

Mile Jovanov,
Nevena Ackovska,
Smile Markovski
(Institute of Informatics,
Faculty of Natural Sciences and Mathematics,
Skopje, Macedonia)

EDUCATIONAL ASPECTS OF DIGITIZATION OF NATIONAL HERITAGE

Abstract: We present the role of the Center for Digitization of National Heritage (CDNH) in the educational process at the Institute of Informatics, FSNM, Skopje. CDNH acts as a bridge between the cultural institutions in Macedonia and the students taking the Multimedia course at the Institute of Informatics. The results show that the presented approach is highly motivating for the students.

Key words: digitization, CDNH Macedonia, education, educational motivation

1. Introduction

The Digitization of national heritage is a process concerning several aspects. One very important aspect is the digital presentation of the cultural heritage elements. When using digital presentation, in order to complete the goal, one needs to use different multimedia technologies. Part of these technologies include sound processing and generating, creating and processing of photos, generating, processing and producing of videos, creating 3D visualizations and animations, as well as their integration in a final product, in order to achieve appropriate presentation and means of easy distribution.

These technologies, which are extremely important for the digital presentation of the national heritage, can be learned in the most of the Multimedia courses included in the Information technologies or Computer Science studies.

2. Syllabus of Multimedia course

Tutorials of the Multimedia course [5] organized at Institute of Informatics, at the Faculty of Natural Sciences and Mathematics in Skopje, Macedonia, consists of four main parts:

- 2D Graphics
- 3D Graphics
- Sound
- Macromedia Flash

Software products for raster as well as vector graphics processing and generating are included in the part 2D Graphics of the Multimedia course. The software product “GIMP” is studied in order to utilize its usage in raster graphics processing. The students were taught to work with the software product CorelDRAW as vector graphic editor.

The part of this course that covers the 3D graphics gives the students opportunity to study the software product Maya which offers enormous opportunities for 3D modeling and

animation. The software product “VirtualDub” as tool for video capture and linear processing was also introduced.

The part of the course where Sound is thought includes 3 parts: “Audacity” - software product for sound processing, “Anvil Studio” as software for sound generation, and MIDI programming.

The fourth part of the Multimedia Practicum studies the software package Macromedia Flash and Action Script as part of it, as an integrative tool which enables production of dynamic, web oriented contents. Additional efforts were made to demonstrate the students its feasibility in web page editing, and panorama making.

3. CDNH activities

The Center for Digitization of National Heritage (CDNH) at the Institute of Informatics was officially opened at March 1, 2005. CDNH activities are focused toward development of a digitized presentation of the national heritage of Macedonia via the following activities: building a web portal of the CDNH [1], producing application programs and programming tools for national heritage presentation [2, 3], organizing seminars, workshops and conferences [4], involving new teaching materials in student’s education at Institute of Informatics [5], etc.

4. The bridge between the education and the cultural institutions

The digital presentation of the national heritage of one country incorporates the usage of the previously mentioned technologies. This enables the students to apply their knowledge of multimedia technologies in generating projects in this particularly modern and very attractive

