A Design of Educational Game with the Function of Strengthening Memory

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Abstract. In vocational colleges, many students do not like to learn theoretical knowledge. Students are easy to forget the theories learned in class, which would limit their skill level. This paper presents a design of the educational game system. This system provides a ",(1/2) n+2" type of strengthening memory function to help students to grasp the theoretical knowledge.

Introduction

In vocational colleges, many students do not have the habit of previewing before class and review after class, they are often only interested in the actual operation of the course content, but it is easy to forget the theoretical knowledge. However, if do not grasp the theoretical knowledge, students will be limited to the level of skills, cannot be raised to a certain height.

On the other hand, the campus students indulge in the game are more serious. If these theoretical knowledge into the network game, and increase the functional design, strengthens memory in the game system entertaining, make teaching more closely to students, can improve the teaching effect and quality of personnel training.

Overall Construction of the Educational Game

The construction of online courses in our country has made great progress. Many colleges and universities have their own online course platform. The educational network game proposed in this paper will be combined with the existing online course platform:

1. In the course of the original network operations and exercises in the content, the new increase in the game mode option. Students choose the option, will enter the web game interface. Transform the traditional exercises into small games.

2. In the main directory of the online course, increase the game teaching menu, in this directory, students can choose to enter the "Group Game" or the "RPG Game". In the "Group Game", a few players into a group, usually in the order of the regular operation of the game, the server side of the game needs to deal with relatively small amount of data; In the "RPG Game", students can communicate with each other to complete the task of the game, to visit the show and so on, the game server needs to deal with a large amount of data information.

3. The result of the exercises will be displayed in the game content, and the result will be recorded in the database system. After statistical analysis, the software system gives the rank feedback, which is a reference for teacher evaluation.

A "(1/2)n + 2" Type Design of Strengthening Memory Function System

The game system, according to the characteristics of the memory of the majority of students, set up a "(1/2)n+2" type of function to strengthen the memory. The strengthening memory function is divided into two processes, one is for the final examination of the knowledge course of the "(1/2)n" type of strengthening memory, the other is in the end of the course of the "+2" supplementary strengthening memory.
The "(1/2)^n" Type of the Strengthening Memory

This process is mainly aimed at the final exam, to help students save time for review, effectively improve the results, and enhance the confidence of students. The process of design idea is to constantly review time is divided into two parts by cutting, two time fractional (equal distribution) memory principle, constantly narrowing the scope of review, the "Analog Electronics" course as an example, explains the design principle of this function.

Before the "Analog Electronics" course, the game system has the relevant information in the course of knowledge points and exercises in the database. Assuming the current "Analog Electronics" courses to explain the sixth section, this section requires students to master 5 new knowledge points, there are 80 days before the final exam.

1) Preview
Before class, the game system platform based on pre-stored information, automatically generate the game of the 5 knowledge points, and tips for students to preview. Since then, until the first time to review the time point, the game platform no longer requires students to review the 5 knowledge points.

2) First review
After 40 days, the middle time of the preview time and the final exam time, the game platform will guide students to review the 5 knowledge points for the first time. System platform will integrate the 5 points of knowledge into the "Group Game", so that students in the game to review the process of knowledge. Moreover, the game system will record the student's review of the situation, marking the students can grasp the knowledge points.

This hypothesis, a student (A) can answer the game exercises corresponding to 1 knowledge point. Then, according to the physiological characteristics of general memory of the students, the student (A) to study the 5 knowledge points in 40 days ago, today he is able to grasp the knowledge points, and once again the memory, then after 40 days (that is, the day of the examination), the student (A) can still remember this knowledge points.

3) Review again
Again after 20 days, the middle time of the last review time and the final exam time, the system guide students to review again by the "Group Game". This time, the system only provides the game corresponding to the 4 points of knowledge, if the student has mastered the knowledge of 2 points, then the system will also have to mark the knowledge points.

4) Continue review
According to the "(1/2)^n" form, after 10 days, 15 days, 17 days...... , the system will guide students review. Time interval of review is shorter and shorter. The scope of review continues to shrink, review more and more relaxed.

The "+2" Type of the Strengthening Memory

Survey records show, after "(1/2)^n" type of game review. Most of the students have a significant improvement in the final grade, greatly increased the students' learning confidence. After this, at the middle of the end of the semester and before graduation, as well as 2 months before graduation, the system will be once again through the "RPG Game" for students to strengthen the review 2 times. In this way, most students can firmly grasp the necessary theoretical knowledge, the whole process of the system operation process as showed in Figure 1.
Summary

Generally speaking, the educational game can be used as an important supplement to the teaching process. Through the form of the game to complete a number of teaching activities, to attract students' interest. Strengthen memory function of the system, can effectively help students to keep in mind the theoretical knowledge, improve the skill level. This game system can improve the quality of school education and teaching, but also to promote the construction of the characteristics of the campus culture, and create a good school atmosphere.

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