

Towards Models and Tools to Increase and Customize Visitors' Experiences in a Digital Cultural Content Management System

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Abstract. The current project is aimed at seeking new knowledge and achieving scientific results in the field of visitor experiences, visualization techniques, eLearning, storytelling, and serious games / gamification. The aim will be achieved through the use of scientific and research approaches and methodology in the field of ICT and informatics. Project results are models and tools for contextual use of digital cultural resources for learning purposes with support and customization of user experiences in digital systems and repositories.

Keywords: Information and Communication Technologies (ICT), Visitor Experiences, Storytelling, Technology-supported Learning, Cultural and Historical Heritage.

1 Introduction

In recent years, research into contextual (semantic-oriented) use of digitized cultural content has become topical. For greater adaptability to the needs of users, often used are serious educational games, game components, storytelling, and combinations of them (Bontchev, Paneva-Marinova, & Draganov, 2016).

A digital content management system is an information system providing tools and capabilities for creating digital content, managing collaborative work on it, storing, controlling access, publishing, providing information in a user-friendly manner, etc. (cataloging, storage, annotation, retrieval and distribution) (Draganov, et al., 2015) (Luchev, et al., 2016). Digital Cultural Content Management Systems (DCCMS) could be digital libraries with multimedia cultural content, digital collections, repositories, related to Bulgarian history and culture, and various digital cultural resources. These systems rarely offer personalized visitor experiences, but it has great potential thanks to the possibilities of free choice of place of use, flexibility in management, choice of time and speed of data acquisition, self-controlled use, problem solving, adaptability and personalization (Paneva-Marinova, Goynov, & Luchev, 2017). On the other hand, storytelling is a technology for telling a short story by combining a narrative with a picture (static, film, animation), there can be music, sound is always an engaging and highly influential method of transmission of idea, thought and message (Slavova-Petkova, Dimova, & Luchev, 2016).

The significance of the research problem in the context of cultural heritage is emphasized by the provocation of interest in culture and history, building of cultural skills and support training in the humanitarian spheres through modern technologies and methods.

2 Project Description

The project aims to search new knowledge and achieve scientific results in the field of: visitor experiences, visualization techniques, storytelling, eLearning, serious games/gamification, etc. The aim is to develop models and tools for contextual use of digital cultural resources for learning purposes by supporting and customizing the user experiences in digital systems and repositories.

The goal will be achieved by:

- Exploring approaches, tools and methods for personalizing visitor experiences in a digital cultural content management systems (DCCMS);
- Exploring the world-wide research achievements in the field of storytelling and its application in the context of cultural and historical heritage;
- Building models and tools to increase and personalize visitor experiences in a digital content management system using storytelling and game components in learning resource.

The main hypothesis of the research is that in the process of exploiting DCCMS and its resources the personalization of visitors' experiences (user experiences) will allow for a better and more effective perception of the knowledge. The aim is to achieve the user satisfaction with the experiences, the feeling of accessibility of the set cognitive tasks/goals, the benefits and the effect of using the digital services, immersion in the presented information environment, motivation to continue using the resources, receiving an emotional experiences, etc.

In order to achieve the main objective and prove the hypothesis in the project, research and development approaches will be used in the field of ICT, education and additional related scientific fields (history, cultural and historical heritage, ethnography, etc.). The research methods and techniques used in this project are based on the standard methodology adopted by computer science and ICT and suggest that the tools created will be reusable, flexible and extensible. The research methods and techniques in the project take into account the exceptional dynamics of the field's development and its interdisciplinarity.

Expected results of the research are to develop models and tools for contextual use of digital cultural resources with customization and user-oriented adaptation to help acquire and absorb knowledge and skills.

3 Phases of the Project

Modeling tools to increase and personalize the experiences of visitors in a digital content management system using storytelling and game components.

This phase includes research on national and world-wide research on personalizing visitor experiences in a digital cultural content management system. Methodological aspects of using the story telling method to influence customization of the user experiences are explored. An educational resource model is built to increase and personalize the visitor experiences in a digital cultural content management system or digital repository.

Software design and building an educational tool to increase and personalize visitor experiences in a digital cultural content management system.

During the implementation of the phase activities, a prototype of an educational resource will be developed to increase and personalize the visitor experiences in a digital cultural content management system. Pre-selected multimedia / cultural and historical resources will be used. Experimental applications of the developed resource are planned in a real learning environment and a specifically selected target group.

Dissemination and publication of project results.

Scientific and public circles are going to be informed about the project's implementation with reports and publications.

4 Conclusions

Stories provide a memorable, compelling format for transferring information and discoveries, this is an "expert system" for remembering and integrating what we learn. In the same way, digital storytelling has become a common technique in e-Learning as a powerful method that can be helpful in improving user experiences in digital content management system or serious game.

Acknowledgements

This work is partly funded by Bulgarian NSF under the research project No. DN02/06/15.12.2016 "Concepts and Models for Innovation Ecosystems of Digital Cultural Assets", WP2: Creating models and tools for improved use, research and delivery of digital cultural resources, Task 2.2. Research, adaptation and application of tools for context-dependent use of digital cultural resources by digital culture eco-systems (for training purposes) (CultEcoSys-Project, 2017) and by Bulgarian Academy of Sciences under the research project No. DFNP-17-31/25.07.2017 "Models and Tools to Increase

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Received: June 15, 2017

Reviewed: June 30, 2017

Final Accepted: July 05, 2017