

# Optimization of the Assessment Method Used in Web Design and Website Construction Course

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**Abstract:** In this article, the shortcomings of the existing assessment method used in Web Design and Website Construction course are analyzed, and the assessment method is optimized based on the practice of project-based teaching reform. The main idea is to take project implementation as the leading factor, increase the assessment proportion in the course teaching process, and assume actual static website design and implementation as the final assessment goal. This assessment method improves the shortcomings of existing assessment methods to a certain extent and comprehensively reflects the overall learning situation of students.

**Keywords:** Course assessment; Web design; Project-based teaching

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## 1. Introduction

Course assessment is a key link in course teaching. Through assessment, we will not only grasp the students' learning situation, but also determine whether the preset teaching objectives of the course are realized. Therefore, the setting of assessment methods has a significant impact on students' learning direction. In actual course teaching, due to the differences in each course, the setting of assessment methods varies. Currently, there are many research findings on the assessment methods used in Web Design courses. Liu, Pang, and others have conducted a process-based reform research on the assessment mode of Web Design courses. In their studies, they analyzed the characteristics of this process-based course assessment, redesigned the teaching evaluation system, and proposed a process-based course assessment plan<sup>[1,2]</sup>. Yang and Chang explored the assessment methods used in Multimedia Web Design courses based on two teaching models, *i.e.*, the massive open online course (MOOC) and flipped classroom models, as well as improved the teaching effectiveness of Multimedia Web Design courses through process-based assessment and diversified forms of homework submission<sup>[3,4]</sup>. Based on the certification background of engineering education, Huang has improved the assessment method of Web Design and Development Technology courses from aspects such as process assessment, assessment form, assessment content, and evaluation method<sup>[5]</sup>. In a study, Niu investigated the reform of course assessment models based on students' personalities and strengths, exploring the combination of teaching content and assessment models with students' personalities and strengths and fully leveraging students' personal advantages<sup>[6]</sup>.

The above research results have different reflections on the current assessment status and models of Web Design courses, and the exploration of different optimization methods provides reference to the teaching reform and adjustment of assessment methods for Web Design and Website Construction courses.

## 2. Teaching status and existing problems

Web Design and Website Construction is one of the core foundational courses for e-commerce majors in the School of Economics and Management at Wuyi University. It is also an introductory course in the field of technology. The teaching objectives of the course are as follows: to cultivate students' technical skills in developing static websites; to familiarize students with the development process of static websites; and to lay a solid technical foundation for subsequent dynamic website development. At the same time, the course also intends to enhance students' basic knowledge reserves, so that they can engage in technical development and management work after graduation. This course has high practical requirements, and the total class hours are set to 48 hours, which are equally divided into 24 hours of theoretical learning and 24 hours of practical training. In the teaching process, a project-based teaching mode is mainly used, with the goal of achieving practical case pages, encouraging students to combine theoretical knowledge with practical application, and strengthening the cultivation of practical skills and professional literacy.

The original assessment method is based on the final exam, accounting for up to 70%, as well as attendance and usual class performance, accounting for the remaining 30%. Looking at the teaching situation in recent years and the feedback from students, the course team has found several problems with the existing assessment method: firstly, the assessment of usual class performance is not as detailed and quantified; under the outcome-based education (OBE) philosophy, any exercise or assessment content should have clear assessment standards; secondly, the proportion of scores from the final exam contributing to the overall evaluation is too high, resulting in the poor reflection of the practice effect in the final overall evaluation score; thirdly, the single assessment form lacks formative evaluation.

Therefore, after several semesters of teaching practice and accumulation of experience, the course team decided to carry out project-based and result-oriented teaching as well as implement a process- and result-oriented assessment model in Web Design and Website Construction, so as to better meet the needs of teaching reform, improve the quality of course teaching, stimulate students' interests, and enhance students' practical skills.

## 3. Optimization

In response to the shortcomings of the original assessment method of Web Design and Website Construction, and in consideration of professional training objective requirements, improvements have been made from two aspects: assessment method and assessment content.

### (1) Adjust the proportion between usual class performance and final exam scores

In classroom teaching, the proportion of usual class performance is 50%, while the proportion of final exam scores is 50%. The usual class performance consists of attendance (accounting for 5%) and five exercises (accounting for 45%), with clear goals and themes for each exercise. In this way, the total proportion of final exam scores and practical scores can comprehensively reflect students' learning situation throughout the teaching process.

### (2) Change the assessment method from test papers to assignments

In the past, open-book examination was the assessment method for this course. Open-book examination emphasizes more on the mastery of theoretical knowledge. However, for computer courses in general, in addition to basic theoretical knowledge, the comprehensive application of knowledge is highly emphasized. Therefore, changing the assessment method from test papers to assignments through actual project development not only evaluates students' understanding of basic knowledge, but also assesses students' comprehensive application of theoretical knowledge. Usual class performance assessment is based on the design and implementation of each individual page, whereas the final assessment is based on the design and implementation of the entire static website. The assessment focuses on combining theoretical knowledge with practical application.

