

Research on the Application of Gamification Teaching in Information Technology Courses of Secondary Vocational Schools

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Abstract

This paper aims to study the application of gamification teaching in information technology courses of secondary vocational schools. Firstly, the concept and connotation of gamification teaching are expounded. Secondly, based on the analysis of the current situation of information technology courses in secondary vocational schools, the author puts forward the application of gamification teaching in the four stages of this course, namely, game introduction and interest stimulation; Skillfully use mechanism, acquire knowledge; Win-win cooperation, internalizing knowledge; Fun evaluation, extend knowledge. Finally, this paper analyzes and summarizes the advantages of gamification teaching in information technology courses of secondary vocational schools, hoping to provide ideas for front-line teachers to carry out teaching reform.

Keywords

Gamification of Teaching; Secondary Vocational Information Technology Course; Applied Research.

1. Introduction

As a public basic course compulsory for all majors in secondary vocational schools, information technology course is an important course for cultivating students' knowledge and skills of applying information technology. However, the current educational situation shows that there are some teaching problems in the information technology courses of secondary vocational schools, and the traditional indoctrination teaching can no longer meet the needs of students' development. Gamification teaching usually adopts interesting teaching methods to guide students to achieve teaching goals. Several studies have confirmed that gamification teaching has a positive effect on improving students' learning enthusiasm, participation and classroom satisfaction. Therefore, this study applies gamification teaching to information technology courses in secondary vocational schools, and proposes four teaching stages.

2. Overview of Gamification Teaching

2.1. Concept of Gamification Teaching

Gamification teaching refers to learning the concepts of doubt setting, challenge and autonomy of games, hiding teaching objectives in game activities, and adopting corresponding gamification teaching strategies according to learners' characteristics and teaching content, so that learners can acquire knowledge, improve skills and cultivate their sentiment in a relaxed state [1]. In short, gamification teaching is to add gamification elements in the teaching process, so that students can acquire knowledge and improve skills in a relaxed and pleasant learning atmosphere, so as to achieve teaching objectives.

2.2. Connotation of Gamification Teaching

The "game" in gamification teaching includes both electronic games and students' activity games. On the one hand, gamified teaching relies on electronic games. Teachers choose appropriate electronic games according to the teaching content, and students master knowledge and skills through games. On the other hand, teachers can design reasonable classroom game activities according to the teaching content, including the introduction of game mechanism and game elements, such as points, leaderboards, badges, competition and so on. Students play games to learn in class, not only gain knowledge, but also harvest the fun of learning.

3. Analysis on the Current Situation of Information Technology Courses in Secondary Vocational Schools

3.1. Poor Learning Autonomy of Students

Most of the secondary vocational students are in the 15-18 age group, and the students at this stage have a slightly poorer self-control ability. At the same time, secondary vocational students do not pay enough attention to information technology courses. They only use the time in class to complete learning tasks, and almost never complete independent study assignments after class, and they are not motivated enough to study information technology courses. Therefore, it is necessary for teachers to take effective teaching methods to enhance students' learning motivation, so that students can learn actively and experience the fun of learning.

3.2. Single Teaching Methods and Means

Secondary vocational information technology classroom teaching mainly adopts courseware explanation and computer operation practice. For the theoretical knowledge, teachers mainly explain it through courseware, and the practical operation content is generally imitated by students after the teacher explains. This traditional monotonous teaching method can not well promote students' understanding and internalization of knowledge, but also cause students' low interest in learning, poor initiative and other problems. At the same time, this kind of teaching mode is centered on teachers' imparting knowledge, which is not conducive to the development of students' innovation ability. Therefore, teachers urgently need to change the traditional teaching mode, change the teaching concept and carry out teaching reform.

3.3. Obvious Differences among Students

In the information technology course teaching of secondary vocational schools, the difference of students is mainly manifested in two aspects. One is the difference in students' ability to operate computers. Some students have been exposed to computers since primary school and are very familiar with basic operations. However, there are also a number of students, due to the constraints of their family or previous school facilities, with little access to computers, basic typing practice is very difficult for them. The second is the difference in students' learning styles. Some students are cheerful, willing to communicate with their classmates, and prefer group cooperation to complete learning tasks. Some students prefer to think independently and complete tasks independently. Therefore, teachers should pay great attention to the individual differences of students and provide targeted guidance to avoid more serious polarization.

