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Research on the Practice of "Web Design and Production" Course in Higher Vocational Colleges

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Abstract: The basic educational process of higher vocational college education is to teach young people with development of their morality, intelligence, physique, critical thinking and labor, with certain theoretical and practical knowledge. The research focuses on the study from traditional teaching to independent practical learning. The main change possibility is about teacher and student's cooperation which guides methodology and a project-based learning opportunity. The paper presents teaching and learning possibility based on an application of web page design and production course. We, beginning with the studies existed in web design and production course, introduce the application-based course, and develop the application the web design and production course teaching method. Through application-based project courses, students are able learn basic operations related computer software and then practice designing and producing digital products. The paper can show the practical teaching method in the course of web design and production has been effective in promoting learners, their interest in learning and improving their professional core qualities.

Keywords: Education, Web Design and Production, Practical Research

1. Introduction

The practical teaching method in the course of "Web Design and Production" encourage students to learn more vividly and independently. Therefore, the students enjoy receiving practical knowledge and mastery of website development, so as to truly recognize the gateway with real position such as a web developer, web programmer.

In the teaching mode of the "Web Design and Production" course in higher vocational colleges, the role and significance of integrating practical in project teachings are studied in this paper. Through integrated practical and theoretical study students will gain technical, conceptual and critical understanding of web development and its design in a range of forms and cultural contexts [1]. Project units provide opportunities for creative practice working independently and in collaboration with others. A formal education is very important for cultivating independent learning ability [2].

There are many software and digital media technology courses such as Java, Python, C language, Matlab, Flash, Photoshop, Dreamweaver, Premiere, 3DMax and so on, constitute an important part curriculum system developing programming and digital media technology professionals. In general, as a result of these courses, students are able to be familiar with basic operation related computer software and then to code, develop, design, produce, spread digital product by software tools as well as be able to innovate technology. However, still today, the present situation of curriculum teaching is not good enough. Many courses are like skill-training course, in which, the emphasis is very much on basic function instruction and operation demonstration, and students become familiar with the software by some simple copy exercise [3]. For instance, the flipped classroom is to flip the traditional teaching structure of "teaching in class – extracurricular internalization" and to form a new mode of "self-learning pre-class, deep interaction by activities in class [4]. In addition, there are many cases of product-based teaching for this course. Through projects, students are able to learn basic operations related computer software and then

practice designing and producing digital product [5-11].

2. Analysis of the Current Status of the Course of "Web Design and Production"

"Web Design and Production" is a core of technology which has a high degree of comprehensiveness and practicality [12]. The teaching contents cover not only the basic knowledge of website construction and maintenance, web page layout, web element positioning, hyperlink technology, CSS, web dynamic effect creation, website testing and publishing, but also web design, Dreamweaver and other web production software [14-15].

2.1. The Current Situation for Supporting the Course

China has held national education conferences on vocational education to promote the reform and development of vocational education. In fact, for students majoring in computer science, from the examination results of the course, they have a good grasp of basic knowledge, but their comprehensive practical ability is relatively poor. From the perspective of course design and graduation design, it is manifested as a lack of systematic design thinking for the project. Project development is more difficult, and there is the problem of "knowing but not using, using but not creating [13].

Therefore, practical approach to web design courses in vocational schools is a great improvement to the past teaching methods [14]. With school and- enterprise cooperation as the guiding ideology, cultivate talents with solid professional basic theory and professional practice skills to meet the needs of enterprise development.

2.2. The Current Situation for Learning the Content

There are general issues related to the contents and delivering method for the course. The issues are mainly about insufficient motivation for learning, theoretical content separated from the practical, less ability to solve problem practically, lack of confidence in coping with challenges. The traditional teaching model in the course of "Web Design and Production" is easy to cause the above issues of poor learning enthusiasm of students and low teaching effect [2]. When students practice, teachers know that students still have problems in learning, but there is not enough time to remedy them. However, based on practicing the entire learning process of the "Web Design and Production" course which is conducted in groups can enhance the possibility to carry out the practical process.

Regarding the study, as a dominated version of the course content, the "Web Design and Production" course is determined by the content of the translated book of the "HTML5 and CSS3 Basic Course" (8th edition) edited by Castro and Hislop [15]. This is the theoretical course which has 32 hours curriculum, but the content to be taught composed of 21 chapters, with more than 400 pages. However, teachers usually add additional contents that is not covered by this textbook.

3. Content Design of "Web Design and Production" Course

In general, there are many cases of product-based teaching for this course [7-11]. When instructors teach the course, they need to update the course with the latest developments of web design and production.

In the previous teaching model, the teacher's speech was dominant, apart from answering questions, there was almost no interaction between teachers and students. However, based on the independent practical learning possibility for this course, the students can get sufficient knowledge through practical works including classwork, and homework.

