common point. In particular, the current research confirms the results of [33] about using storytelling in early childhood education, where teachers found digital storytelling effective and provided an opportunity for change in their practice and use of technology in teaching. Additionally, the current study made use of tablet, confirming the results of [44] that tablets help students to be more active and to change their view about how mobile devices can be used.

The current study highlights the potential of digital storytelling and mobile technology in the learning process and provides an example of a creative and pleasant educational activity, able to effectively engage the preschool students and teachers, a critical part of educational community, and to draw their attention towards local cultural heritage and sustainable development. This example was implemented without funding, without the use of specialized equipment and without the use of complex techniques. Instead, it used simple devices and techniques and simple materials, which are used in the everyday educational process, such as paper, decorative objects and toys. Even the model of the watermill was produced by a high school student work. However, the most important contributor was the acceptance and positive attitude of teachers and students. Therefore, the current work constitutes an example that can be applied in all educational levels for the implementation of similar activities by teachers and students.

## 6. Conclusions/Future Work

The aim of the current research was to present an example of the potential of digital storytelling and mobile technology by using low-cost devices and applying simple techniques in preschool education. In this example, the intangible cultural heritage of the watermills was chosen as the theme, and specifically a local myth was selected, in order to enhance the interpretation and communication of the specific cultural asset and to raise awareness of preschool students on sustainability issues through the practices of old generations.

Regarding the research questions, it was found that digital storytelling is an effective educational tool to the acquisition of new knowledge and motivation of preschool children’s interest about tradition, local cultural assets and sustainability issues. The age-appropriate digital representation of the myth attracted children’s attention and created a suitable pedagogical context for discussion about the way older generations covered their basic needs with respect to the physical environment and natural resources. On the other hand, the production of digital storytelling is feasible in a class context and teachers proved their positive attitude through their collaboration, creative work and statements that any difficulty can be overcome.

In accordance with the findings of other studies, the educational intervention offered valuable affective, cognitive and conceptual outcomes [4] and promoted important pedagogical attributes such as collaborative learning, creativity and innovation, multiple representations, motivation, cognitive effort, feedback, etc. [31–33]. It also enhanced various skills including visual literacy, technology literacy and information literacy [43] and especially the characteristics of creativity and imagination. Finally, it offered knowledge and experience, elements that are considered as the raw material of creativity and as one of the basic characteristics of the citizen of the 21st century [2].

In addition, the research showed the students’ positive attitude towards a cultural asset unknown to them and towards the digital representation of an unknown myth, as well as their sensitivity to the problems of hunger and poverty as reflected in one of their stories. The children collaborated creatively

with each other and with the teachers, participated in the activities with interest and dedication and enjoyed the creation of their own stories and all the other activities. In particular, the fact that on any occasion, such as during the break or in the free time between activities, they wondered about the model of the watermill and they expressed the desire to continue the photography after the pedagogical intervention was completed and the model was removed, show their pleasure and satisfaction. We can therefore conclude that the degree of acceptance by children was high, which confirms similar conclusions of other research [33].

The digital representation of the myth and students' stories were created using a simple stop motion technique, with no specialized equipment and with a scenery set made of simple materials, having as its main component a watermill model created for a high school project. This fact allows us to believe that the implementation of similar representations is feasible in the context of school activities, especially in project-based courses, where development of creativity and cooperation of students and educators are important goals. Harnessing a tablet's capabilities has proven to be an effective, easy, affordable and low-cost solution that demonstrates the capabilities of mobile devices and provides an example of efficient and proper use of mobile devices and digital technology [31]. The decisive role, the positive attitude of the teachers and their intention to overcome any difficulty is remarkable and are elements that confirm similar results [33].

The current study demonstrates the potential of digital storytelling and mobile devices in preschool education. The results of the study indicate that the applied methodology can be an example of proper and effective use of mobile technology in education. These findings are in line with other research results, and the main contribution of this work is that it demonstrates that the positive effects are also possible in the preschool age in the appropriate teaching context. Future work could focus on implementation of the presented educational methodology in a larger sample of preschool children in order to verify the results of the current work. Another point of future work could be the further analysis of the children's drawings, since they reflect the learning outcome of the educational intervention. Future research could study the effectiveness of the methodology in other educational levels and its acceptance by students and teachers. Additionally, in the context of non-formal education, future work could focus on applying digital storytelling in order to raise the community's awareness and appreciation of local cultural heritage and its important role in sustainability.

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## Appendix A

List of questions to children in class group interview

Before displaying the video of myth's representation

1. Do you know what a watermill is? If yes, have you ever visited one? If no, can you think or imagine what a watermill might be?
2. Do you know what a windmill is? If yes, have you ever visited one? If no, can you think or imagine what a watermill might be?
3. Do you know how flour is made? What is it used for?
4. Would you like to watch a video about a story for watermills?

After displaying the video of myth's representation

5. Did you like the video?
6. What did the miller collect with the shovel?



7. What was the craftsman's problem?
8. Who helped the craftsman?
9. What do you believe about the goblin, was it good or bad?
10. What did craftsman insert among the stones?
11. Why did he do that?
12. What is a watermill? What does it do?
13. Would you like to create your own video—digital story?

After the digital stories' creation

14. How did we create the videos?
15. What did we do with the photos?
16. Would like to make digital stories again?

List of questions to individual children.

Questions 17, 18, 19 and 20 are the same as questions 8, 9, 10 and 12 and were purposefully repeated in the individual interviews in order to find out what the children understood about the myth

17. Who helped the craftsman? (same question with 8)
18. What do you believe about the goblin, was it good or bad? (same question with 9)
19. What did craftsman insert among the stones? (same question with 10)
20. What is a watermill? what does it do? (same question with 12)
21. What did you like most of all and would like to draw?

List of questions to teachers

After displaying the video of myth's representation

1. Did you like the video?
2. Did the children understand the myth?
3. What is your opinion about the educational value of the presented video?
4. What is your opinion about creating our own digital stories with the children?
5. Do you believe that these are some possible difficulties and deterring factors?

After the digital stories' creation

6. What is your opinion on the digital storytelling creation process?
7. Do you believe that children liked it?
8. Did children understand the video creation process?
9. How will you describe children's response for participation?
10. Would you apply the same process for a pedagogical purpose in the future?
11. What is your opinion about the digital stories we created with children?
12. Do you think the children were impressed by their stories?

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