Chapter 94
Web-Based Service for Collaborative Authoring Learning Using Grid Portal

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ABSTRACT

The OER is a comparatively innovative phenomenon which perhaps seen as a part of a bigger movement towards openness in advanced education including more familiar and recognized trends, for example Open Access (OA) and Open Source Software (OSS). This study introduces a web based service for collaborative authoring learning to create, share and explore dynamic contents since many problems occurred while using the current e-learning software such as Moodle and LAMS. This paper proposed the alternative e-learning software technology based on grid portal, grid computing platform and it was implemented in two courses. The conventional web based education may not suitable for collaborative tools and online collaborative authoring environment because of slow operation in searching, uploading, visualizing output, and file sharing. The new web based service offers an efficient authoring infrastructure dealing with online collaborative tools and collaborative authoring environment based on grid portal technology to solve the unequal distribution of task and compensation problem as well as investigates how to improve access and usefulness for the users of such OER. UCLA Grid Portal open source software with parallel computing system has been implemented in order to design the efficient authoring infrastructure and to implement an online graphics, animation, audio and video technology

courses. The idea is to show how the environment can offer web assisted education that goes beyond providing digital learning materials. The OER, especially in the collaborative authoring activity environment in parallel computing are designed to provide students with new environment where they can share skills, knowledge, and understanding within the group members as well as to enhance students' teamwork skills in parallel and distributed processing for high performance computing. Based on the strong foundations, hopefully the users are ready to apply their knowledge, creativity and leadership to fulfill the need of their future career development. As a conclusion, the collaborative authoring learning becomes more effective in terms of performance evaluations analysis.

1. INTRODUCTION

There are numerous vital matters surrounding quality, costs and access of knowledge and information over the Internet with the requirement of learning material and content. There is an urgent necessitate to simplify these issues with special concentrate on Open Educational Resources (OER) ideas, as it becomes clearer that the development of Internet offers genuine chances for improving knowledge transfer, access as well as information from colleges and universities to a broad range of users. Individual work is vital in any learning course, however, students should also learn the collaborative behaviour. Students' contributions are required in group efforts. Group works in designing and authoring a courseware is not an easy task. The key problem in a work group is imbalanced distribution of task and performance evaluation. In order to conquer this difficulty, it is essential to offer the online collaborative tools and collaborative authoring environment.

The conventional web based education (WBE) based on one server is not a suitable idea for the collaborative tools and online collaborative authoring environment because of slow operation in searching, uploading, visualizing output and numerical computational. The idea is how to improve access and usefulness for the users of such Open Educational Resources (OER). Therefore, the design and authoring activities in online group works require efficient and powerful web server in parallel computing platform, which will support online collaborative efforts of students. The new

WBE offers an efficient authoring infrastructure dealing with online collaborative tools and collaborative authoring environment based on grid portal technology to solve the unequal distribution of task and compensation problem as well as investigates how to improve access and usefulness for the users of such OER. The WBE supported with the Grid portal technology as well as high performance computing platform results in very high speed up in terms of searching, supporting huge memory, high quality of visualization and increasing the computational performance.

This paper is structured in five sections: This section comprises a brief description of open educational resources and graphics, animation, audio and video technology course. The second section of this paper is devoted to a brief review of web assisted collaborative authoring learning. In section three, Grid portal technology, web services technology and service oriented architecture are summarized. Furthermore, the paradigm and performance of web service are briefly discussed in section four. Section five concludes this paper.

1.1. Open Educational Resources (OER)

OER is a comparatively innovative phenomenon which perhaps seen as a part of a bigger movement towards openness in advanced education including more familiar and recognized trends for example Open Access (OA) and Open Source Software (OSS). However, what are the influences for motivated for openness and what is intended

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