Chapter XXIII

WeBCEIS — A Scenario for Integrating Web-Based Education into Classical Education

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ABSTRACT

Web-based education implies many advantages for teachers and learners, such as independence of time and place, personalization, and interactivity, but an important factor in learning, namely, face-to-face communication in traditional classrooms, cannot be adequately emulated. Students in a classical university education would lose many important social interactions in a purely Web-based education scenario, which would have important repercussions on their university education. The trade-off is a "blended learning" scenario, which is the integration of assorted learning delivery methods to benefit from both education scenarios. We are, therefore, arguing for an integration of Web-based and classical education, and present WebCEIS— our blended learning scenario for integrating Web-based education into classical education—looking at the organizational and the technological aspects of teaching and learning, and present our strategy for the implementation of WebCEIS.

INTRODUCTION

eLearning, especially Web-based education, has developed rapidly in recent years. There has been excessive publicity surrounding the advantages of Web-based education, such as time- and location-independent learning, the easy updating of teaching material, and, as a consequence of these advantages, cost savings in training scenarios, and it seemed that Web-based education would totally supersede traditional education. But, many experiences in the field of virtual universities and virtual learning communities have emphasized that eLearning also has drawbacks, which include social isolation, and that such a substitution would just mean throwing away all the benefits of traditional education. As an alternative, "blended learning" scenarios have arisen. Blended learning combines eLearning components with traditional classroom components to ensure maximum effectiveness in teaching and learning (Lawhead, 1997; Rosbottom, 2001). The degree of integration of eLearning and the traditional classroom can vary, dependent on the learner type and the current education scenario. For "part-time learners" in professional training scenarios, the degree of substitution by Web-based education could be higher than for "full-time learners" in classical school and university education, because in professional training, the cost savings are more important than the face-to-face communication.

We are offering computer science education to business engineering students at the University of Karlsruhe in Germany. Based on the experience we have gained in different eLearning projects and some products that have been developed in these projects, we have generated a blended learning strategy for our students, in order to obtain the new advantages of Web-based education, while retaining those components of traditional education that are not replaceable. In this study, we will present a scenario whereby Web-based education is integrated into classical education. This has been developed particularly for use at universities, also in subjects other than computer science.

We have used our experience from various projects and activities in which we have been involved for this work: in the ViKar project ("Virtual University Group Karlsruhe") (ViKar, 2001), six universities of different types are cooperating in the field of eLearning, especially in the context of the development and usage of Web-based learning material. Because the cooperating universities have different types of students, but partly the same learning content, they want to develop the material jointly in order to use part of it in all the participating universities. One of the main goals of the project is to find concepts for this development of learning material by several authors and for different groups of learners. For this purpose, special concepts for the modularization of learning content have been developed. Another project in which we are involved is VIROR ("Virtual University in the Upper Rhine Valley") (VIROR, 2001). In the context of this project, four universities are cooperating in order to create a common multimedia education program. These universities want to offer a more multifaceted curriculum to their students, for example, by exchanging special lectures or jointly organized seminars. Both ViKar and VIROR are financed by the state of Baden-Württemberg as part of the "Virtual University of Baden-Württemberg" program (VHBW, 2001). Apart from these projects, experiences from several other activities in the field of eLearning have been used for this work. For example, we have been organizing teleseminars together with several partner universities since 1995.

In this work, we will first compare Web-based and classical education in regard to technologies, roles, and scenarios in order to identify the advantages of both types of education and to find out which will suit different learner groups. In the following, we will

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