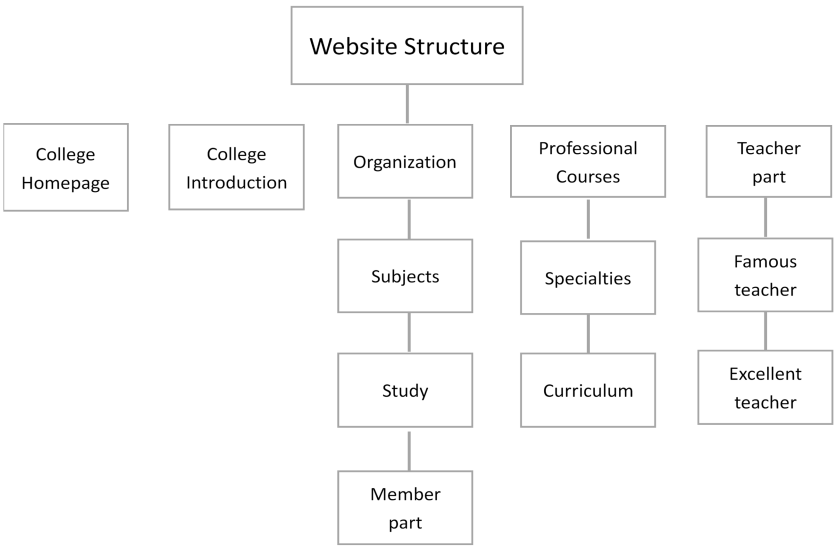

Figure 1. *Frame structure.*

3.1. A Vocational College Framework Layout

Figure 1 shows the navigation general framework of typical vocational college web site including an academic part. Under the navigation columns, they usually consists of parts, including the college home page, department home page, college overview, party construction, major construction, teachers' presence, teaching and scientific research, student garden, recruitment and employment in the key structure of the secondary college. Under the framework, we can understand the possibility of developing the college web site through the practicing the “Web design and Production” course.

3.2. The Teaching Objectives

The course "Web Design and Production" is a compulsory course for computer application majors. Through the study of this course, students are required to master the professional basic theory and professional practical skills of web design and production, and explain it with a series of stepped cases "from shallow to deep, from simple to complex" [5-7]. Students are to effectively master website establishment and management, web design, photoshop image processing, hyperlinks, forms, HTML, CSS, JavaScript in the course of web design and production. They must also master the method and ability to solve practical problems, and have the ability to establish and maintain the website [5-9].

3.3. The Teaching Contents

In terms of the teaching content, the project requirements, format, layout design, color matching and services suitable for the school website are designed and produced for different projects for different groups [5-9].

content		
Basics	Website establishment and management	1.1 establishment of website
		1.2 remote site management
		1.3 uploading and downloading files
	Understanding web pages	2.1 analysis of web pages in the website
		2.2 web knowledge
Increase	Web page HTML structure	3.1 Analysis page
		3.2 overview of HTML structure
		3.3xhtml tag overview
	Web page layout control	4.1 overall layout analysis and Implementation
		4.2 overview of web page layout
		4.3css style preliminary summary
	Application of box mode in layout control	5.1Application of CSS
	Text and hyperlinks	6.1 content structure and style analysis
		6.2 hyperlink and text format summary
	Form	7.1Analyze chapters and form elements in web pages
	Multimedia application	8.1Application of multimedia in web pages
JSP language	Dynamic web page making	9.1Jsp code analysis
		9.2Introduction to dynamic web pages
		9.3JSP syntax rules

Figure 2. *A typical content of course.*

This part requires a large number of questionnaires and market research. Secondly, use Dreamweaver software into the webpage coding. Apply standards and show them how to make a good web page (Figure 2). Finally, let the students learn actively step by step in an incremental teaching way. Figure 2 shows the teaching content of dynamic languages from basic knowledge to skill improvement and then to advanced dynamic languages.

3.4. Teaching Design

According to the curriculum, the teachers follow a plan to cover all the required topics. The plan consists of a step by step plan to cover the curriculum. Figure 3 shows the activities of the teachers and the students. The teachers' activities can be divided into providing project lists, determining the task, managing resources, giving technical support, organize enterprise work, and is invited to participate in the evaluation. Student activities are divided into project determination, plan determination, group discussion, project making, work display, and mutual evaluation. The plan determination and group discussion in student activities need to be revised repeatedly until the final result is discussed.

In project making, teachers will provide technical support in time to assist students to complete their works. In the whole teaching design, students and teachers keep timely communication, help students’ communication skills, and ensure the smooth progress of the project (Figure 3).

