Advances in Social Sciences Research Journal – Vol. 12, No. 01
Publication Date: January 25, 2025
DOI:10.14738/assrj.1201.18140.
Zhang, Z., Sun, Y., Zhao, W., Cui, Y., & Sun, L. (2025). The Study of Strengthening Skills in High School Chemistry Micro-Lattice Teaching. Advances in Social Sciences Research Journal, 12(01). 64-70.

The Study of Strengthening Skills in High School Chemistry Micro-Lattice Teaching

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ABSTRACT

At present, many chemistry normal students in China know little about strengthening skills and how to use intensive skills in teaching. However, to be a good chemistry teacher, you must master the strengthening skills. Because the appropriate and reasonable use of strengthening skills in chemistry class can focus students' attention, help students to maintain correct learning behavior, and inhibit or improve bad learning behavior. Chemistry micro-grid teaching is a practical training activity, which can effectively exercise and improve the various teaching skills of chemistry teachers or normal university students. After micro-teaching, normal university students can effectively improve and enhance their own teaching skills in a relatively short period of time. This paper introduces the research status of chemistry micro-lattice teaching and strengthening skills, briefly expounds the related concepts of chemistry micro-lattice teaching and reinforcement skills, and analyzes the individual cases of cultivating strengthening skills through chemistry micro-lattice teaching.

Keywords: Micro-teaching, Strengthening skills, Chemistry normal students.

INTRODUCTION

Since the implementation of the reform and opening up, China's economy has been growing rapidly, and the need for high-quality talents has been increasing. Since the 18th National Congress of the Communist Party of China, the development of education has been valued by people from all walks of life. President Xi Jinping has repeatedly emphasized the importance of developing education on various occasions, and the introduction of the "double reduction policy" has pushed the social attention to education to a very high position. The cultivation of talents depends on education, and the key to education lies in teachers, while normal university students are the main force of future teachers [1]. Micro-grid teaching is a kind of practical training activity, which can effectively exercise and improve the various teaching skills of teachers or normal university students. In addition, micro teaching can also help normal university students to accumulate certain teaching experience, so that they can enter the role of teacher at a faster speed when entering the formal classroom teaching in the future.

Chemistry normal students are not unfamiliar with the meaning of the word reinforcement and strengthening skills. However, because normal university students do not have many opportunities to go into the real classroom teaching, the lack of teaching experience, normal university students do not know how to reasonably use intensive skills in chemistry class. Of course, the reason why chemistry normal students do not know much about strengthening skills is partly that they have to learn a lot of teaching skills, and strengthening skills are only one of them. Compared with imported skills and other skills that are easy to feel, the strengthening skills are often easily ignored. However, in the front-line classroom teaching process, the chemistry teachers will usually unconsciously use the strengthening skills in the classroom. Such as chemistry teachers in making PPT usually key words of chemical concept use more prominent mark, or in the classroom to the difficulty, unconsciously will improve tone and slow down the speed, or even repeat several key knowledge, or let the students practice in the class corresponding to the class knowledge chemistry topic, etc. These are actually the use of enhanced skills in the front-line chemistry classroom teaching. From this, it is not difficult to see the importance of the use of intensive skills for chemistry classroom teaching.

RESEARCH SIGNIFICANCE AND CURRENT RESEARCH STATUS

In 1963, The American Doctor of Education Allen and his colleague A.Eve first proposed and developed the micro teaching. Later, the micro teaching in Britain, Germany and other countries gradually introduced the micro teaching. By the mid-1980s, China began to introduce micro-teaching, and normal colleges and universities across the country also gradually opened micro-teaching course [2]. When searching the literature in the CNKI database, the author used "micro teaching" as the search keyword. Through the analysis of search results, we can know that the main research direction of most scholars on micro teaching is how to make micro teaching influence or train normal students, specific micro teaching to a certain subject, and how to evaluate micro teaching skills. Among them, the research literature on micro teaching specific to the corresponding subjects is mostly focused on mathematics, English, biology and other subjects, while relatively less specific research on chemistry, and the theoretical and practical research on strengthening skills in micro teaching in chemistry is even more lacking. However, the normal colleges or universities with chemistry normal majors for the training of chemistry normal students, should pay attention to the combination of theory and practice, keep pace with The Times, and form a micro teaching mode with professional characteristics [3].

