

Design and Analysis of the Learning Process Management System

Songfeng Gao^(✉) and Ziqi Wang

School of Industry Engineering,
Beijing University of Civil Engineering and Architecture, Beijing 100044, China
gaosongfeng@bucea.edu.cn, lj230405@sina.com

Abstract. In this paper, we put forward a set of learning process management system. This system, integrating the monitoring and feedback functions which are widely ignored in other current teaching platforms, focus on the students' learning process, and digitizing the users' daily learning. From login this platform, to recording the user's learning habits and learning methods, at the same time, this system shows users' learning situation in the form of graphs showing and provides the objective effective data for the "teaching" and "learning". The learning process management system aims at helping students to establish the purpose of good study habits and learning methods.

Keywords: Learning process · Teaching platform · Process management · Process feedback · .net platform

1 Introduction

With the development and the mature of Internet technology, the teaching mode is changing from the traditional classroom to teaching system. However, the student lack of autonomy in the process of using teaching system, and, at present, some of the teaching system without effective learning regulatory mechanisms, which leads to the loose learning environment relatively, and the teaching quality cannot reach the effect desired. According to the survey, that 46.2 % of people hold that the main factor of the influence on teaching learning system is lack of the monitoring mechanism of learning process, while only 28.2 % of people consider that the reason is the design of the teaching system itself [1]. So, now, a method of learning process management should be applied into the process of the student daily learning.

The learning process management feedbacks and manages the whole process that involved the kinds of elements, links and methods of the study. It has been widely used and formed a complete set of management system in European and American countries. When the management method applied into the teaching system, it will not only real-time monitoring the process of learning, at the same time, feedback the learning stat to students objectively, but, more important, improve the quality of teaching, and the teachers could carry out targeted teaching according to each student's specific learning situation.

2 The Implementation of the Main Functions

In order to make up for other teaching systems could not monitor and feedback the learning process of the students, learning management system arises at the historic moment. Guided by the learning process management method, it mode of C/S framework, based on. Net platform, uses C # programming language implementation, and equips SQL Server 2005 database to complete the actual demand of data processing and storage.

In terms of functional design, according to the result of requirement analysis phase, the system, in the functional design, include the login management, the teaching management and the online discussion three parent functions. And the teaching management is divided into three child functions, that is the learning time management, progress management and operation management (Fig. 1).

2.1 The Design Principles

The design Principles of the learning process management system integrates the basic design methods of the process management in general, in order to flexible utilize the real learning, teaching and manage the process effectively in the actual work. Each functional module of the system independent of each other, development respectively, that reduces the data coupling, improves robustness, and it's convenience for the system maintainability and expansion of the subsequent function. (System data flow