### (3) More comprehensive assessment content

In terms of assessment content, the original assessment content mainly focuses on professional theoretical knowledge points. Upon changing the assessment method, the first step is to integrate the ideological and political elements of the course, such as patriotism, professional ethics, scientific spirit, craftsmanship spirit, *etc.*, into the selection of topics on the page or website, so that students will not only master computer technology, but also acquire socialist core values; the second step is in terms of professional and technical content assessment based on the idea of actual static website development, where students are required to first write website construction requirement documents and then design and develop based on the content of the documents. In the implementation process, students would need to apply the theoretical knowledge learned from books and thus achieve full integration of theory and practice as well as improve their practical and professional skills.

## 4. Assessment content arrangement

### 4.1. Usual class performance

In line with the optimization, the teaching content and assessment content of the course are adjusted.

The teaching content of the first chapter includes three aspects: basic format of HTML documents, text tags, and image tags. The following is the assessment content of the exercise: with the theme “Showcasing Traditional Chinese Culture,” students are required to create a page to showcase their understanding of traditional culture through a combination of text and images and then test the effectiveness of the page. The proportion of this exercise is 9%.

The teaching content of the second chapter includes three aspects: CSS core foundation, CSS control text style, and CSS advanced features. The following is the assessment content of the exercise: with the theme “Showcasing of the Chinese spirit,” students are required to create CSS documents on their own, define multiple types of styles, complete the graphic design on the page, demonstrate understanding of the Chinese spirit through a combination of text and images, and test the effectiveness of the page operation. The proportion of this exercise is also 9%.

The teaching content of the third chapter includes three aspects: related attributes of the box model, type and transformation of elements, and floating and positioning of elements. The following is the assessment content of the exercise: with the theme “The Spirit of the 20th National Congress,” students are required to use div+CSS to design and realize multiple graphic pages in such a way to reflect their understanding of “The Spirit of the 20th National Congress.” The proportion of this exercise is 9%.

The teaching content of the fourth chapter includes three aspects: list tag, CSS control list style, and hyperlink tag. The following is the assessment content of the exercise: students are required to comprehensively apply lists, CSS, and hyperlinks to realize the jump between the website’s navigation bar and different pages, further improve the structure of the page and art effect, as well as enhance the website’s access experience. The proportion of this exercise is also 9%.

The teaching content of the fifth chapter includes four aspects: understanding table-related tags, CSS control table style, form control, and CSS control style. The following is the assessment content of the exercise: students are required to create a static site, comprehensively apply CSS and forms, and complete the design and implementation of login and registration interfaces. The proportion of this exercise is 9%.

### 4.2. Final assessment

According to the assessment requirements of the OBE philosophy, the assessment content needs to be closely related to the teaching objectives of the course and have strong pertinence.

(1) For course assessment goal 1

To understand the basic knowledge of web design and be familiar with the basic process of website construction. The following is the assessment content: students are required to master the basic content of HTML language and the planning and design of website function modules, as well as gain familiarity with the main process of website construction.

(2) For course assessment goal 2

To master the use of HTML language to make static pages. The following is the assessment content: students are required to skillfully use HTML tags to complete the design and implementation of all static graphic pages according to the theme of the website and the classification of various columns.

(3) For course assessment goal 3

To master div+CSS to achieve page layout design and beautification. The following is the assessment content: students are required to comprehensively apply the above technology in line with the style requirements of the website theme, complete the layout design for all pages, ensure the consistency of page structure and style, ensure that the overall effect is alluring in terms of color, picture, text, style, and so on to meet the theme, carry out matching and coordination, and use their own CSS documents to achieve the management of all static page styles.

(4) For course assessment goal 4

To master the planning, design, and implementation of static pages and static websites. The following is the assessment content: students are required to design and implement static pages with consistent style and structure as well as a beautiful layout design based on the theme and integrate them into static sites through hyperlinks, navigation bars, and other technologies, so as to achieve standardized file naming, clear page material classification, reasonable column settings, thematic related content, easy browsing for users, and a smooth running speed.

## **5. Implementation effect**

In the past three semesters, the revised assessment method has been implemented. Generally, in the first class of the course, the assessment method, assessment content, and basis are clearly explained, so that students would be able to understand the specific operation process and make timely adjustments based on the actual situation. At the end of the semester, the learning situation of students is determined, and feedback is obtained from students through a questionnaire survey. Our statistical data showed that most students find this assessment method relatively novel as it divides the necessary content into assignments for scoring, ensures that the final examination takes up a smaller proportion of the overall evaluation, and clarifies the goals for each stage in the learning process, combining some relatively dull theoretical content with actual development tasks, effectively enhancing the learning goals and enthusiasm of students, and also cultivating the spirit of teamwork among students.

## **6. Conclusion**

Course assessment is a key link in teaching reform and plays an important role in improving teaching quality. In this article, Web Design and Website Construction is taken as an example, and the assessment method of this course is optimized in line with the practice of project-based teaching from three aspects. The actual implementation results showed that this assessment method is more scientific and reasonable. However, in terms of specific details, especially those difficult-to-quantify assessment indicators, further research is needed to set a more scientific scoring basis.

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