Analysis of the Application of Mixed Teaching Mode in the Teaching of Organic Chemistry

Ruiju Ma1,*

1Honghe Health Vocational College, Yunnan, China

*Corresponding author e-mail: 1004280469@qq.com

Abstract. The emergence of mixed teaching mode is an important educational reform in the educational field. In view of the complex problems encountered in the teaching of organic chemistry in some schools at present. In this paper, the teaching of chemical content is taken as an example to explore the main application of hybrid teaching method in chemical teaching. The combination of online learning and offline learning is used to realize flipped classroom teaching. Change the classroom based on teaching into the classroom based on students. According to a large number of practice, the application of hybrid teaching method in the teaching of organic chemistry is very good.

Keywords: Mixed Teaching, Organic Chemistry, Application

1. Introduction

A long time ago, some foreign chemistry department training institutions found the defects of offline teaching. They worked hard to improve their shortcomings. However, they found that the defects of offline teaching could not be improved. Only through online teaching can we make up for the shortcomings of offline teaching. Therefore, some foreign scholars put forward the concept of blended learning.

The concept of blended teaching is a similar teaching method based on the concept of blended learning. According to the literature, the idea of this teaching mode is to combine the advantages of traditional learning mode with the advantages of online learning. We should not only give full play to the role of teachers' guidance, but also fully reflect the importance of chemistry students as the main body.

2. Process design of Chemistry Teaching Based on mixed teaching mode
2.1. Preparation for teaching

In the stage of teaching preparation, teachers should organize curriculum resources and analyze students' situation. The arrangement of curriculum resources generally includes the basic information of curriculum, the arrangement of teaching courseware, the arrangement of key and difficult knowledge of chapters and teaching videos, etc. The analysis of students' situation mainly includes students' personal information, interest in learning chemistry and evaluation of chemical basis. After teaching preparation, teachers can design the teaching process.

2.2. Design of teaching content

The learning goal of organic chemistry is multi-dimensional. According to the different learning interests of students, the learning objectives of organic chemistry can be roughly divided into knowledge objectives and skill objectives. Knowledge goals can also be called academic goals. It mainly focuses on the cultivation of students' theoretical knowledge of chemistry. Skill goals can also be called practice goals. It is necessary to study chemistry in chemical laboratory. The goal of skill is to cultivate students' experimental ability and practical ability.

2.3. Task list of online learning

In fact, most of the students in the chemistry department have weak chemistry foundation. In order to optimize the effect of chemistry teaching, teachers should make different types of students' learning task list according to different teaching objectives. We can use the form of questions to guide students' online learning. On the other hand, the production of task list can also help teachers to urge students to learn.

2.4. Online learning before class

Teachers can divide students into different study groups. The person in charge of each group shall be responsible for supervising the learning of the students in the group. Before class, the group leader should urge the members to preview online before class. After the preview, each team member asks different questions. The leader reported the problems to the teacher.

2.5. Classroom teaching

After the students' preview, the teacher's classroom teaching does not need systematic knowledge teaching. According to the design concept of hybrid teaching form, classroom teaching should be divided into four main tasks. First, the group leader reports the learning situation and difficult problems of the group members. Second, students discuss different groups in groups. Third, students step on the stage to explain the problems to others. Fourth, the teacher answers questions and makes a proper summary (see Figure 1).
3. Evaluation of teaching effect

In order to fully verify the teaching effect of the mixed teaching mode, we can use two students of pharmacy major to carry out a control experiment.

