

On the Cultivation of Students' Interests in Biology Teaching

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Abstract

This paper introduces the importance of middle school students' interests in learning biology. Considering the psychological characteristics of middle school students, this paper suggests several practical ways for inspiring students' interests in learning biology.

Keywords: Biology teaching, Interests, Cultivation

Interest is a kind of awareness inclination for understanding the world and acquiring cultural and scientific knowledge (Xiuhong Zhu & Dongyi Wang, 2005, p107-109). As students are interested in certain field, they may pay special attentions on it, observing carefully, memorizing well, and thinking actively. Only by arousing students' interests in learning biology, can we enhance students' enthusiasm for learning biology, help them master biological knowledge and techniques better, and form the scientific spirits and attitudes. Therefore, biological teachers should focus on cultivating, stimulating, and fixing students' interests in biology, activating and maintaining students' enthusiasm for learning biology (Haoxi Chen, 1987, p122-149).

1. Build Harmonious Teacher-students Relationships

The intelligence of middle school students has already developed well. The thinking mode starts to change from imagery thinking to abstract thinking. In learning process, they prefer to solve problems by themselves. They have active thoughts but lack experiences. So, they usually see some parts instead of the whole, which results in errors in understanding problems. Therefore, teachers should instruct them with patience in teaching, adjust the teaching methods and directions timely according to students' psychological needs, and motivate their activeness and enthusiasm.

Students' learning process is initially based on teachers' teaching. Without teachers' scientific and effective instruction, students will never possess strong interests in certain knowledge. For teachers, the responsibility is not the "teaching" but instruct students in learning methods (Ronghuai Huang, et al., 2005, p9-12; Ronghuai Huang, et al., 2005, p22-25). A Soviet educator has said: "Never take students' active and substantial spiritual life in class as continuous nervous state. The so-called students' life is not to ask each individual to think toughly and alone, but communicate ideas with teachers and classmates, and sometimes argue for certain subjects. There are games, jokes, and laughs" The special biological teaching art should have its humorous elements. Light teaching and humorous inspiration can convey emotions between teachers and students, create teaching interests and air, and improve teaching effects.

An important aspect of biology teaching is to create an atmosphere of complete participation, in which students can perceive the biology from a positive and initiative stance in a cooperative way. To study in an active, exciting, and relaxing atmosphere, students can fully develop the ability and desire for exploring problems. As students draw a conclusion by active exploration, a pleasure of success comes into being. They feel proud of their success, which can further foster their confidence in learning knowledge, inspiring the interests in study. For example, in the review stage, teachers can finish the review by means of games. Firstly present exercises and answers in a chapter to students and ask them to memorize them as fast as possible. Then, group students and make a contest for giving answers, or ask them to explain the exercises. During the process, students are concentrated and enthusiastic. They will enjoy the learning process.

2. Employ the Modern Aids to Establish a Thinking Model

Middle school students are energetic. They are full of enthusiasm for things. So their attentions are often distracted. In order to overcome this issue, we must employ visual and interesting teaching aids, to assist the teaching. The common teaching aids include biological bodies, specimens, models, wall charts, and some visual teaching aids, and other modern teaching aids, such as slide projectors, video, television, and computer. Video, slide projector, and multimedia are modern teaching methods. They have unparalleled advantages over other teaching aids. They can

display species and life process and phenomena which are maybe hard to observed, especially some dynamic process, in a short period, showing a rich and extensive biological world, and expanding students' recognition to the biosphere. By this way, students can quickly grasp the macro or micro abstract biological knowledge.

For instance, in teaching the "mitosis of cell proliferation" in High Middle School Biology, we can design the teaching process: introducing the course by showing the short screen "seed germination → growth → flower and fruit" with video; analyze the characteristics of every stage in the mitosis process with slide projector; demonstrate the changes of chromosome at every stage of mitosis process with video or multimedia; finally sum up the main changes of chromosome. Multimedia teaching aids can display vividly the knowledge that is maybe abstract and hard to understand. It can stimulate students' desire for knowledge effectively and make them participate in the whole teaching process actively. Practices prove that the modernization of teaching aids can catch students' attentions in class, especially the students who are easily distracted, so that students acquire knowledge from passive to active search for knowledge.

3. Guide Students' Interests in Learning Biology by other Interests and Hobbies

For middle school students, although the interests tend to be stable, there is still great plasticity. We can use the common features of biology and other disciplines, in which students are interested, to attract students' interests. In middle school, students' self-awareness is clearer and the self-esteem and vanity are stronger. Teachers can help students show their strengths in class, what will arouse a strong self-confidence and pride in them. Students will put more passion into the study of biology.

Some students are not interested in biology but have other hobbies (such as literature or arts). Teachers can borrow these hobbies into biological teaching, stimulating students' interests from other aspect, and making them catch the fun in learning biology. In biology, some knowledge is abstract and difficult so that students show the minimum interests. Then, we can guide students to understand the biological concepts by means of old knowledge or other disciplinary concepts, such as Chinese poetry and quotations, what can inspire students' strong interests in learning the concepts effectively (Xiuhong Zhu & Dongyi Wang, 2005, p107-109).