4. Application of Gamification Teaching in Secondary Vocational Information Technology Course

4.1. Game Introduction to Stimulate Interest

Classroom introduction is an introduction link carefully designed by teachers according to the teaching objectives and teaching material content before learning new knowledge. The successful introduction of a class can stimulate students' thirst for knowledge and make students' thinking in a highly concentrated and stable state, thus laying the foundation for the learning of the whole class [2]. The introduction of games is beneficial to improve students' interest in what they have learned, thus improving the teaching quality of the whole lesson. Before the course starts, teachers can make micro-lectures, PPT or other related materials according to the relevant teaching content, and upload these materials to the gamification platform in advance. Students can log in to this platform through mobile phones or laptops to browse, download and learn. The platform will score points according to the browsing time and times of students, and students will be given corresponding learning badges when they reach a certain number of points. For example, when studying the section "History of Computer Development", teachers upload learning materials to the gamification platform, and students can browse the materials to obtain points. When the points reach 5, the platform will issue "early bird badges" to students. At the beginning of the course, the teacher require students to complete the pre-class quiz on the gamification platform. Through the pre-class gamification test, teachers can not only master students' learning situation and give targeted explanations, but also students can get corresponding points and badges, which can improve their enthusiasm and confidence in learning. The teacher can also carry out the corresponding game-type situation introduction in the classroom introduction link according to the teaching content, select the game or theme that the students are interested in to set up the situation, pave the way for the introduction of the teaching content, and create a relaxed and pleasant classroom atmosphere, so that the students are happy in it.

4.2. Use Game Mechanics Wisely to Gain Knowledge

Some studies have pointed out that the use of game mechanics can satisfy the deep internal drive of human beings [3]. Game mechanics generally include scores, levels, challenges, leaderboards, rewards, and more. In classroom teaching, teachers can make full use of appropriate game mechanisms to enhance students' initiative in learning and guide them to actively complete learning tasks. At the same time, teachers should also pay attention to the selection of game mechanism to be appropriate and reasonable, suitable for the current teaching activities, and avoid the situation of blindly emphasizing the sense of game and ignoring the teaching content. For example, when learning the content of "base-to-number conversion", teachers can divide practice questions into different levels, after students complete low level subject can enter into high-grade answer interface, and real-time display in the main interface of students are in grade or integral ranking information, make full use of the secondary vocational students' psychological competitive nature, and complete learning tasks in a tense and pleasant game atmosphere.

4.3. Win-win Cooperation and Internalized Knowledge

Cooperative learning can not only exercise students' ability to collaborate and communicate, but also enhance students' collective sense of honor. When the group cooperates to complete the learning task, each student can play his or her own role and participate, so as to realize their own value, enhance their self-confidence and sense of honor. After learning the basic knowledge of theory, teachers can divide students into groups of 3-5. When grouping, teachers can make heterogeneous groups according to the characteristics of each student, and then students can exchange a small part voluntarily. When conducting practical exercises, teachers

can introduce the game concept of competition, cooperation, and reward and punishment mechanism to realize intra-group cooperation and inter-group competition. Assign a group leader for each group, each student in the group has their own small tasks. After completing the whole task, the teacher can organize students to show and explain on stage, and give certain rewards and punishments according to the completion of the task and display.

4.4. Use Fun Reviews to Extend Knowledge

The evaluation of students should be carried out from multiple perspectives, multi-subjects and diversification. First of all, teachers should observe and record students' performance in the whole game activities, including not only the scores and grades of students in the game activities, but also the changes of students' emotions, attitudes and values. In addition, by recording the whole process, teachers can make accurate summaries for different students to let students know their problems in the game, promote further reflection, and lay a foundation for better participation in learning in the next step [4]. Secondly, the evaluation should pay attention to the combination of process evaluation and summative evaluation. There are not only teachers' evaluation of students, but also evaluations among students. Finally, teachers can encourage and guide students to summarize lessons, share their feelings in game activities, and summarize their experience of gamification learning.

5. Conclusion

Gamification learning realizes "learning by playing", students can experience the fun of learning in a relaxed and pleasant game atmosphere, enhance self-confidence and sense of honor in cooperation and communication, and constantly reflect and progress in competition. Secondary vocational students, who are playful and competitive, are very suitable for learning in games and playing in learning. In addition, gamified learning can not only allow students to enjoy the fun of learning, but also stimulate students' creative thinking and cultivate students' problem-solving ability. However, good teaching practice still needs the continuous exploration and improvement of researchers. It is hoped that this research can provide some ideas for front-line teachers to carry out gamification teaching practice.

References

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