Partial Solution for a Problem of Developing a Large Number of eLearning Resources

Zoran Putnik, University of Novi Sad, Faculty of Sciences, Department of Mathematics and Informatics, Novi Sad, Serbia
Mirjana Ivanović, University of Novi Sad, Faculty of Sciences, Department of Mathematics and Informatics, Novi Sad, Serbia
Zoran Budimac, University of Novi Sad, Faculty of Sciences, Department of Mathematics and Informatics, Novi Sad, Serbia
Klaus Bothe, Institute of Informatics, Humboldt University Berlin, Berlin, Germany

ABSTRACT

Through a careful organization of a teaching curriculum at their Department, the authors managed to organize nice and fruitful cooperation with their students in the eLearning area. In particular, what they find as the most positive result is the fact that an excellent cooperation between students and lecturers was developed. This cooperation lead to creation of digital learning objects by the students, as a result of the requirements for passing an exam dealing with eLearning. The authors’ experience is limited to the students of the computer science study program, since only a small number of students of other study programs elected this course, but the number of students they observed is large enough for qualitative conclusions. Based on a static teaching material, students developed several types of eLearning resources for various subjects, not restricted to computer science courses. Developed materials (usually) required some additional work to make them fully usable as a part of university courses. Still, generally, all of the technical work was performed, a large part of texts, images, assessment questions, and other learning objects were created, and resources typically were very usable after some additional polishing. Yet, what is probably of even a greater value is the fact that the authors managed to join several important things within this one course. First of all, and probably the most important, students were introduced to principles and methodology of eLearning in some real situation, preparing some practically usable material, thus being able to see all of the problems they might encounter in the future. Secondary, as a result, the authors received a lot of draft versions of teaching materials to improve it further, thus relaxing efforts for eLearning material creation. Finally, the most creative part of the result is the fact that these resources introduced the authors to different, sometimes rather interesting views on problems and materials in question, or on teaching methodology. Essentially it offers them new ideas, notions, and concepts to work with.

KEYWORDS
Distance Learning, eCourse Development, eLearning Resources, Joint Development of Teaching Resources, Learning Objects, Teaching Resources Creation

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INTRODUCTION

A typical and common way of teaching at the University level is the use of eLearning resources as a part of some type of blended teaching and learning organization. Still, as we will in more details explain further in this paper, this requires a lot of carefully planned, hard work in order to develop adequate teaching material.

For each Faculty, and for each study program, curricula define a lot of obligatory courses. Those require passive and “stable” teaching material, which students will need for reading and studying. Also, if courses are supposed to be taught by use of blended teaching, some multimedia and interactive learning resources are a common extension. Having in mind abilities of all important learning management systems it would be unintelligent not to add testing and/or self-testing resources, or glossary of definitions, theorems and other notions. It is also necessary to offer different links within eLearning materials. For example, links to pre-requisite teaching materials for students lacking initial knowledge, links to extra, additional material for additionally interested students, or general links to books, associations, organizations, conferences, or other interesting sources that might widen students’ interests in a topic. The thing that makes everything even more difficult is a need to keep all of the mentioned resources and links live and up-to-date.

General requirement within each curriculum in accordance with Bologna principles is a large number of elective courses. Naturally, these require the same set of eLearning resources. As an illustrative example we will concentrate on the computer science study program at Department of Mathematics and Informatics (DMI), Faculty of Sciences, University of Novi Sad. To graduate at four years study program and receive the adequate degree, students need a minimum of 240 ECTS. At the minimum, this implies selecting a set of 31 courses – 22 obligatory and 9 elective. Still, since this assumes selecting 9 most demanding elective courses, in practice the situation is a little bit different. On the average, number of courses that students has during their studies is around 33 or 34 courses – students prefer several “easier” courses, to those demanding and hard to pass. Thus, for the “full” curriculum at the DMI, almost 60 courses have to be developed and offered – 22 of those obligatory, while for each of elective computer science courses that exist in study program, we tried to offer at least three different courses. Common practical problem appears – How to create good eLearning material and keep it up-to-date, as suggested in (Buzzetto-More, 2008) or (Georgouli et al, 2008), for example.

Over the last 12 years, which is approximately the time since DMI adopted LMS Moodle and eLearning in general, we worked on more than one method to overcome abovementioned problem. Our experiences are in much more details explained in referenced papers, but we will briefly present the main ideas:

- On-line services and off-line tools were analyzed that are supposed to help converting existing, legacy teaching material into the eLearning resources, as presented in (Putnik et al, 2009). Some of the considered tools, and conversion results, became an integral part of eCourses created at DMI;
- The second line of research was dealing with all kinds of teaching activities like projects, seminar papers, assignments, and so on. Generally, the idea was to find appropriate replacements for standard classroom activities with digital ones. Research and discussions given in (Hazari and Moreland, 2009) were an excellent starting point for our work. In addition to that, our experiences and findings were in use with more than a satisfactory success both for lecturers and students involved, as is presented in (Zdravkova et al, 2012);
- Worth mentioning is that employed eActivities, besides being a good replacement for classical classroom actions, helped us also in several unexpected ways: helped us fight cheating (Putnik et al, 2012), achieve fairer grading process (Putnik et al, 2011), or brought additional ideas for assessment of students within courses (Budimac et al, 2011). More can be found in referenced papers;
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