

AIDED CONTENTS SUPPORTING SERVICE FOR E-LEARNING SYSTEMS

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ABSTRACT. *In this paper, we present a novel method for automatically augmenting the learning contents of an e-Learning system, called Aided Contents Supporting Service (or ACSS for short). The proposed method starts off with the examination subsystem of which the exam items are the main learning contents. Then, motivated by the desire to provide the users of such a system with more contents, ACSS will automatically extract concepts associated with each exam item when it is being read. The key concepts associated with the exam items can even be sent as queries to content search engines to get more contents to aid learning. Moreover, the aided contents can be accumulated, ranked, and shared by the users of such a system. Our simulation results indicate that the proposed method can effectively find and integrate many more relevant contents into an e-Learning system. Besides, as a testbed, we not only apply the proposed method to an e-Learning system we develop, but we also use the grid computing technology to speed up the performance of the proposed method.*

Keywords: Information retrieval, e-Learning, Aided contents

1. **Introduction.** Over the past two decades or so, the increase in the computing power of computers and the advance in the Internet technology have fundamentally changed the way information is created, stored, disseminated and exchanged. They have also changed the way knowledge is acquired. More recently, the technologies of blog [1], web 2.0 [2, 3] and social network [4, 5] have once again revolutionized the way information is created, stored, disseminated and exchanged. A good example is Facebook [6]. As stated in the meta data of their homepage, “Facebook is a social utility that connects people with friends and others who work, study and live around them. People use Facebook to keep up with friends, upload an unlimited number of photos, post links and videos and learn more about the people they meet.” However, this does not say that the old ways of communication are of no use; rather, it says that the new ways of communication are much more efficient. Moreover, the way knowledge is disseminated and acquired has also been changed because the learning style has been shifted from classroom to e-Learning [7]. Apparently, the progress of e-Learning depends to a large extent on the evolution of