When searching literature in CNKI database, 45,855 search results were obtained, of which 33,790 were Chinese literature; but with "enhanced skills", only 944 search results were found, of which 703 were Chinese literature. From the analysis of the data of the search results, it can be seen that the research on reinforcement skills at home and abroad is included in the research of teaching skills, and few alone regard reinforcement skills as the research topic. However, as one of the teaching skills, strengthening skills are a necessary skill for teachers to stimulate learning motivation, arouse learning interest, and encourage students to focus their attention on teaching activities. Strengthening the theoretical research on strengthening skills can help teachers to better master the meaning of strengthening skills and their application methods, and then flexibly apply strengthening skills in the actual classroom teaching process.

The research significance of this paper is to explain the concept of chemistry micro teaching and strengthening skills to deepen the theoretical understanding of chemistry micro teaching and reinforcement skills; and to provide teaching cases to understand how to use chemical micro teaching.

DEFINITION AND FUNCTION OF STRENGTHENING SKILLS

Strengthening skills refer to a series of behaviors used by teachers in classroom teaching to enhance and promote students 'response to teaching and maintain the motivation of learning, which can make students' good behavior repeat and inhibit bad behavior [4]. Specific to chemistry, chemistry classroom strengthening skills refers to the chemistry classroom teaching, chemistry teachers use a variety of methods and means to concentrate students 'attention, stimulate students' enthusiasm for chemistry learning, so that students have correct behavior reaction.

In terms of classroom organization, teachers can use intensive skills properly and reasonably in chemistry class, which can concentrate students 'attention, stimulate students' enthusiasm for chemistry learning, and make them actively participate in teaching activities, so as to make our orderly progress in chemistry class. In the classroom teaching process, students need to learn a lot of knowledge, which requires students to focus on the classroom learning.

THE COMPONENTS AND TYPES OF STRENGTHENING SKILLS

Create opportunities. Reinforcement is only related to the response, and it occurs after the response. Therefore, in the teaching process, teachers need to use reinforcers (such as tests, experiments, questions and other stimuli or events that can enhance the response probability) to provide students with the opportunity to respond. Observe and judge the students' behavioral reactions. In the teaching process, teachers should observe and find as much each student's reaction to the reinforcer as much as possible, and be able to extract valuable reaction information, judge whether the students' behavior is correct, and then give appropriate reinforcement, adjust the teaching plan and methods in time to achieve better teaching effect. Choose the right way of reinforcement. After correctly judging students 'reactions, teachers need to choose appropriate reinforcement methods according to students' specific reaction results to strengthen students' behavior in time. Clearly indicate teachers' attitude. Generally speaking, the reinforcers given by teachers are somewhat difficult, so the students' responses are often tentative and unstable.

According to the specific way that chemistry teachers use reinforcement skills in the first-line classroom, reinforcement skills can be divided into the following types:

