Towards Better Understanding of Ancient Civilizations by Storytelling and Gaming

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Abstract – **The new strategies for teaching and learning point to the investigation and the deployment of workable learning methods and scenarios for better understanding of the learning content and engagement learners in more active participation during the perception of knowledge. This paper presents a new learning approach for studying the ancient history and civilization and the Thracian civilization in particular, by storytelling and serious game combination.**

Keywords – **Storytelling, Serious Games, Gamification, Ancient Thracian Civilization, Improved Knowledge Understanding.**

1. Introduction

The technological growth gives innovative learning tools to the teachers and the possibility to deploy new learning approaches for deeper understanding and farther creative usage of the learning content. These tools aim to engage the learners in more active participation during the perception of knowledge. Good educational results are achieved by storytelling, understanding-by-design, serious educational games, game components, learning-by-authoring, and/or any combinations of them, when the specific learner's

needs and wishes are kept in mind and different digital resources (*viz.* cultural, historical, encyclopedic, *etc.*) are contextually used for the target learning purposes.

Having in mind the high school learners' needs and features, the educational requirements and the current teaching practices, during this research authors started a long-term consideration of teaching strategies that could improve the current Bulgarian classroom experience. The key is looked out innovative pedagogical methods with real involvement of the technologies in the learning process [1].

Our specific task is to produce an educational "design" plan unfolding current teaching and studying practices in the Humanities sciences, a studied discipline with excessive quantity of facts with vague logic often leading to misunderstanding. Moreover, the proposed solution has to be easy transferable to a similar or dissimilar domain.

In this paper, we propose a new learning approach for better understanding of ancient history and civilization, and in particular, the Thracian civilization, by storytelling and serious game combination. Section 2 of the paper is a short presentation of the "digital storytelling" learning method, which successfully helps instructors to motivate the students to learn, to provoke their curiosity, to increase their interest in the subject. The next section makes and overview of "serious games" and their power to seek creative and logical thought, problem-solving, as well as develop a variety of skills and competencies to the learner. Section 4 provides details for the proposed approach and its design, mainly with respect to target learning aims and expected outcomes. The paper ends with some conclusions and further development plans.

2. Digital storytelling. Educational applications

Digital storytelling is the practice of using digital technologies to tell a short story [2]. Like traditional narratives, digital stories focus on a subject and feature a particular point of view. What distinguishes digital storytelling is inclusion of digital images, text,

audio narration, moving image (video), and music. These multimedia stories tend to be short (2-10 minutes), personalized reflections which use still pictures or videos of personal artefacts to create short evocative stories. Such digital narratives are an extension of traditional storytelling, providing engaging stories which can be shared within social/leaning communities.

Digital Storytelling is employed in a range of contexts and for a variety of purposes: self-awareness or discovery; narrative (knowledge management) in businesses; facilitating group understanding; engagement of marginalized sections of society; subject learning and development of subject, cultural or societal resources [3] [4] [5]. The digital story genre is perhaps most frequently associated with the telling of personal stories, often of cultural or historical importance to the author [6]. Such stories often focus on interesting experiences, memories of some past event or person or personal journeys to overcome challenges or achieve goals [3]. [2] identifies two other types of digital story – one that informs or instructs and one which examines historical events. Arguably, digital storytelling could equally be used to examine social environments or political issues. Thinking more generally about the purpose of digital stories, it might be useful to categorize the stories as 'personal' stories, informative 'stories', exploring/analysis 'stories' as well as 'stories' as part of or based on historical facts. We will focus on the last type aiming to improve knowledge understanding and to make and educational application of digital storytelling.

[7] argues that classroom practice that combines use of digital media with the art of story – leveraging both the skills and preferences of digital age students and the inherent human interest in story – is a potentially powerful pedagogy. Digital storytelling can be used to engage, inform, explore and transform, and thereby lends itself to educational contexts. Indeed, as shown by Yuksel et al.'s [8] world-wide survey investigating the use of digital storytelling to support learning, digital storytelling is used in educational contexts not only to develop subject area knowledge, writing skills, technical skills, and presentation skills, but additionally reflection, language, higher level thinking, social, and artistic skills are also developed.

Digital storytelling, when well-conceived and executed, provides an engaging and powerful account of a 'story' – be it informative, imaginative or reflective. While any well-formed story should achieve this, the integrated visual and audio nature of digital storytelling is particularly potent to generations who have grown up in a social and multi-media world. The nature of the engagement goes beyond mere entertainment, although the value of fun

in educational contexts is not to be underrated; using digital storytelling in the curriculum can afford real educational advantages [5]. Firstly, the multi-media nature makes the content of the digital narrative more accessible to technology-centric students, many of whom are alienated from traditional textual forms [9]. Secondly, as researchers such as Burmark [11] have shown, the combination of text integrated with visual images enhances student understanding. The visual component, especially where of a personal nature, helps situate the story within a recognizable context. According to Bruner's theory of situated cognition, this increases the time that students are able to retain and understand information [7] as well as enabling students to better organize information into manageable chunks. Thirdly, the multimedia nature of digital stories encourages active listening.

The stronger educational benefits could arise when students become involved as active learners in the authorship of digital stories. Creating their own digital stories, whether personal, informative or imaginative, requires the student to engage with the structure of storytelling. In developing the story, students must understand the basics of narrative structure as well as grammar. For example, students will need to consider dramatic tension, pacing and narrative flow. Further, as [10] advocates, authoring of digital stories provides a powerful opportunity for students to develop critical media skills.

