

# Research and Implementation of Web-Based E-Learning

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**Abstract:** *There has been large variety of resources and platforms which have been exclusively developed for web development. As far as web technology is concern it is continuously evolving, various frameworks are developed with mind of ease of coding for developers and device compatibility supporting desktop and mobile devices. In order to provide resources which supplies users with latest and trending web development frameworks and its languages, this project has been developed with a mind on that. Obviously there are various commercial platforms which provide these sources as discussed before but when it comes to learning from the scratch whatever the framework or the language may be, developer finds it difficult on these learning resources. The problems are 1) When it comes to learning video tutorials are totally project oriented developers find it difficult in understanding the main concepts of the frameworks and languages so they move or browse for blog based tutorials and finally confused with the differences various resources provide. 2) Unavailability of direct interaction of course makers and course learners so various and spontaneous queries and doubts can be cleared. Our project resolves these kind of problems by providing both blog and video based courses for each and every frameworks and languages our project provides an Online forum for communication between learner and course instructor.*

## 1. Introduction

Web-based course as the main approach to carry out teaching activities of E-Learning plays an important role in E-Learning, thus courses of high quality are the important guarantee to develop E-Learning. However, the current status of developing web-based E-Learning courses is not optimistic and the courses that can be used in practice are not the majority. There are several problems: first, most of persons who develop web-based E-Learning courses are members of computer profession, but teachers who truly understand characters of students and subject and teaching regulations of E-Learning have serious difficulty in developing web-based courses. So the effect of teaching activities is discounted and teaching design can't be realized. Second, although the forms of presenting teaching contents and carrying out teaching activities are various, it is difficult to update teaching contents and activities according to characters of students and subject and teaching regulations of E-Learning [1]; Third, because of the differences of running environments and the independence of development, the modes of running and maintaining are not united [2]. The problems hereinbefore influence the quality of web-based E-Learning courses severely. On a long view, low quality web-based E-Learning courses not only waste time, money and human resource of developers, but also lead the result that students gain little and teachers loose interests [3]. Therefore, the advantages of E-Learning are weakened and the development of E-Learning is baffled. In order to settle the problems above, the research developed a scientific and valuable platform of auto-generating web-based E-Learning courses. After being trained, teachers who truly understand characters of students and subject and teaching regulations of E-Learning can develop web-based E-Learning courses without the help of members of computer profession. The courses include instructional design philosophy of teachers and can be maintained and readjusted anytime and easily

## 2. Design of Platform

### 2.1 Basic Ideas and Principles

A web-based E-Learning course is the confluence of teaching contents and activities of some subject [4]. The teaching contents and activities are presented by network. So a web-based E-Learning course can be divided into two parts: teaching contents and web learning and teaching environment organized by teaching objectives and strategies [5]. Teaching contents of web-based E-Learning course can be presented by web page, teaching activities can be realized by BBS, online test and so on. Aiming at the two parts of web-based E-Learning course, the platform provides function modules of teaching activities and teaching contents (have interface of editing contents). Through some simple operations of teacher, the diverse function modules of teaching activities and teaching contents have been edited can be composed to a web-based E-Learning course of systematization and independence. As the platform adopted B/S (browser/server) mode, the clients need not to install any software, after logging in the platform through browser, teachers can develop courses online. The platform emphasizes easy and humanistic operation and functions available for selection among diverse modules and within one module. Because the platform provides instructional strategies templates, under the guidance of the platform, teachers who aren't familiar with teaching philosophy can design and develop web-based E-Learning courses in accordance with characters of students and subject and teaching regulations of E-Learning.

### 2.2 Function Design of Platform

The platform designed 14 function modules. Function module of course development was primary and others were secondary. The function design of the platform was based on two identities (Fig. 1). Identity of Administrator • User Management: Manage users who develop courses through the platform. The administrator can query, delete and create users. • Course Management: The object is all courses developed by the platform. The administrator can query, delete, edit and create courses. • Resource Management:

Manage the resources uploaded by users. Create and delete resource categories. Query, delete and upload resources.