Design for Multimedia Art and Engineering Education: Problem Oriented Approach

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ABSTRACT

By developing a syllabus of The International Master’s Degree in multiMEDIA – technology, design, and management we have found that the problem-oriented approach for syllabus definition appears to be an efficient tool to ensure the expected by the industry requirements for multimedia art and engineering curriculum. The idea of multidisciplinary team training run by the Warsaw institutions, namely, the University of Technology, Fryderyk Chopin University of Music and Academy of Fine Arts is to ensure cross-field education at the technologically and artistically competitive level and to form up the teams ready to function at the commercial market. The software tools used by designing the syllabus (Word -> mRST -> LaTeX -> PDF) made the transition from the project descriptions (in Word) to the final syllabus document (in PDF), semiautomatic. Based on the themes extracted from the projects by a Python application the electronic textbooks have been written for TiddlyWiki5 web platform.

KEYWORDS

Art and Engineering, Digital Multimedia, Problem Oriented Approach, Syllabus Design, Warsaw

INTRODUCTION

The worldwide expansion of creative industry entails high demand for specialists qualified in the field of multimedia art and engineering. In response to this need, we have developed a syllabus of *The International Master’s Degree in multiMEDIA – technology, design, and management* (IMDM project supported by the EEA and Norway grants, number: PL 10-0034). The goal of this paper is to present the ongoing educational work and the computer techniques used while developing the IMDM syllabus. The problem we faced was to how effectively design a project oriented, multidisciplinary syllabus that would cover the scope of knowledge relevant to each study module involved.

The content of any syllabus should be aware of industrial context, which determines the profile of graduates of this domain of study. Therefore, in this introduction we present observations on the long-term development of creative industry, which should offer employment for our prospective students, now and in the near future. Moreover, we analyse multimedia art as an information system comprising of manifold processes involving various activities of people.
Creative Industry – European Perspective

The main trust of the European Union Strategy Europe 2020 is the emphasis on the research and development. Within its framework the creative industry seems a necessary stimulus of the innovative ideas and initiatives both in Poland and in Europe.

Recently, the European creative industry exhibits the high potential of growth:

- Creative industry employs 3.8% of all EU workers while its share in GNP is about 4.5%. It means it provides 8.5 million workplaces;
- Creative branches have grown in time of the recent economic crisis more than average rate of growth;
- Creative industry offers its services and pieces of art for most of other industrial branches – c.f. Figure 1;
- In Poland creative industry share in GNP is about 3% and its added value is comparable to such important areas as agriculture, information and communication and health. Interestingly, its added value is higher than for the gastronomy industry. There are about 175 thousand of business entities operating in this area. In 2009-2013 the growth of creative business entities exceeded 21% while in the whole Polish economy this index was about 2.1%. In the area of programming and computer games development, the above index is higher than 50%.

The above analysis indicates the high potential of creative industry especially in its segment based on the digital technology. This technology seems an engine that drives development of multimedia understood as design and production techniques as well as the art and product containers.

Figure 1. Multimedia art as the information system. The processes 1-7 are described in the point B of this division [JN].
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