Retraction

Retraction: Exploration of Teachers’ Effective Teaching Behavior in Mathematics Classroom Based on Big Data Analysis (J. Phys.: Conf. Ser. 1744 042077)

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This article has been retracted by IOP Publishing following an allegation that raises concerns this article may have been created, manipulated, and/or sold by a commercial entity. In addition, IOP Publishing has seen no evidence that reliable peer review was conducted on this article, despite the clear standards expected of and communicated to conference organisers.

The authors of the article have been given opportunity to present evidence that they were the original and genuine creators of the work, however at the time of publication of this notice, IOP Publishing has not received any response. IOP Publishing has analysed the article and agrees there are enough indicators to cause serious doubts over the legitimacy of the work and agree this article should be retracted. The authors are encouraged to contact IOP Publishing Limited if they have any comments on this retraction.

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Exploration of Teachers' Effective Teaching Behavior in Mathematics Classroom Based on Big Data Analysis

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Abstract. With the development of education reform, the quality of classroom teaching has been paid more and more attention. Mathematics teaching is an important part of classroom education, and the quality of students' learning has a direct impact on their future development. Therefore, only by continuously improving classroom teaching efficiency can the burden of students be truly reduced. Combining reality, using computer big data to analyze the characteristics, problems and improvement strategies of classroom teaching behavior.

Keywords: Mathematics Classroom, Effective Teaching Behavior, Characteristics, Strategy, Big Data

1. The characteristics of teachers' effective behavior in mathematics teaching classroom

In the process of teaching, teachers' teaching behavior is mainly based on the understanding of students. Students' psychological and physiological characteristics have become an important factor for teachers to consider in teaching design. Combining the abstraction, logical rigor and extensive application of mathematics science, this paper summarizes the characteristics of effective classroom behavior as follows:

First of all, the real world is the world of mathematics. The resources of mathematics teaching itself come from life. Mathematics problems are the digital results of real life, which requires teachers to have the ability to face practical problems and to choose and identify problems in teaching [1-3].

Secondly, it is necessary to guide students to verify themselves. Students' thinking level is generally one-sidedness and discontinuity, so in the teaching process teachers should not easily make judgments if they have different opinions, but should guide students to self-verify what they have learned, so that students' thinking can be clarified in this process, which is the process of correcting students' thinking and allowing students to actively invest in learning. This is also one of the most effective teaching behaviors in classroom teaching.

2. The problems existing in mathematics classroom teaching behavior

(1) It is not natural to introduce the subject

Mathematics knowledge background is one of the most important contents in mathematics teaching. To restore and present the historical process of knowledge development and occurrence in front of
students is the introduction of classroom situations. With the deepening of educational reform, educators should realize the importance of educational reform to a certain extent and try various new educational methods. However, in these different introductions, there will naturally be some inappropriate projects, which will not only not help teaching, but also have a negative impact on students and slow down the teaching effect.

(2) Invalid questions from teachers
The core of mathematics classroom teaching is to solve problems. Generally speaking, mathematics classes are mainly taught by teachers and discussed by students. The biggest problem in this process is that teachers ask too many questions, some questions are too simple, and students can easily give answers without using their brains. Such invalid questions and answers will inevitably reduce the efficiency of teaching.

(3) Formalization of teaching activities
At present, the most popular way of learning in mathematics class is group cooperative learning, which allows students to communicate and cooperate in the form of group discussion. In fact, most of these courses are confined to a superficially active atmosphere, and the learning exchanges between students have not achieved the desired results. This model is dull and tasteless. In the long run, it will greatly reduce the enthusiasm of students to participate and reduce learning efficiency.

(4) The contradiction between "presupposition" and "generation"
Teachers usually set up problems and generate problems before class preparation, but in actual classroom teaching, students' cooperation degree is not necessarily consistent with the expectation. Many times, teachers encourage students to have their own views and opinions on Problems and have the courage to express their ideas. In teaching, most teachers are attentive. If students' views are consistent with "presupposition", teachers will praise and praise them. Teachers usually avoid students' inconsistent views with "presupposition", or guide students' views towards "presupposition", and the more volatile students are, the more they will avoid them.

