Workshop on Serious Games and their Educational Applications

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Abstract. The workshop on *Serious Games and their Educational Applications* presents outcomes of the National Scientific Program "*Cultural and Historical Heritage, National Memory and Social Developmen*t", funded by the Ministry of Education and Science (approved by DCM No 577 of 17 August 2018), achieved during the first year under the Work Package No. 4 "Activities for the Development of Scientific and Scientific-Applied Products" (Activity "Digitization and virtualization of cultural heritage"). The workshop outlines also some future trends for educational applications of serious games.

Keywords: Serious Games, Gamification, Educational Application, Cultural Heritage.

1 Introduction

Innovative educational approaches in the 21st century are strongly and positively influenced by the development of modern information and communication technologies in education. They must respond to the challenges that the new generation of students placed in front of the educational process. Digital technologies, developed in recent years, are introducing new solutions for the documentation, maintenance and distribution of vast quantities of collected material, which can also be used in training. One of the guidelines and the search for solutions to create widely available models and tools for contextual use of digital resources for educational use, is through serious educational games.

The *Workshop on Serious Games and their Educational Applications* presents research results of the National Scientific Program "Cultural and Historical Heritage, National Memory and Social Development", funded by the Ministry of Education and Science, achieved during the first year under the Work Package No. 4 "Activities for the Development of Scientific and Scientific-Applied Products", Activity "Digitization and virtualization of cultural heritage" (Task "Serious online games" and Task "Virtual museums and galleries"). The focus is on research and conceptual modeling of e-learning tools for national history and culture through interactive serious online games - game strategies, design, content, gameplay models and player interaction with learning

content, *etc*. The attention is given to the role of serious games in attracting young people's interest in national cultural and historical heritage, modeling access services for people with visual impairments, providing open access to digitized national cultural and scientific heritage, and pursuing sustainable policies for its continued digital storage and preservation.

The main objectives of the National Scientific Program *Cultural and Historical Heritage, National Memory and Social Development* is the creation of a modern and sustainably supported research infrastructure, are in the focus of the first presentation. The latest developments and achievements of the scientific field of Cultural and Historical Heritage and National Identity of the Bulgarian Academy of Sciences (BAS) for digitization and preservation of the Bulgarian cultural and historical heritage by using transdisciplinary approaches, are discussed.

The role of the educational multimedia games to build lasting interest among young people in the cultural and historical heritage is also one of the main points of the discussions on the workshop. Young people who, from a very early age, use a computer or tablet and are strong supporters of computer games, can be successfully inspired using that same technologies to love and preserve the cultural and historical heritage of the country.

A discussion on the most significant challenges in the design and adoption of edutainment games in intangible cultural heritage field, is planned.

Innovative approach to the presentation of cultural heritage in the game module for people with visual disabilities are also in the focus of the workshop.

A solution for intelligent data curation that can be implemented in a virtual museum in order to provide opportunity to observe the valuable historical specimens in a proper way, is discussed.