3. Serious games features

In technology-enhanced education, the "serious games" method is accepted as a research, pedagogic, and evaluative tool [12]. The students involved in the game must use different skills, competences, and experience to solve the mini games and reach the end.

For the first time Abt introduces the term "serious game" as he describes the utilization of situations in and outside the class room in his book "Serious games" [13]. He describes "serious game" as a "game having explicit and carefully crystalized educational purpose, as the main goal is not entertainment". Serious games can elicit significant engagement from learners and further contribute to the effectiveness of the learning process. With high levels of personalization and adaptability, education based on serious games generates good levels of comprehension and unconscious processing of content of relatively great difficulty. This approach is realized successfully in the development of contemporary e-learning with high degrees of interactivity, personalization, and adaptability with respect to learners. For example, the integration of ICT in the 6th- and 7th-grade ancient history curriculum would allow – by means of game playing, interactive interface, visualization, video, and

animation – to present the material in a fun and accessible way [15]. This integration will make it easier to explain connections, relationships, and influences among ancient civilizations; to demonstrate the continuity of ideas, despite the demise of entire peoples (nations?), and will improve the students understanding of the evolution of civilization. Serious games play an important role in providing the young learners with orientational literacy and an ability to apply their knowledge in activities different from those practiced at school [14].

Main research questions that have to be addressed are: How to activate and stimulate learning through games? How games can increase motivation, engagement, and improved learning outcomes? How to enhance comprehension of content through the use of subtle or invisible modern-day methods that students would both accept and welcome? What problems students would find interesting and attractive and how these problems can provoke the desire to learn new things and how the game could be in favor of this? Looking for the adequate solutions, we made our best to find the appropriate combination of storytelling and game that could make the learning content interesting and desirable for the students [16].

4. Combining storytelling and serious game for better Thracian history study

The proposed combining of storytelling and serious games for a better study of the Thracian history and civilization is the base of *the following learning scenario*:

Established Goals: To learn the concepts, facts and specifics for the Thracian civilization, focusing on the lifestyle, beliefs and traditions of this ancient people living on the Balkan Peninsula.

The content of the Thracian story:

The first part of the story is related to the Thracian tribes, their nature and costumes, traditions, manners, different areas of high achievements, place of habitation, *etc.*

The second part of the story presents Tomb traditions and rituals of the Thracians and their beliefs for the life after death.

The third part presents the military power of these glorious ancient wars.

The fourth part is dedicated to the Heroon building that honors the memory of a deity ruler, a prophet hero, who restores harmony in the tribe when an annual ritual is performed in his honor. This is the very key for the Thracians because some of their tribes used to immortalize their rulers, priests and heroes and worshiped them as demigods.

The fifth part of the story presents treasures, feasts and abundance that accompany the everyday life of the Thracian kings and their deputies. This ancient civilization was glorified with its vast handmade and unique riches.

The last part of the story reveals the mysteries around the Thracian gods that were worshiped at that time.

The data and facts provided in the story derive from ancient documents, architecture, artefacts found during archaeological excavations, and from scholarly research by Bulgarian specialists.

The story is told through a serious game representing a labyrinth of rooms. The game will take you through the rooms of the building uncovered beneath the Ostrusha Mound, located in the Valley of the Thracian Kings near the city of Kazanlak. All of the objects, drawings and reliefs are real and were discovered at the time of the archaeological excavations made by scientists. Their position in the building's rooms is the creative decision of the team who prepared the story and the game, but the main purpose is to tell the Thracian story in the most realistic way. A great number of educational mini-games are available; completing them successfully will allow you to visit the next chamber of the building.

The Thracian game scenario: There are six rooms through which you need to pass: "Thrace", "Tomb" (picture 1), "Armoury", "Heroon" (a temple to an immortalized tribal chief, priest, or hero), "Treasury" and "Sanctuary". In order to enter the sixth and final room, "Sanctuary," you need to visit the other five, successfully complete all of the games and receive pieces of Thracian treasure as prizes.

Figure 1. Walls in the Tomb chamber of the Thracians game

The technological implementation of the storytelling&game solution is done by the team from the Institute for Computer Science and Control, Hungarian Academy of Sciences (MTA SZTAKI) under the joint project "Development of Software Systems for Multimedia and Language Technologies" of Institute of Mathematics and Informatics, Bulgarian Academy of Sciences and MTA SZTAKI. MTA SZTAKI team developed a special tool for multilingual and multi-platform game development, management, and presentation [14].

The authors in collaboration with history instructor-pedagogues, verified the pedagogic and

methodological relevance of the approach and gave their feedback on the Thracian serious game and story, which are technologically developed during the project "Serious Games as Contemporary Tools for New Educational Applications" Contract DSD-2/05.04.2017 between Bulgarian Academy of Sciences and the Institute of Mathematics and Informatics, Activity "Introduction of Contemporary Methods in Educating and Fostering Young Talent" (PMC №347).

5. Conclusion

The proposed approach aims to give opportunities for creation of a more effective and engaging learning process involving students in active knowledge observation. The tests conducted in Secondary schools in Sofia among students of age 10-13 show great interest towards the storytelling & game solution that introduced to them the Thracian culture and civilization in this new to the Bulgarian education system method. For the first time instead of reading the textbook they study by playing. The successful results encourage us to think about another educational storytelling & gaming resource connected with the Bulgarian civilizations, part of Bulgarian ancient and medieval history. In combination with the appropriate content and story, serious games become an important modern-day educational tool, which reflects both the current state of technology and the learners' social profiles [17].

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