3.1. Analysis of final examination results

According to the above table, we can find that the performance of the experimental class with mixed teaching mode is significantly higher than that of the ordinary class (see Table 1). This situation can show that the hybrid teaching mode can improve students' test scores, and it can help students better master the theoretical knowledge of chemistry.

| Order | Grade of experimental class | Ordinary class score | Variance |
|-------|----------------------------|----------------------|----------|
| 1     | 75 ± 10                    | 63 ± 14              | < 0.05   |
| 2     | 76 ± 10                    | 60 ± 14              | < 0.05   |

3.2. A survey of students

The emergence of mixed teaching mode makes the time of classroom teaching less and the time of students' autonomous learning more. In order to better understand the learning effect of students, we use the way of questionnaire survey to investigate students properly (see Table 2).

| Option                | Helpful | Commonly | No help |
|-----------------------|---------|----------|---------|
| Stimulate interest    | 89.9%   | 6.1%     | 2.09%   |
According to the information in the table above, we can find that the mixed teaching mode can improve students' enthusiasm for learning chemistry. In general, it can effectively help students to learn organic chemistry.

4. Reflection on Hybrid Teaching

Why can blended teaching be accepted by students? Why can it achieve good teaching effect? I think the reasons may be as follows.

4.1. Establishment of learning task list

The formation of task list can guide students' learning direction and urge them to study independently. Students become motivated to learn. The purpose and direction are very clear. On the other hand, the establishment of task list also shows the ability of teachers to control the content of teaching materials.

4.2. Advantages of group learning

The emergence of group learning can stimulate students' enthusiasm for learning. Some students with poor foundation have poor self-control, and they can't complete the teaching task independently. However, group learning can indirectly supervise students' learning.

5. The significance of the application of Hybrid Teaching in the teaching of Organic Chemistry

5.1. Analysis on the implementation of online teaching

According to the above analysis, we can find that blended teaching refers to the combination of online teaching and offline teaching. The application of this method forms a relatively new teaching method. This kind of teaching method has epoch-making significance. Students can find the learning resources they are interested in through the online teaching platform for happy learning. There is no doubt that online teaching can stimulate students' interest in learning. However, online teaching can't provide students with the same cohesive force and solidarity. The lack of emotional communication between students and teachers is also part of its disadvantage.

5.2. Analysis on the implementation of offline Teaching

Offline teaching can provide students with a good learning environment. Teachers can urge students to study. There is no need to worry about the class cohesion and the cultivation of the spirit of solidarity and mutual assistance. However, this kind of supervised learning may cause students to be bored with learning. This kind of emotion is not conducive to the future development and autonomous learning of students.

| Improve learning efficiency | 85.1% | 6.5% | 4.43% |
|-----------------------------|-------|------|-------|
| Improve the ability of autonomous learning | 89.1% | 5.1% | 2.09% |
| Improve analysis ability    | 86.5% | 10.3%| 3.12% |
5.3. The advantages and significance of Hybrid Teaching

The hybrid teaching method extracts the advantages of online teaching and offline teaching, and discards their disadvantages. Hybrid teaching can not only help students to improve their interest in learning, but also help students get the development of teacher's spiritual communication. Therefore, I think the role of hybrid teaching methods in the process of organic chemistry teaching is unique.

6. Conclusion

In recent years, the number of hours of chemistry courses in many schools has been decreasing. In order to help students master the main knowledge of chemistry learning better, teachers must update their teaching ideas. Hybrid teaching method is novel, but it is also an efficient teaching method.

References

[1] Hui-Yong Z. The Application of Visual-spatial Intelligence in Organic Chemistry Teaching[J]. Guangzhou Chemical Industry, 2012.

[2] Xi-An L I. Analysis of application of multimedia techiuques in organic chemistry teaching[J]. Journal of Yanan University(Natural ence Edition), 2004.

[3] Hei X M, Xing D X, Liu J H, et al. Application of Mixed Teaching Mode Based on Online Course Platform in Basic Organic Chemistry Experiment Teaching[J]. 2019.

[4] Smith, Stanley G. The use of computers in the teaching of organic chemistry[J]. Journal of Chemical Education, 1970, 47(9):608.

[5] Chun-Hua W, Mei-Ze Z, Hou C, et al. Exploration and practice of teaching mode of the organic chemistry experiment[J]. experimental technology and management, 2007.

[6] Hei X M, Xing D X, Liu J H, et al. Application of Mixed Teaching Mode Based on Online Course Platform in Basic Organic Chemistry Experiment Teaching[J]. 2019.