

Thoughts on Cultivating Chinese College Students' Learning Autonomy in Mathematics

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Abstract: The continuously developing and progressing educational reform put forward higher requirements on current university mathematics teaching, which proposed that students should be the master of the class while teachers should act as the guider and cooperater in the class, so as to develop the college students' interest in independent mathematics learning. However, this kind of development can not be realized in a short term, as students have formed their own specific way to learn under the traditional teaching methods. Therefore, it requires the relevant teachers to work out a feasible developing way through their teaching experience.

Key words: Chinese college students, mathematics learning, independent thinking.

Mathematics is a very important subject, especially for the college students, which is extremely significant for cultivating their application ability in Mathematics. However, during the teaching process, most teaching staff prone to adopting the traditional methods, which weakened students' interest in learning to a certain degree, and as a result, it is difficult for many students to finish their learning tasks independently. Therefore, in order to revive their ability to study independently, this paper set forth the cultivation on college students' learning autonomy in mathematics, so as to provide reference to the relevant teaching staff.

I. Significance for cultivating students' learning autonomy in teaching process.

Firstly, it is significant for the advance and development of society. We can conclude from the current trend of social development that in the future, illiterates will not only refer to those who are unable to read but also refer to those who don't know how to learn independently. Many countries in the world have taken cultivating students' independent learning ability as an important educational reform goal. With the development of society, the demands on knowledge and talents become more and more urgent. China should strive to the goal of life-long learning and education, and every student should learn and master modern skills and culture. Therefore, it put higher requirements on the modern education, and effectively cultivates students' independent learning ability instead of only teaching them simple skills and knowledge.

Secondly, the students should play their dominant roles in the class to increase the teaching efficiency in the class. The successful teaching experience showed that exerting their dominant roles is significant to solve the problems of the less advanced students, and give them the same opportunity to develop and make progress. Paying attention to the cultivation of students' learning autonomy in the teaching process is important to stimulate their subject consciousness. With strong subject consciousness and high degree of participation is bound to increase the teaching efficiency in the class. Students should take the initiative to learn instead of being taught passively. It is the interior need that is the main motivation to learn, not the external force. Once students are interested in learning, they will have the opportunity to enjoy the sense of achievements. Participation is a kind of success, as it drives the students to seek success.

Providing students a foundation for sustainable development and lifelong learning is the main purpose of the contemporary teaching. In the process of realizing this purpose, cultivating their learning autonomy is the most effective means in teaching.

II. Factors influencing college students' learning autonomy in mathematics

Firstly, their interest in mathematics: learning ability is closely linked to the learning interest to a certain degree; learning interest can be stimulated through strong learning ability; students' learning interest is limited by their learning ability, thus it is difficult for the students to cultivate the habit of autonomic learning. Besides, the strength of their independent learning ability is closely related to the teachers' guidance. Secondly, the way to learn mathematics. During the whole learning process, the way to learn mathematics can be created through continuous exploration, and there are different learning methods in different stages; therefore, in the process of learning college mathematics, a set of distinctive learning methods should be put forwarded, instead of indiscriminately imitating the methods in other learning stages. Otherwise, it shall hinder student's learning initiative and autonomy. Thirdly, learning habits. It is a long process to form a learning habit, as well as get rid of the bad habits developed by previous incorrect learning methods. Fourthly, influenced by teachers. The teachers' teaching performance directly influences students' academic performance; even their learning and acting behavior shall be influenced by teachers' words and deeds. Fifthly, teaching methods. In different stages, the learning methods are different accordingly; similarly, the teaching methods vary from different stages. Teaching and learning are complementary and mutually reinforcing each other to a certain degree. Sixthly, the relationship between teachers and students. In most college mathematics classes, the course teacher leaves from the classroom once the class is over; besides, due to students' personality differences, there is rare communication and exchange between the teachers and students; instead, they are just initiators and receivers. As a result, students know little about the autonomic learning, which shall influence their learning performance in mathematics.

III the ways to cultivate college students' learning autonomy

1 change the traditional concepts and create good teaching atmosphere

In the classroom teaching of college mathematics, teachers should initiatively create a relaxing, harmonious and democratic teaching atmosphere, as well as a vivacious learning environment, so as to establish an equal and free environment between students and teachers, stimulate their enthusiasm in learning mathematics, and motivate their interest in autonomic learning and participation. Firstly, focus on the students' dominant roles, and regard them as the master of the mathematics learning. Therefore, during the teaching, teachers should not require excessive specifications and constraints and compulsory unity.