1. Language reinforcement: Language reinforcement refers to the teacher using language to evaluate students 'behavior reaction, give students a affirmation or negative, let students know the teacher's attitude towards their own behavior. Language is a carrier, can help teachers and students between the information transmission and emotional communication [5]. The language mentioned here refers to the oral language and the written language, so we can subdivide the language reinforcement again, that is, the written language reinforcement and the oral language reinforcement. Oral language reinforcement refers to the use of oral language to evaluate students' behavioral responses, including making positive or negative feedback [6]. Written language reinforcement refers to the comments written by the teacher to the students when correcting homework and reviewing examination papers.
2. Action reinforcement: Action reinforcement, also known as body language. It refers to the teacher's attitude, emotion and judgment of body movement, expression, gesture and other expressions to express themselves to students' behavior in class, and then strengthen students' learning behavior [7]. Action reinforcement is often intuitive image, teachers should pay attention to the teaching content in the use of adaptation, grasp the discretion, natural action, expression, do not exaggerate. In the teaching process, teachers can walk around in the classroom appropriately and reduce the distance between teachers and students, which can not only make the classroom atmosphere lively and harmonious, but also get feedback information from students. In the actual teaching process, the teacher's action reinforcement is often accompanied by language reinforcement. In this way, students can feel the affirmation or encouragement given by the teacher more clear and powerful, and get better reinforcement effect.
3. Sign reinforcement: Sign reinforcement refers to teachers 'use some eye-catching and prominent signs to strengthen students' correct learning behavior. For example, when teachers talk about the key points or difficult points, they can underline or mark the key knowledge, so as to strengthen students' attention to the knowledge points and deepen their impression of the knowledge. Teachers can also leave non-toxic and non-dangerous experimental products for students in the experiment class, which will not only deepen students 'impression of the experiment, but also improve students' interest in chemical experiment.
4. Activity enhancement: Activity reinforcement means that teachers take some activities as forcers and regulate students to participate in these activities independently to strengthen the learning effect. For the chemistry discipline, the three intensive activities of competition activities, tutoring activities and operation activities are the most often used by chemistry teachers in the class. The intensification of competition activities means to set up competition activities in chemistry teaching to stimulate students' interest in learning chemistry. Generally speaking, competition activities help to expand students' knowledge horizon, broaden the thinking of solving problems, and master a variety of ways to solve problems. The strengthening of operational activities means to let students operate related activities in class. For the chemistry discipline, the operation activity reinforcement is often used in the experimental classroom. In the chemistry experiment class, the teacher can ask the students themselves or design an experimental plan for the class together with the team members. After the teacher approves the experimental plan, the students can carry out the experiment according to the designed

URL: http://dx.doi.org/10.14738/assrj.1201.18140

experimental plan. In chemistry class, carrying out operation activities can stimulate students' enthusiasm for chemistry learning. In a specific operation process, students can experience the process of creating knowledge, and then deepen their understanding and memory of chemistry knowledge. Tutoring activities, also called role-playing activities, mean that teachers provide certain opportunities for students to be "teachers". For example, when a teacher finds that a student has his own original insight or novel solution to a problem, he should give students the opportunity to show their unique ideas.

STRENGTHEN THE SKILL APPLICATION POINTS

Chemistry teachers should pay attention to the following application points when applying reinforcement skills:

1. The purpose should be clear: When using reinforcement skills in chemistry class, chemistry teachers need to clarify the teaching purpose and reinforcement purpose. Teachers do not need to strengthen all the correct behavioral responses of students, but should choose those correct behavioral responses that meet the teaching goals according to the teaching objectives.
2. There should be differences and changes: As we know, students are self-conscious people, and the existence of individual differences makes each student have different preferences and acceptance degrees of reinforcement methods. Teachers should flexibly choose the reinforcement methods according to the characteristics of each student in order to achieve the best reinforcement effect.
3. Grasp the good opportunity: For short questions, students 'experimental operation and other situations, teachers should give immediate reinforcement to enhance students' impression. The understanding of complex problems or conceptual knowledge needs to wait for students to fully respond, before strengthening, to make the reinforcement more targeted [8].

CASE ANALYSIS OF STRENGTHENING SKILLS IN HIGH SCHOOL CHEMISTRY MICRO-LATTICE TEACHING

Teaching Process

[Teacher Question] How do you know the atomic structure of chlorine? Through the atomic structure of chlorine atoms, can students speculate what properties of chlorine gas has? In addition, we have studied oxygen in junior high school. What substances does oxygen belong to, what properties does it have, and what substances can it react with?

