Application of Improved BOPPPPS Model in Classroom Design

Liu-Lei SHEN, Xu-Dong HU and Zhong-Xin QIN

Department of Military Practice Education, Undergraduate School, National University of Defense Technology, Changsha, 410003, China

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Abstract. The BOPPPS model is a new teaching model with six stages. This model is more suitable for some independent courses, but for some of the more complex courses. This model is not conducive to the setting, which is easy to cause. It may fragment course knowledge and make it difficult to establish a coherent and holistic knowledge structure in the students' mind. The BROPPPSA model is proposed in this paper based on the BOPPPS model. The new model adds the review and advance preview stages into the old model. It could build a closer connection with neighbor lessons and makes all course content a whole.

Introduction

In recent years, the BOPPPS model is a popular teaching model in many schools in Canada. The model is based on constructivism and communicative methods, emphasizing the closed-loop teaching process of student participation and feedback [1]. To improve teaching results, the BOPPPS model mobilizes the enthusiasm and initiative of students through interaction between students and teachers [2].

The BOPPPS model is developed for micro-courses. Each course is a fragmented knowledge point. It is difficult to construct a systematic knowledge system. In this paper, the model is developed into BROPPPSA model by adding review and advance preview stages. The BROPPPSA model not only has feedback and turning in each lesson, but also forms a whole context within the curriculum. It is more helpful for students to construe a more complete knowledge system.

BOPPPS Model

Synopsis

The BOPPPS model divides the teaching content into several relatively independent small units, each of which is maintained for 10-15 minutes. Each small unit is consisted of six stages. They are Bridge-in, Objective, Pre-assessment, Participatory, Post-assessment and Summary. Firstly, the attention and interest in the knowledge of the students are aroused in the Bridge-in stage. Then it shows the learning objectives and let the students clarify the direction of the course content. Through the Pre-assessment stage, the teacher can understand students’ knowledge reserve on this lesson. Based on the results, the teacher can adjust the course content in the next. Participatory, the most critical stage, is encourage students to think actively by designing study situations and activating communication between students and teachers. Then combine the Post-assessment results to explore the students' knowledge mastery. Finally, the teacher summarizes the content of the lesson in Summary stage.

Advantages and Weaknesses

The BOPPPS model provides a good model for explaining an independent knowledge point in one class. It may allow the teacher to teach the contents of a lesson orderly and completely. Through careful curriculum design, the students can master the knowledge in the interlocking teaching. Zhou et al. [3] used the BOPPPS model to design the teaching process of the optoelectronic technology...
course from the basic theory construction and equipment application requirements of professional technology course. It was found that it can mobilize the students' enthusiasm and initiative effectively. Liu et al. [4] applied the BOPPPS model to the C language course teaching. The teaching practice proved that the BOPPPS model can enhance the participation of students and improve the teaching effect of the course. Li [5] set up 135 students into the test group (66 people) and the control group (69 people), using the BOPPPS model and the traditional way of teaching respectively. The results of the questionnaire are used to prove the teaching effect of the BOPPPS model.

Although the BOPPPS model is being used more and more widely, some of its drawbacks are also emerging. One of the most obvious drawbacks is that the model is easy to fragment the learning content. It makes students only knowing the local, not knowing the whole. In order to keep all the teaching content coherent, many teachers are using a developed BOPPPS model added the review or preview stages: Wu et al. [6] applied the BOPPPS model into the classroom design of MOOC, and added the content of reviewing the pre-requisite knowledge in the Pre-assessment stage. In the final summary session, the content of the next lesson was added to integrate knowledge of two lessons. Zheng et al. [7] combined the Bridge-in stage and Pre-assessment stage, focusing on the establishment of new and old knowledge links through experiments and heuristic questions. Based on the BOPPPS model, Jiang [8] added the preview stage and applied it to the teaching reform of PHP website programming technology. It was found that the guided preview can promote the effect of Bridge-in stage and participatory stage of the next lesson.

**Improved BOPPPS Model, BROPPPSA Model**

According to Ausubel's meaningful learning theory, students can master the learning content more quickly by establishing new and old knowledge links. The BOPPPS model has no review and advance preview stages, and lacks the link between different classes, which easily leads to the fragmentation of knowledge and influences students' learning efficiency. The BOPPPS model expands into the BROPPPSA model by add review and advance preview stages in each lesson. To consolidate the learning effect, the old knowledges are review with students briefly at the beginning of each class. And advance preview stage will be added at the ending of the class to direct students to explore new knowledge points and grasp the intrinsic connection between teaching content. In this way, each class has a head and a tail, and all classroom content is closely related.

![Comparison of BOPPPS Model and BROPPPSA Model](image)

As shown in Fig. 2, in the traditional BOPPPS model, there is no clear demand for the review stage and advance preview stage. Teachers are likely to forget about those process when design class teaching. It will result in a messy content and difficult to form a whole. The BROPPPSA model proposed here can explore a more reasonable teaching model, expand the scope of application of the BOPPPS model, and improve the efficiency of teaching.

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Summary

The BOPPPS model is developed for short course teaching. When applied to a large-volume course, it is easy to cause the course knowledge to be fragmentization. This paper improves the traditional BOPPPS model by adding review stage and advance preview stage. The BROPPPSA model is designed to improve the bonding strength between different knowledge points of the course. The new model is more suitable for courses with larger volume, longer time span and more knowledge.

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