For instance, in teaching the assimilation concept, we can quote a famous saying of Mr. Luxun: "Cattle eats grass and produces milk" to illustrate the point, together with a diagram: grass protein → grass amino acids → cattle amino acids → cattle protein (such as milk). Then, students can get the essence of assimilation at a glance: turn external matters into own materials and save energies. Another instance: in practice, teachers can invite students with aesthetic specialties to draw wall chart or blackboard painting. In class teaching, teachers can use the mutual connection between biology and other disciplines to guide students to make knowledge transfer. By this way, students who are good at other specialties can participate in the biological teaching. As a result, teachers' special attentions will encourage students to generate the enthusiasm for study immediately, improving their interests in learning.

4. Build the Research-Learning Mode and Arouse the Exploring Desire

Middle school students have very strong thirsts for knowledge and curiosity. They even show stronger interests in learning new knowledge and exploring desire. Most students like to ask questions and seek for answers eagerly. They feel confused about the questions without clear answers in daily life. Considering these characteristics of middle school students, teachers should teach students the methods for exploring problems. By means of asking questions and introducing materials, teachers can guide students to research on biological phenomenon in daily life, and help them to achieve success in learning, so that students can realize the fun of creative activities and enjoy the success.

For instance, in the experiment "extraction and separation of pigments from chloroplasts", we can try the exploration study mode. Through experiments, students can take the initiative to identify problems: it is difficult or impossible to extract pigments from green onions and sweet potato leaves, but why? Why do some vegetable leaves, such as lettuce and celery leaves, are green, but turn into black or brown after grinding (Zengyan Chen, 2002, p41)? To perform the exploration teaching, do not rush to tell students how to do and who do so, but should guide the students to design experiments by themselves, stimulate their desire for exploration, and train their thinking modes, to satisfy their strong thirsts for knowledge and enable them to experience the fun of seeking for success.

5. Guide Students to Use the Scientific and Interesting Memory Methods

Memory is often connected with learning interests directly. To learn the interesting knowledge will make it easy to memorize, and vice versa. For knowledge easy to be understood, students' enthusiasm will be greatly increased. To make students memorize the knowledge quickly and effectively turns to be one of main methods for inspiring students' interests in learning. For some knowledge, teachers can firstly explain them completely and then process

them lightly. By using scientific memorizing methods in learning, memorizing will be more effective.

5.1 Memorize by Association

The most basic law of memory is to make an association between new information and known things. Association is to think about another thing from one thing (Zhiliang Yang, Liping Guo, Pei Wang, 1999, p197-441), similar to a series of hooks, hooking out of things in memory. Association is a born gift. But as a learning ability, we must develop it further. It depends on experiences and accumulated knowledge. To learn how to make association can not only help us memorize things but also help us recall things quickly.

5.2 Memorize by Experiments

Biology is an experimental science taking observation and experiments as the basic research methods. After the reform of curriculum, lots of experiments are added into the biological teaching. The aim is to enhance the experiment teaching in biology. Experiments can not only improve students' operational capacity but also improve the abilities of acquiring knowledge, processing and analyzing, and solving problems. Only by devoting themselves to experiments, thinking about the problems, can students develop the subjectivity fully, and deepen the memory of knowledge.

5.3 Memorize by Interests

It means to help students to memorize knowledge by using harmonics, jingles, verses, etc. The vivid and interesting materials can impress students better than dull and boring materials. To cite some vivid examples, interesting metaphors, and exciting stories in class can not only improve the class effect but also benefit memorizing.

In short, in harmonious teacher-students relationships and positive class atmosphere, teachers can take various teaching methods to inspire students' desire for exploration, and guide students to use scientific memorizing methods to consolidate the knowledge effectively, stimulating students' interests in learning biology, improving the effectiveness and quality of teaching, and founding bases for training students' ability of innovation.

References

- Haoxi, Chen. (1987). *Teaching Methods for Biology in Middle Schools*. Beijing: Beijing Normal University Press. p122-149
- Zengyan, Chen. (2002). Attempt of exploring teaching on "extraction of pigments from chloroplast". *Bulletin of Biology*. No.12. p41
- Ronghuai, Huang. Yongqian, Liu. & Jinbao, Zhang. (2005). Background for *Primary and Middle School Teachers' Competence in Education Technology*. *China Teacher*. No.3. p9-12
- Ronghuai, Huang. & Jinbao, Zhang. (2005). A dialogue of *Primary and Middle School Teachers' Competence in Education Technology (Trial)*. *Information Technology Education*. No.3. p22-25
- Zhiliang, Yang. Liping, Guo. & Pei, Wang. (1999). *Memory Psychology (2en Edition)*. Shanghai: Huadong Normal University Press. p197-441
- Xiuhong, Zhu. & Dongyi, Wang. (2005). Ways of developing students' interests in biology teaching. *Journal of Ningde Teachers College (Natural Science)*. No.1. p107-109