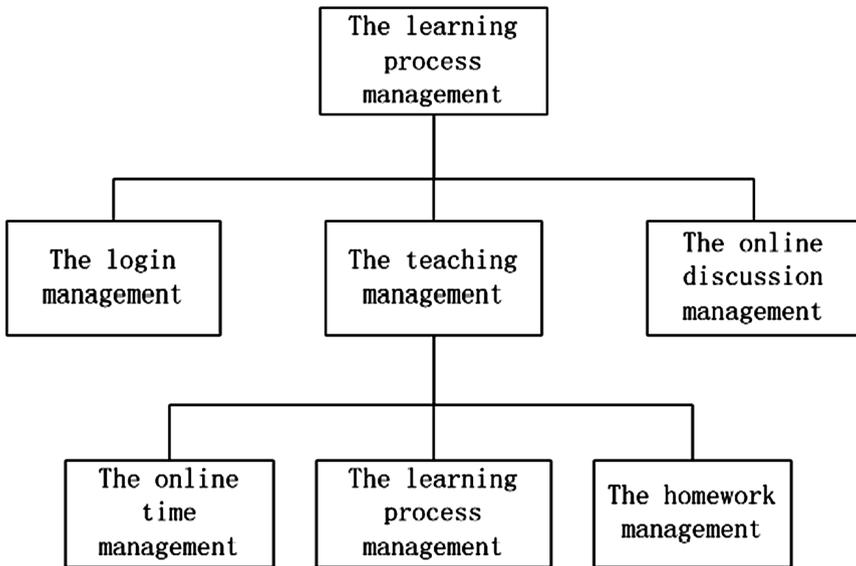


Fig. 1. The functional configuration chart of the learning process management

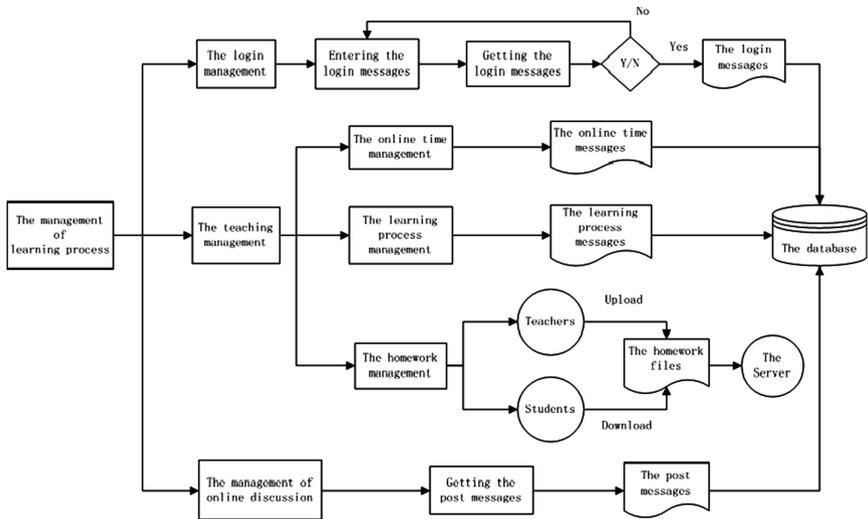


Fig. 2. The data flow chart of the learning process management

diagram in Fig. 2) While, during development process of the system, we give full consideration to the actual needs of teachers and students, and based on the following principles to create an efficient and practical learning process system for them .

Clearly Orientation. By adhering to the manage and feedback the users' learning process, the principle of the guide students to cultivate a good study habit, the system make efficiently complete the task of learning and form their own learning methods come true.

Friendly UI. Fully considering the demands and experience of the user groups at using this system, to build a good environment for household work and study more convenient.

A closed-Loop Feedback. Closed loop management allows users, according to the feedback data, to summarize their own learning habits, learning ways, learning progress, the implementation of learning goals and some other relates. At the same time, the teachers also assess the performance of students reasonably and scientifically.

Flexible Learning. On the basis of the closed loop management, the flexible learning will come true. According to the feedback data, users will real-time adjust the focus on "teaching" and "learning".

2.2 The Login Management

The login module complete simulation the attendance functions of the actual teaching and, reflecting students' study habits by the specific time and the numbers of students log on the system in the daily. Students need to course selection at teaching platform

login. After verification of their login information, the system will record the selected program and the logon time on server. At the same time, the system will also record and update the login times of the day. The selected courses, login time as well as the number of logon will be directly entered into the database. Those data reflect the time and frequency of student login teaching system every day, the attendance status and the enthusiasm of student autonomous learning (Fig. 3).

2.3 The Teaching Management

The teaching management is divided into the learning time management, the schedule management and the operation management three sub-functions. Three sub-functions in different ways to provide objective data to support effective learning progress of students' daily learning and various disciplines of knowledge. According to those data,

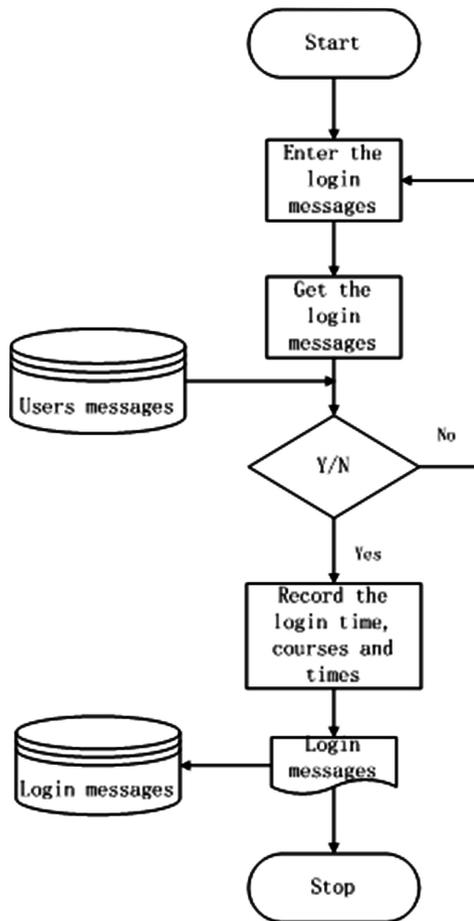


Fig. 3. The data flow chart of the login management

students can more clearly to know the level of their own understanding on different disciplines, reasonable arrange the learning time, strengthen their weakness. During the process of teaching, at the same time, it's easy for teachers more intuitive to find the problems of each student in the course of study, timely to adjust the focus of the work, and to arrange reasonable and effective teaching task according to the actual the situation.