[Student activities] Listen carefully, recall the search of the existing knowledge, and answer the teacher's question: there are seven electrons in the outermost layer of chlorine atoms, it is easy to get one electron, thus forming a stable structure of eight electrons, so it has strong oxidation. Oxygen belongs to non-metal oxygen, it can react with metal iron, magnesium, it can react with non-metal hydrogen, C.

[Teacher explanation] The following teacher will play the experimental video of the reaction between chlorine gas and metal. Please observe the experimental phenomenon carefully and make a record.

[Student activities] Watch the experimental video carefully and record the experimental phenomenon.

[Teacher evaluation] The answer is very good. I can see that you have observed the experiment very carefully. The teacher is looking forward to your future performance.

[Teacher explanation] In the reaction of chlorine gas with sodium, iron and copper, we can see that there is smoke, but the color of smoke is different. Here students need to distinguish the color of smoke generated when chlorine gas reacts with different metals, and do not remember to mix.

[Teacher explanation] From the experiment just now, we know that chlorine gas can indeed have a certain chemical reaction with metal particles. So, what is the product of the reaction of chlorine gas and different metals? What are the characteristics? Now the teacher asked the three students to write the above three reactions on the blackboard, and mark the double-line bridge. Other students wrote on their own papyrus.

[Student activities] Write the chemical reaction equation and mark the double-line bridge

Teaching Effectiveness and Reflection

The classroom atmosphere is very active, and interact with students. Throughout the whole class, the use of reinforcement skills is very natural and smooth, and the teaching effect is good. Through the knowledge that students have learned (atomic structure, oxygen properties), it not only consolidates the knowledge learned, but also naturally introduces the main learning content of this lesson (what chemical properties of chlorine gas, which also belongs to non-metallic substances, has). Before playing the experimental video, the teacher's requirements (watch the experiment and record the experiment phenomenon well) are clarified through language reinforcement, so as to strengthen the students' attention and arouse their interest in learning. In the process of summarizing the experimental phenomenon, language reinforcement, action reinforcement and sign reinforcement (PPT to highlight the key experimental phenomenon) are used to affirm the students 'correct behavior and deepen the students' impression of the experimental phenomenon. In class, let the students write the reaction equation and the double line bridge. Through the strengthening of activities, enable the students to master the reaction equation of chlorine, sodium, iron and copper in the practice, and at the same time consolidate the REDOX knowledge learned in the previous chapters.

CONCLUSIONS AND OUTLOOK

Although reinforcement skills are easy to be ignored by normal university students, the appropriate and reasonable use of reinforcement skills in chemistry class can focus students' attention, help students develop to maintain correct learning behavior, and inhibit or improve bad learning behavior. Micro-grid teaching is a kind of practical training activity, which can effectively exercise and improve the various teaching skills of teachers or normal university students. In the micro teaching training of strengthening skills, normal university students can discuss and evaluate the teaching process with the group members, and timely understand their shortcomings in the teaching process so as to improve in the future teaching. The micro teaching uses advanced modern technology to record the micro teaching training class of normal university students, so that normal university students can more clearly and profoundly

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understand their advantages and disadvantages by observing their own classroom records, which plays an important role in improving the skills of normal university students.

The progress of The Times and the development of science and technology are closely related to the state of education. If the Times want to make progress, and if science and technology want to develop, education must continue to develop and cultivate higher quality talents for the society. Only by keeping pace with The Times and developing and improving can micro continuously develop [9]. It is believed that in the future, the research of strengthening skills in chemistry micro-grid teaching will get more attention from scholars, and strengthening skills will also get more attention from normal university students.

Fund Number: 2023 Undergraduate teaching reform research and practice project of Henan University (HDXJJG2023-045), 2024 Henan ProvincePractical Teaching Ability Enhancement Project for Teacher Education Majors - Chemistry Major at Henan University and Exploration and Practice of the Three in One Innovative Talent Cultivation of "College Research Institute Base" (2024SJGLX0043).

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