

Research and Design of College Teaching Log Management System

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ABSTRACT. *At present, many colleges and universities use manual filling in the teaching log, which has certain limitations. Based on the web system, the whole teaching log is tracked by the web system. For the teachers, it provides the schedule management function with friendly operation. For the teaching administrators, considering that different colleges have different algorithms for calculating class hours, the system specially designs and implements the public edition module. The teaching administrators edit the specific formula, namely the class hour calculation strategy. The users can use the select strategies to achieve one click calculation of class hours.*

KEYWORDS: *Web, teaching management, teaching log, software design*

1. Preface

Teaching log is the accumulation of practical knowledge and the display of teaching concept [1], an effective way to reflect on teaching [2], and an effective means to promote the professional growth of teachers [3]. At the same time, as a management means existing in the process of teaching management, it plays an important role for the teaching managers at all levels of the school to control the classroom teaching artery, implement effective management and improve the quality of teaching [4]. However, at present, there are some limitations in teaching log management. The information system related to educational administration management is the necessary information platform for teaching management in the process of talent training in colleges and universities [5]. Therefore, it is very meaningful to implement the teaching log management system based on web.

This paper is to design and implement a web-based teaching log management system, which will automatically generate the course calendar according to the course scheduling information. Log in and trigger a teaching event when the teacher teaches, and the student representative will confirm it. Finally, through statistical analysis, the basic situation of the whole teaching is obtained, which is used to assist

in the assessment of the workload of teachers and the overall teaching situation of the course.

2. Background

The teaching management department of the school will track the teaching situation of each teacher, students and the arrangement of courses through the teaching log and other ways. Teaching log is usually filled in manually, and its advantage lies in the flexibility of filling in. Teaching log can be filled in advance or filled in afterwards. On the one hand, the disadvantage is that there may be the risk of missing or over counting in the final statistics of teaching workload. On the other hand, a large number of paper teaching logs are extremely inconvenient for statistical analysis, and it is difficult to compare some historical teaching information vertically. For the management of teaching system based on modern information technology, because of the stability of the computer itself, not only these problems can be avoided, but also the teaching information can be easily analyzed from multiple angles, which is of great significance to promote the teaching reform and improve the teaching level.

The teaching management system proposed in this paper is based on web technology. The system will generate a personal teaching calendar for each teacher according to the curriculum arrangement of each semester. When the teacher is in class, he / she will click on his / her own teaching calendar in the current multimedia classroom to sign in and fill in relevant information. Teaching managers can query teachers' teaching situation through the report module of the system.

3. System module design

User management module: users are divided into super user, teaching administrator user and teacher user. There is only one super user in the system, which has all permissions. Its main function is to approve the teaching administrator user. The teaching administrator user has the authority to manage the teacher user. It can not only manage and maintain the teacher user, such as the course adjustment approval, but also view all the teaching statistics of the teacher user. Teacher users have the right to fill in their own teaching logs, as well as some applications for curriculum changes.

Schedule management module: each teacher user will have a teaching log file. According to the course arrangement information of the current semester, the system will generate the teaching calendar of the current semester for each teacher. If the teacher has classes in a certain period of time, the course information will be displayed. The course information includes the specific course information and the log information filled in by the teacher.

Report management module: the report module is provided to the teaching administrator to display the multi-dimensional teaching statistics results. Among them, the trend chart of teaching curriculum workload is used to show the trend

chart of the daily workload of teachers and the average value of each professional title in the whole semester, reflecting the workload of teachers in the whole semester and whether it is balanced; the statistical pie chart of total teaching hours is used to show the teaching time of teachers in each period of the whole semester and the average value of teachers in each professional title in the whole school, which is used to reflect the state of teachers' total teaching work; and the pie chart of curriculum completion to show whether teachers are absent from class.

Formula editing module: formula editing module is only provided for teaching administrators to use, in order to increase the flexibility of the system. When the teaching secretary counts the class hours of each teacher, he needs to count from multiple dimensions: different professional titles; the identity of the teacher is a full-time or part-time teacher; the class belongs to a combined class or a single class, and the treatment of teaching hours exceeding the limit value, etc.

Course analysis module: course analysis is to analyze and preprocess the uploaded course xml file of the specified format, generate the course class and write it into the database, map the course information into the teacher's teaching log class, and write it into the database at the same time.

4. System software design

4.1 Database data entity class design

User type: user id, gender, name, title, birthday, education background, identity, role

Formula class: formula number, formula name, formula content;

Teaching log: log id, log name, log details, teaching date, class hour, class number, course name, user id (association);

Courses: course id, course name, class name, course date, teacher;

Schedule type: year, month, day, time period 1, time period 2, time period 3, time period 4 and time period 5 (five time periods are associated with teaching log id).

4.2 Main interface design of software

User management: add, delete, modify and query user classes;

Operating teacher's teaching schedule: add, delete, modify and checking teaching log;

Operating single teaching log: add, delete, modify and check the teaching category;

Edit operation formula: add, delete, modify and query formula class;

Report management: sql query for courses;

Course import: read course xml, create course class, and map teaching log class;

4.3 Key module design

Course import: use xml to configure the course plan information of teachers for a semester, so as to increase the scalability of the system. The course import is to analyze and preprocess the course xml information uploaded by users, and map the course information to the corresponding teaching log class, so that teachers can find all the teaching tasks of their current semester in their own schedule.

Formula analysis: through the web page, the teaching administrator edits the formula for calculating class hours, names the formula, and uploads it to the database. The formula is infix expression $a + b * c + (d * e + f) * g$, which is converted into suffix expression $a b c * + d e * f + g * +$, and used stack to assist storage in the calculation of class hours.

5. Summary

In this paper, from the perspective of teachers and teaching administrators, a teaching management system with friendly interaction and flexible functions is realized. For teachers, the specially set personal schedule management function will display the courses of the semester in the form of calendar, and automatically fill in basic information for teaching. Teachers only need to improve other information within the specified time limit. In this way, the persistent processing of teaching log information can be realized, which is very convenient for teachers to review work and urge to improve teaching quality. For teaching administrators, on the one hand, it can play a role of supervision and progress in teachers' teaching work, on the other hand, it can provide help for accurately obtaining teachers' working conditions and making more scientific and healthy teaching plans.

References

- [1] W.H.Zhao (2010). A study on the mediafional role of teaching journals in teachers' professional learning. Shandong Foreign Language Teaching, vol.31, no.4, p.24-29.
- [2] S.M.Zhao (2009). Teaching journal: an effective approach for foreign language teachers to conduct reflective teaching. University Education Science, no.2, p.56-59.
- [3] Y.M.Hou, B.H.Song (2011). Talking about teaching log and teachers professional growth. China Electric Power Education, no.4, p.32-33.
- [4] J.Yi (2015). Research on the reform of class teaching log management. Management observation, vol.7,p.101-102

- [5] J.T.Chen (2016). Research on the related problems of teaching management system in Colleges and Universities. Journal of Changchun Normal University, vol.35, no.12, p.105-108.