When providing students with creative atmosphere, teachers should also recognize their individual thoughts and curiosities, especially to the college students, as they are adults who have their own plans for their future. Therefore, encouragement and supports must be very helpful for their study and developing. Besides, teachers should give them opportunity to express different opinions and guide them in evaluating and understanding the discussing problems, leaving them differences in ways of thinking. Widen the learning space especially when putting forward or expressing problems relating to mathematics, leaving freedom for them. Exert students' initiative and autonomy in learning mathematics, thus which will be helpful for establishing a lively teaching environment. Every student should be developed in the process of learning college mathematics.

2 Teaching methods and learning methods; improve their independent ability.

Firstly, allow the students to choose their own learning methods; teachers should teach students in accordance of their aptitude because of the differences in mathematics performance and knowledge levels, different students may have different cognitive styles; therefore, teachers should guide them to adjust their methods according to their individual status. Do not limit

the students to do what they hope to, and their diverse ways in learning should be respected.

Secondly, provide students with contents worth discussing in the class to cultivate their habits of autonomic learning in mathematics. Besides, do not confine this kind of cultivation in classroom, instead, extracurricular time should be utilized. Teachers should assign the students with some flexible and practical tasks for exploration and discussion, or require them to prepare lessons before class, and put the knowledge learned in class into practice, without time limitation. In the process of appraising, teachers should give the students opportunity to express their own opinions and thoughts, while teachers only exert their roles of guiding.

Thirdly, guiding the students in summarizing knowledge plays a great role in cultivating their autonomy, in which process teachers should pay special attention. The teachers can tell from the students' summaries if they really mastered and digested the knowledge or if they have remembered the knowledge by their own ways. Many methods for summarizing can be used, such as list structure, block diagram, which can be chose at their will, or the students could only write their own comprehension. Teachers should effectively guide them in their summary, so as to strengthen their thoughts.

3 Stimulate their interest and sense of participation

Strong interest in learning is significant for developing students' autonomic learning ability. There are two major ways to stimulate their interest: firstly, create good classroom atmosphere; teachers should find a point to connect the new and old knowledge according to students' specific situation and teaching contents. List the examples relating to the new knowledge; list the mathematics knowledge similar to old knowledge; prepare materials and teaching aids relating to new knowledge points; create problem situations layer upon layer and from the shallower to the deeper; create a good classroom atmosphere; solve students' queries and doubts; encourage students to put forward more questions or integrate interesting topics into the problems;

stimulate their desire to find and solve problems. As a result, students' thoughts will be stimulated, so that they'll take the initiative to explore and each student will actively and effectively participate in the whole process; further, their intelligence shall be improved.

Although the college students' thoughts are more mature than that of the students in other stages, they still have strong curiosity, which should be effectively utilized. A real event is helpful in motivating students to learn; then create a problem situation to introduce students to a certain context and help the students to find out their own problems in learning mathematics, so as to stimulate their queries. Although teachers play an assistant role in the whole process, they can not interfere too much, leaving sufficient space for them to play.

4 Cultivate students' habit of asking questions

Asking questions is more important than solving the questions in the process of learning mathematics, during which the students' initiative will be actively stimulated and further motivate them to participate in the classroom teaching. As a result, their interest in learning mathematics shall be effectively developed. In addition, actively raising the questions in the mathematics class is significant for students in satisfying their thirst for knowledge and curiosity; besides, the lively classroom atmosphere is bound to encourage them to state their own opinions without hesitation. Teachers should guide the students to challenge the textbooks and teachers, and put forward the questions that puzzle them, so as to develop their courage and awareness. Create opportunity for them and encourage them to pursue truth and explore the genuine knowledge, as well as develop their positive thinking. Only by motivating their interest in mathematics can the foundation for their independent learning ability can be laid.

IV. Conclusion:

In summary, in the modern college mathematics learning, improving the students' learning autonomy is significant for the mathematics learning in the

whole college period. The new curriculum standard placed higher requirements on the current college teaching, which required the teachers to constantly change their teaching thoughts and methods during the teaching process, and strive to become the leaders and cooperators of the students in their learning process, as well as create more space for their learning autonomy. Motivating their interest in learning is bound to help them solving the problems during their independent learning, so as to help them realizing self-training and self-improvement, and gradually developing good learning habits. Therefore, the relevant teaching staff should pay much attention to cultivate their abilities, laying a solid foundation for them in effectively mathematics learning and application.

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