2.4 The Online Time Management

The long learning management module is used to record the length of time students in the system. The data reflects the continuity of their learning process, and has the appropriate oversight mechanisms. The calculation of the learning time is the different between the time of starting learning content and the time of exiting. Theoretically speaking, the longer a student learn discipline, on the one hand, the more thorough understanding, the more firmly grasp, from the other hand, it also reflects the attitudes of students and the degree of the teachers' task [2]. Of course, in order to prevent students from speculative psychology, when the user does not operate the system in a period of time, the system will be appropriate message. The interval time, from the message appears to it be closed, will not be include in the learning time. As for the so-called interval time, in order to avoid the conventional teaching time and recess time are included in the learning time, the each interval time generated within a random integer (30, 45).

2.5 The Learning Process Management

The learning process management module's function is to prompt the user last study progress, and update the new one. The implementation process is that, when student end of the current subject learning, system will update their new courseware currently knowledge nodes and the number of the new courseware page into the database. If the student login this system in the next time, the system will extract the latest data from the database and displayed in the form of a dialog to them. While the teacher can also view this feature to adjust the teaching schedule, and carry out more targeted teaching.

2.6 The Homework Management

The homework management simulates the actual homework of the teaching process, the content covers the main knowledge of the each chapter, that makes students better understand the application of the relevant knowledge. After studying the each chapter's knowledge, students need to complete the corresponding chapter exercises. The teachers will published the homework files to the server, and the students download those files from their teaching platform client. Students should upload their files after they finish the homework, and teachers will download those to marking. For late homework marking and correction are also in this form.

2.7 The Online Discussion Management

Online discussion management will record the stat of students' posts and replies in the forum of the system. In the forum, teachers regularly publish some information or a related study and discussion of learning content, which assists students to better understand the relevant knowledge and builds up a platform to communication with the teacher after class for them. System will record each student's posting, if one's selected as essence, it will be in the students' grades. Through this form of network brainstorming, it established a relaxed and pleasant atmosphere for learning and discussion but a good relationship between teachers and students.

3 The Analysis of System Innovation

The biggest innovation of this system is the feedback mechanism. By the help with recording their daily learning, students and teachers will find the problems during the learning process, and development of response measures timely, so that to achieve real-time effective teaching purposes. Based on the reflection situation of the above managements, teachers score for students' grade. So pay attention to the evaluation process of daily learning process is more objective truth. The students' grades in addition to the above results, it will also include the daily test scores, eventually in the form of a graph showing. And the students, on the one hand, also can be more intuitive to see the trend of learning state of their own, in order to summarize and reflect the individual learning situation conveniently. On the other hand, teachers can find the students' problems in those data, seek teaching focus and achieve the best result of teach students in accordance with their aptitude.

The learning process in the form of graphs to present to the user is another major innovation system, it is taking into account the effect produced by the Graphic Organizers on process management. Generally speaking, graphic organization is to use visual way to represent knowledge, concepts, or graphical structure view, order or process. It can be used for a variety of learning activities, such as brainstorming, idea generation, analysis of information, organization of information and expression discovery, etc. It also helps learners to enhance interest in learning, stimulate the motivation, reduce or release boredom, improve recall rate, clarify information, organizational thinking and promote understanding [3]. Graphic organizer of a recognized feature is that it can show learners thinking process "logic" and "integrity", clear the extent of the understanding and insufficient [4].

4 Conclusion

The learning process management system is originally designed to manage learning process of the students, to guide students to effective learning and foster a good learning ability. Based on this new way of weakening the evaluation of traditional examination, enhance the fairness and scientific. The difference between this system and the current teaching system is that, it focuses on the process of the whole learning

management, and always accompanied by the students. On the one hand, it makes the learning process digitized, objectively feedback student learning, and more effectively assess their learning status. On the other hand, it provides an accurate and effective feedback information and guidance on the relevance and effectiveness for teachers. Not only to share the tasks of teachers, but also allow them to carry out selective teaching, the maximum meet the actual needs of students. In the subsequent version of the system, we will further expand the system monitoring mechanism, besides, rich the way of interaction with the user and the evaluation methods of the system, so that to meet the needs of the market and users.

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