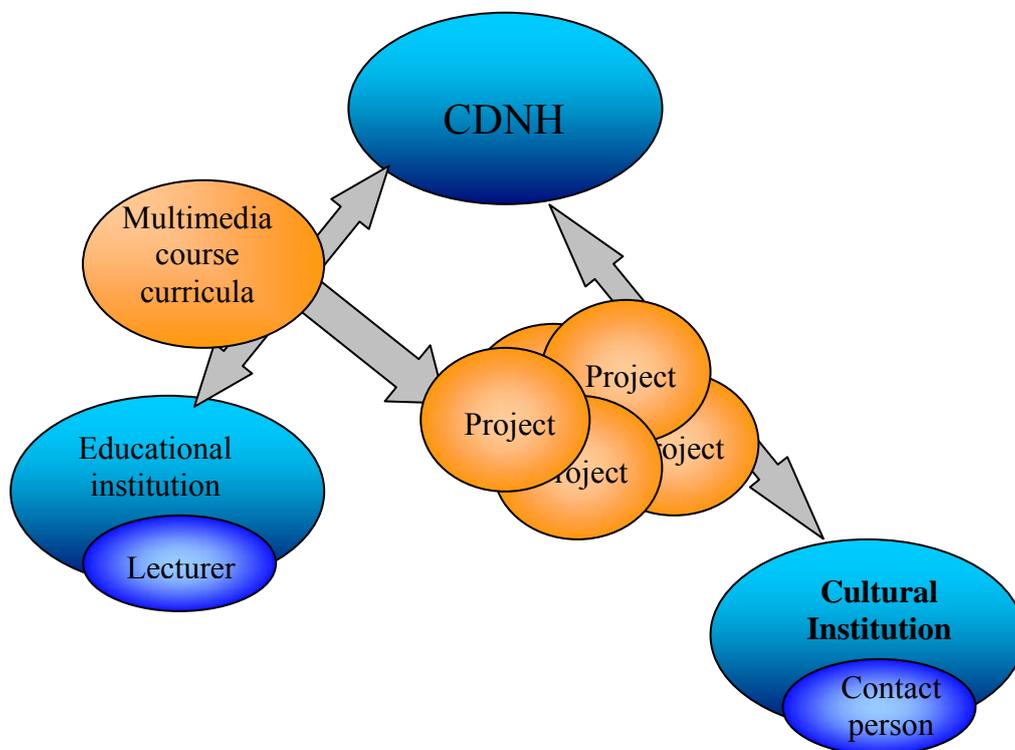


Fig. 1. CDNH – bridge between education and culture

area. The projects include presentations of very important segments of Macedonian national heritage. They were created as part of collaboration between the Center of digitization of National Heritage of Macedonia (CDNH) at the Institute of Informatics, and the students taking the Multimedia course. The role of CDNH is to communicate with the relevant institutions involved in the conservation of Macedonian national heritage, to understand the needs of these institutions, to prepare action plan for the forthcoming activities and projects, and to complete those projects. These activities include the creation of various digital presentations, their integration in web pages for Internet presentations and as part of CD presentations. On the other hand, CDNH in the collaboration with the management of the Multimedia course obtains great number of digitized content ready to use for other impending projects. The role of CDNH as a bridge between the educational process at the Institute of Informatics, and the cultural institutions in Macedonia, is shown in Fig.1.

5. Case study

The project “Ubavinite na Matka” (“Matka Beauties”) included presentation of three monasteries in the Matka region, near Skopje. All material for presentation, produced by students, was assembled in web site developed using Flash technology. (Fig. 2)

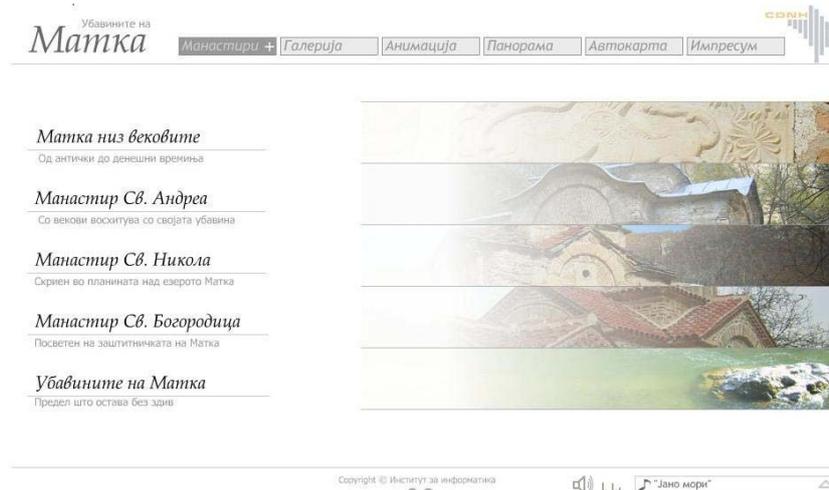


Fig. 2. The home page of the project “Ubavinite na Matka”



Fig. 3. Part of the picture gallery of the project “Ubavinite na Matka”

Among the materials included in the project there were rich picture galleries that present the monasteries, shown in Fig.3. Also, 3D models of all monasteries were made giving the full understanding of their architecture (Fig. 4).



Fig. 4. 3D model of one of the monasteries in the Matka region

The region was shown using panorama views, too (Fig. 5).



Fig. 5. Panorama view of one of the Matka's monasteries

Sound effects and music are played, while browsing the site.

During the making of the project students demonstrated knowledge of all of the studied technologies taught in the Multimedia course.

6. Results

This approach in teaching Multimedia course enables the students to create part of the projects that are incorporated in the official digital presentation of the national heritage of Republic of Macedonia. The idea that their work is presented to broader Macedonian community motivates them to achieve their maximal potentials, both in qualitative as well as in the quantitative aspect of the project creation.

In order to enable wide domain of the work for the students, there are no limitations about the subject and the outlook of the projects. This gives the students opportunity to express their own creativity. As a result, there are projects with different thematic, but more interesting, there are lot of different ways of presentation. The students usually discover how to use the same technique in a different manner in order to produce an original project.

Learning Multimedia through these types of practical projects is very useful and productive for the students. The students work in teams and they learn how to work together with other people. In addition, they are taking their first steps toward project management. These kind of multidisciplinary projects give them the opportunity to communicate with people of different fields and our students have chance to work together with people from the culture community. It is obvious that the students are interested in this course. They try to learn as much as possible, and after finishing the course they have enough practical knowledge in multimedia area. In our experience, the students don't find the learning techniques difficult to learn. Even more, it proves that the team work, the preparation of the project and the necessary communication are more difficult for them.

7. Conclusion

The digital presentation of national heritage offers enormous opportunities in application of the students' skills acquired in the course of Multimedia. It is evident that due to the fact that these projects are available to broader public through their web accessibility, the students are highly motivated to create more interesting presentations. The motivation itself leads the students to global understanding of the multimedia technologies and a desire to master all of the software products taught in the Multimedia course.

Also, through this type of projects, the students have an opportunity to feel the real team spirit, field project qualities and problems, managing the time and resources, and communication with authorities and people from the cultural and historical community of the Republic of Macedonia.

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