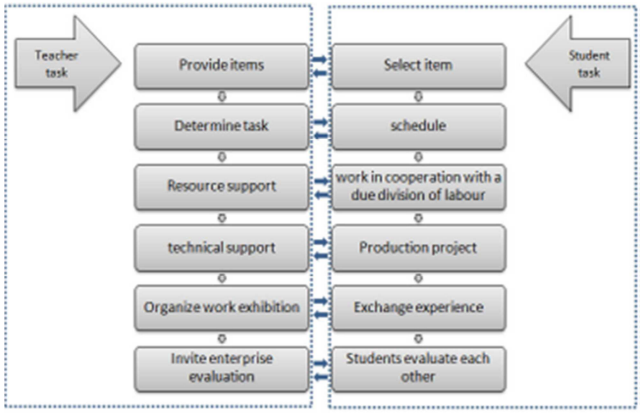

Figure 3. *Instructional Design.*

4. Application of “Web Design and Production’ Course

4.1. Overall Planning

Through the application, teachers need to plan sufficient contents as a curriculum to complete the teaching goal, student's need to learn the contents practically. Therefore, students need to be familiar with HTML, CSS, form, page layout, such as theoretical knowledge and practical skills. In this web site, we plan the following base design. Page layout

order is from outside to inside, top to bottom, left to right, by DIV layout, while page elements include images, text, forms, hyperlinks, etc. The overall color of the web page is composed of light blue, dark blue and white. Text is in black and blue font.

4.1.1. Site Directory Structure

Cascading Style Sheets (CSS) is the standard language for styling structured documents, such as HTML. The combination of HTML 4 and Cascading Style Sheets (CSS) separates the information on a web page from the stylistic instruction [16].

Home page is stored in the root directory of the site, named index.html. The image file required for the home page is in the IMG folder in the root directory, and the CSS file required for the home page is in the CSS folder in the root directory.

Each sub-page is stored in pages, the images required by each sub-page are in the IMG folder, and the CSS files required by each sub-page are in the CSS file under this folder. Figure 4 shows the site directory base structure.

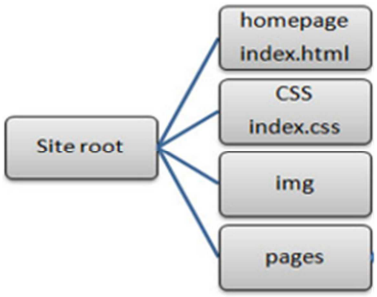

Figure 4. *Site directory base structure.*

4.1.2. HTML Hypertext Markup Language

HTML Structure							
Overall Part		Podule Structure			Content Structure		
Head part	Main part	Label	Attribute	Attribute value	Label	Attribute	Attribute value
<head> </head>	<body> </body>		id	"header"	<p>	align	"center"
				"menu"	<hr>	size	"numerical value"
				"search"	<font>	face	"Regular script"
				"picture"	<hn>	align	"center"
				"content"			
				"content1"		type	"circle"
				"picture1"	...	...	...
				"footer"	...	...	...
				...	...	...	...

Figure 5. *HTML structure.*

HTML structure of web pages can be divided into the overall structure, module structure and content structure of three levels, production generally from outside to inside that is to establish the overall structure, and then divided module structure, and finally fill the content structure. Top to bottom is the insertion of HTML elements. It is presented as from top to bottom design when building the module structure and content structure. Special structural patterns are created from left to right to enrich the page layout. HTML tags are widely used in web pages. Figure 5 shows the overall structure of web page HTML, module structure, part of tags, labels, attributes and attribute values in content structure.

4.1.3. CSS Cascading Style Sheets

Cascading style sheets (CSS) are used to control the appearance of web pages, including layout format, image size, text style, DIV float, and so on. This project is to separate the page content from the form, with the page content stored in the HTML document. The CSS rules that define the form of the page content placed in the header of an external style sheet or HTML document. This article uses an external cascading style sheet as an example that shows how the external stylesheet links to an HTML file and some of the selectors, attributes, and attribute values in the web CSS.

4.2. JAVASCRIPT Script Language

JSP JAVA code and specific changes in the content are embedded in the static HTML page. The static page as a template achieves dynamic generation of part of the content. This project uses a scripting language.

5. Conclusion

As a conclusion, the practical teaching method in the course of "Web Design and Production" has been effective in promoting students, their interest in learning practically. The paper focuses on the studies from traditional teaching mode to the project-based teaching. We analyze a case study about the learning practically the “Web Design and Production” course. The web site application, as an example, in the form of project tasks to the curriculum of web design and production. The result of project-based course content depends on the ability of student’s familiarity with HTML markup language, CSS cascading style, form, page layout, such as theoretical knowledge and practical skills.

It is feasible to carry out teaching in the form of project, and it is also an important method and means in higher vocational teaching. In order to better complete the study of this article, based on the literature studies for the issues existing in the teaching of vocational colleges, higher vocational curriculum implementation situation, the curriculum application is performed efficiently.

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