

The Present Situation and Prospect of the Use of the NWCA in Middle School Teaching

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Abstract: In order to explore the use of the NWCA (the notebook with wrong and corrected answers) in middle school teaching, this paper uses the method of literature research to study the attitude, method, effect and Prospect of the use of the NWCA of middle school students and teachers in Shanghai and Nanchong since 2009. The research found that most students have a positive attitude towards the NWCA, and teachers of different disciplines think that the NWCA is effective, but the way teachers and students use the NWCA still needs to be improved; the effect of using the NWCA is significant. In China, the research on the NWCA in middle school teaching is biased to mathematics, physics and other disciplines, lacking theoretical support. The research methods are mainly questionnaire survey, interview and observation, and there are few experimental research methods. Future research should focus on theory-based, multi-disciplinary research, the use of experimental methods to explore the effect and improvement measures.

Keywords: NWCA; Middle School Teaching; Literature Research Method

1. The general situation of the NWCA

1.1 The definition of the NWCA

The NWCA, defined from the Teacher's point of view, is a textbook that the teacher collates the typical mistakes in the feedback of students' work in order to find out the weak links in the students' learning process and improve the students' learning efficiency^[2]. From the student's point of view, it is a book that students use to record typical mistakes, reflect on mistakes, reduce the repetition of mistakes and improve their learning efficiency^[3]. From this, it can be seen that, for both the teacher and the student, the wrong questions are the booklets which collect the students' typical wrong questions and aim at improving the students' learning efficiency. Therefore, the establishment of the NWCA conforms to the new curriculum teaching request, therefore the research of the NWCA is of great significance.

1.2 The function of the NWCA

Researchers Kelly a. chillarge and others found that compared with error avoidance, error management can significantly improve learning test scores^[4]. Doerte heimbeck et al. Found that the short-term and medium-term performance of the subjects who have received error management training is better than that of the subjects who have received error prevention training and allowed to make mistakes without error management training^[5]. The scholar Chen Yihui believes that in mathematics teaching, the wrong question can be used as a resource. The correct use of the NWCA can not only improve the learning efficiency to a certain extent, but also improve the knowledge structure of students. If we can find out the root of the mistakes and draw lessons from the past, we can improve students' problem-solving ability^[6]. Qiu Yingdong pointed out that in English teaching, wrong questions can be used to explore the gains and losses in the teaching process, deepen teachers' understanding of students, improve teaching quality, enhance students' interest in learning, and cultivate their good learning habits^[7]. Yang Xiayue and others believe that in the teaching of classical Chinese, wrong questions can help students construct and update their knowledge system, promote students to correct their mistakes and reflect in time, and form new cognitive and learning strategies^[8]. Jiang Mengnan pointed out that in biology, the instinct of wrong questions reflects the learning situation of students to teachers, which urges teachers to adjust teaching strategies and improve the quality of teaching; the NWCA can cultivate students' habit of diligent reflection and improve the systematicness of students' learning of biological knowledge^[9].

To sum up, in Chinese, mathematics, English, biology and other disciplines, the NWCA plays an important role for both teachers and students. Teachers can understand students' mastery of knowledge through the wrong questions, so as to improve their teaching mode and improve the teaching effect. In the process of learning, students can review their mistakes, improve the efficiency of making mistakes, and improve their knowledge system.

2 The use of the NWCA

2.1 The present situation of the NWCA

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2.1.1 Teacher's attitude and way of using the NWCA

Xu Dong, a teacher in Jiangsu Province, observed that many teachers around him didn't record the wrong questions carefully. They didn't make up the wrong questions until they were checked by their superiors. There are also some teachers who just mechanically extract students' wrong questions, only undertake the task of carrying, lack of teachers' own thinking. Zhang Maopeng believes that many teachers are devoted to the sea of questions tactics, and they do not guide the students' wrong questions, ignoring the value and significance of the wrong questions. Ren Na found that teachers do not pay attention to the management of wrong questions, and the guidance of wrong questions management is single.

2.1.2 Students' attitude and way of using the NWCA

Many students just write down the wrong questions and don't form a good habit of reading the NWCA^[3]. Senior One students in an ordinary high school in Inner Mongolia do not avoid wrong questions emotionally (Ren Na's research on junior high school students also draws a similar conclusion), and generally realize the significance of wrong questions for learning. However, there is a lack of good awareness and systematic management strategy of wrong questions, and the value of wrong questions is not fully understood. In the attitude and concept of wrong question management, the excellent class is significantly higher than the ordinary class. The students with better learning are more inclined to complete the correction and reflection of the wrong questions independently, but they will also turn to the outside world for help when they encounter problems; the students with poor performance are lack of self thinking when they deal with the wrong questions, and they are not good at turning to others for help when they face problems. It can be seen that there is a certain correlation between academic performance and attitude towards wrong questions. Most of the students lack the guidance of reasonable and effective management strategies^[9]. Yang Qinfei's research found that the attitude of sophomore in a model high school in Nanchong, Sichuan is the most negative, and that of senior three is the most positive; in township middle schools, the attitude of science students is significantly more positive than that of liberal arts students. The male students' wrong question value consciousness and wrong question handling strategy are not as good as the female students. In terms of gender differences, Wang Ding's research results are similar to Yang Qinfei's, that is, girls' attitudes and strategies in error management are significantly higher than boys'. However, students and teachers generally hold a positive attitude towards the NWCA.

2.2 The effect of using the NWCA

Ma Li, a junior high school physics teacher in Yinchuan City, found that in her four classes, the improvement effect of the three classes using the NWCA was significantly higher than that of the other class without using the NWCA. The students of the three classes who use the NWCA are generally satisfied with it. The NWCA plays an important role in improving the physics performance^[1].

3. Suggestions and prospects of the research

3.1 Supported by theory

Most of the authors are in-service teachers with rich experience, so most of the articles are based on experience and lack of theoretical basis. I think that we can discuss how to form the NWCA suitable for students from the perspective of educational psychology. If there is theoretical support in the research, it will make the research fuller and more rigorous.

3.2 Carry on the research of multi-disciplinary NWCA

In the process of research, I found that most of the research on the NWCA is about mathematics, physics, English and other subjects, and the number of research literature on the NWCA is far ahead. However, there is little research on the NWCA of politics, history and other subjects. Is it that liberal arts does not need error books? I think that only scientific research can draw a conclusion. Therefore, we can carry out multidisciplinary research in the future.

3.3 Research methods need to be improved

Most of the existing researches are observation, interview, questionnaire survey, etc. most of the questionnaire methods are the attitude research of students or teachers on the NWCA, which is subjective, few of them objectively compare the effect of using it and setting methods of NWCA on learning effect. And the existing experimental research is only to compare the teaching classes of a teacher, and then compare the results before and after using the NWCA, and then draw the conclusion. So I think the rigor of the research methods needs to be improved.

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