In addition, the construction of effective behavior in mathematics classroom is roughly divided into ten categories, as shown in the figure1:

| Key teaching behavior          | auxiliary teaching behavior |
|-------------------------------|----------------------------|
| Clear teaching                | Make use of students' thoughts and contributions |
| Diversification of teaching activities | organization |
| Task import                   | structure |
| Attract input into the learning process | seek |
| Ensure students' understanding of knowledge | passionate and stable emotion |

**Figure 1.** The construction of effective behavior in mathematics classroom.

3. **Strategies for improving effective behavior in mathematics classroom**
(1) Choose the contents of the subject according to the teaching goal of mathematics
Narrative teaching has its own value, which can be related to meaningful learning. Mathematics teaching pays more attention to the cultivation of thinking quality, which is manifested by the fact that a person's thinking state can be clearly expressed with language tools. In the classroom, the teacher can present the teaching content to the students through narration. When students encounter difficulties in the learning process, teachers can also use lectures to guide students, open the shackles of students' thinking. In addition, there is also a key feature in teaching, that is, the enthusiasm of teaching, which aims at students and teaching content. It is necessary for a good teacher to care and care for students' feelings. Teachers' affection for teaching content means that they should appreciate and express teaching content perfectly. Teachers' appreciation and love of teaching content will play an exemplary role in students' hearts and directly affect students' interest in learning. That is to say, only when the teacher's psychology has a good appreciation of the teaching content, the teaching content will show vivid emotions in the classroom. The more emotions teachers put in, the more they can
stimulate students' learning interest and attitude, thus effectively improving the effect of mathematics teaching behavior.

(2) The improvement strategy of questioning behavior

First of all, it should carefully observe and reflect on the use of inquiries. The problem is that after the answer given by the students is inaccurate, the teacher continues to ask the students. By asking questions in this way, the difficulty of the problem can be reduced to a certain extent, and the knowledge points can be changed to zero, so that the students' thinking becomes simpler and clearer. Whether it is inquiry, it should be based on the teaching content, characteristics, students' mastery of knowledge and progress. This strategy helps students break through the thinking bottleneck, grasp deeper knowledge, and make teachers more aware of students' knowledge. It is an indispensable teaching behavior in effective teaching.

Secondly, stimulate the enthusiasm of students to participate in learning. Many inexperienced teachers keep asking questions. In the teaching process, they ask a lot of questions, which will also contain many ineffective questions. These questions not only occupy limited classroom time, but also interfere with students' thinking. Experienced teachers can deal with these problems well, such as balancing the time relationship between cognition and answer, encouraging students to think more and discuss more after asking questions. Practice has proved that this method can enable students to give better and more detailed answers, rarely refusing to answer and answer.

In addition, it should improve the ability of classroom observation and reflection. That is to say, teachers should carefully analyze the teaching effect in classroom teaching, pay attention to students' learning situation, and the degree of students' reaction when questioning, and reflect on the drawbacks of teaching behavior on students' learning situation and future development.

(3) The improvement strategy of interactive behavior

First of all, it should highlight the main position of students, so that students can become the initiator of interaction. With the development of education reform, students' main body status is becoming more and more prominent. In classroom teaching, some teachers often act as sponsors of interactive behavior, so that students are passively in the position of coping. This will make it difficult for students to think freely and keep up with the process of teachers. In fact, in the process of interaction, teachers should play the role of guiding, guiding and stimulating students to interact actively at appropriate time, so that the role of students can be changed from passive receivers to active initiators, giving students opportunities to find themselves, realizing self-selection, and maximizing the interaction between teachers and students.

Secondly, it should attach importance to the interaction between teachers and groups and mobilize their enthusiasm for interaction. In some interactions, teacher group interaction becomes the interaction between teachers and group representatives, which results in other group members evading their responsibilities and not being active. Therefore, teachers should attach importance to interaction with all members of the group, mobilize the enthusiasm and responsibility of members, enrich the types of interaction, and achieve effective grouping.

(4) Discussion of the improvement behavior strategies

First of all, it should clarify the significance of the discussion and put the ideas discussed into practice. In classroom teaching, teacher-student interaction and teacher-student interaction is a very important teaching behavior. After teaching creates situations, we can solve presupposed problems through joint analysis. In the discussion, we can test students' expansion of content and what they have learned, understand students' views, cultivate students' ability of unity and cooperation, so that they can confirm each other when communicating and discussing each other's views, so as to further consolidate and understand the knowledge they have learned.

Secondly, teachers should play a guiding role. In the discussion, teachers are not only the rulers, records and participants, but also the instructors. Teachers should have a profound understanding of students and textbooks, believe that students have the ability to think independently, and use the knowledge they have learned to discuss. Teachers are not only the promoters of the discussion, but also the experts in interpersonal relations to clarify the problems and summarize the final conclusions.
4. Conclusion
In short, the purpose of studying effective classroom behaviors of teachers is to improve classroom teaching effects. Under big data analysis, teachers are required to fully consider classroom teaching resources and teaching subjects, grasp teaching rules, use strategies flexibly, and focus on the overall development of students. In the process of guiding students to establish their own knowledge system, teachers should give full play to teaching efficiency and realize effective teaching.

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