

Immersion in Humanities Education in High School Biology Teaching

Junhong Chang

Minxian NO.1 High School, Dingxi 748400, China

**Corresponding author: Junhong Chang, E-mail: 1426011306@qq.com.*

Abstract

With improvements in education levels in the central and western regions, quality education has received increasing attention. In the context of advocating quality education, humanities education has immersed all disciplines in the education and teaching fields. Since then, immersion in humanities education has become an important educational issue for society as a whole. On the basis of his in-depth investigation of social change and detailed analysis of the current status of education, Dewey proposed the theory of pragmatism in education, which held that education is a practical activity that should capture knowledge and absorb experience through the practice of daily life and elucidated that “school is society” point of view. As a result, science education has increased to a pivotal position. However, in the process, education in the formation of personality and mental health has gradually been neglected. However, in current society, moral corruption and violent crimes, especially juvenile delinquency, occur frequently, and this trend is becoming increasingly prominent. Therefore, improving traditional education methods with the purpose of test-taking and emphasizing and strengthening humanities education is important.

Keywords

biology teaching, high school, humanities education

1. Introduction

1.1 Research Purpose and Significance

1.1.1 Research Purpose

To adapt to the new curriculum concept, through the implementation of humanities education in biology classroom teaching, the humanistic literacy of middle school students should be improved, the advantages and deficiencies in humanities education practices should be identified, and some practical suggestions should be proposed.

1.1.2 Research Significance

The main purpose of high school biology teaching immersion in humanities education is to guide students to have a sense of responsibility and caring so that they can not only care for and treat themselves but also respect and understand others to gradually develop a good character of self-esteem and confidence as well as a complete and sound personality. Learn to think and reflect, correctly understand personal strengths and

deficiencies, and be good at improving self-comprehensive quality through daily tempering. The meanings elaborated in this paper are as follows:

- 1) To sublimate the humanistic literacy connotations of high school students and guide the formation of high school students' sense of social ownership. In biology teaching, humanities education is subtly infiltrated. On the one hand, students can deeply understand the current situation of humanities education in China, the seriousness of the lack of humanistic literacy, and the urgency of infiltrating humanistic literacy; on the other hand, students can cultivate their own social responsibility and cultivate humanistic literacy. Literacy.
- 2) Serving the instructional design of high school biology teaching modules, school-based curriculum development, and curriculum resource development under the new curriculum concept.

1.2 Research Status at Home and Abroad

1.2.1 Research Status in Other Countries

“International Education Encyclopedia” once stated, “The humanities emphasize the constant summarization of successful development experience through the review and analysis of human activities.” The Concise Encyclopedia of Britain also specifically stated, “Regarding the humanities, it is generally regarded as a knowledge system that is different from other disciplines, focusing on the mining and analysis of human values and the intrinsic spirit.” At present, the humanities are relatively general, covering the art, language, history and other related sciences (Chen, 2014).

On the whole, humanities education does not have a clear position, but it does have its own specific object of study, which is to explore and analyze human values and their underlying spirit through a more unique kind of knowledge. Mr. Du Weiming once pointed out that “the emotional thoughts expressed in literary works, the dusty and distant memories in history, the wisdom and philosophical thoughts contained in philosophical systems, and the beliefs advocated by religions are all fields of study that focus on human beings, and conduct in-depth analyses and researches into the status quo of their survival and development, and the significance of their existence”. Mr. Du Weiming's series of fruitful research results in this area, especially his research on humanistic education, is a classic, and can be said to be a rare teaching material in the field of humanistic education.

1.2.2 Domestic Research Status

Humanities education can be considered education on human nature, a unique educational activity that can “develop people into full human beings”. In fact, different people have different views and different standards for the education of “becoming a complete human being.” The first is to make people become human beings; the second is to encourage people to gradually develop into more complete people, that is, we usually talk about people who have the all-round development of morality, intelligence, physique, art and labor. For people, the highest pursuit is to become a perfect person, which is an ideal state that is difficult to achieve. The famous scholar Comenius once clearly stated, “If you want to be a person, you cannot do without education.” Comenius can be regarded as the standard of becoming a person. Zi Lu asked what makes a perfect man. Confucius said, “If one has the wisdom of Zang Wuzhong, the restraint of Meng Gongchuo, the bravery of Bian Zhuangzi, and the versatility of Ran Qiu, and if one is modified by rituals and music, one can be considered a perfect man.” Confucius added: “Now why must the perfect man be like this? If one thinks of the demands of righteousness when he sees wealth and profit, if he sacrifices his life when in danger, and if he does not forget his promises when in poverty for a long time, then he can also be a perfect man.”

People disagree on the goodness and evil of human nature and have not yet reached conclusion (Xinhua News Agency, 2017). In fact, both the theory of good nature and the theory of evil have certain deviations. Human nature is very complex, with not only a good part but also an evil part. It is precisely because of the evil part hidden in the human body; therefore, it is necessary to continuously receive education and to transform and improve oneself in the continuous learning process. It is precisely because of people's tendency to be good that people can enhance and improve themselves through education. In general, humanities education is critical. Everyone needs to receive humanities education to help improve and optimize themselves in the enhanced education process. In other words, human nature contains both good and evil, as well as high and

low realms. Therefore, various scientific and reasonable educational methods should be used to promote the sound personalities of students and help them achieve good conduct and high moral accomplishment.

The foundation of education is to “educate people”. However, in the current development environment, the specialization of education has become increasingly evident, and people’s needs for job hunting and survival have become increasingly strong. To a certain extent, humanities education is ignored in favor of the promotion of manpower education, which is also influenced by a series of pragmatism or utilitarian thinking. Under the influence of various factors, people seem to no longer remember the original intention of education and neglect the cultivation and development of humanistic accomplishment. In view of this, we should closely integrate professional education and humanities education in a reasonable way to promote comprehensive improvement in the quality and efficiency of professional education. Otherwise, humanities education can only be said to be a gimmick in education or a foil for professional education. .

2. Discussion of Relevant Concepts

2.1 Humanities and Humanities Education

2.1.1 Humanities

According to Ci Hai, humanities refers mainly to the education of human beings in rites and music (Ministry of Education of the People's Republic of China, 2017). “The Book of Changes·Ben Gua·Tuan said” refers to the observation of time change from the perspective of astronomy and the formation of the world from the perspective of humanities. The humanities here can be understood as generally referring to all the cultural phenomena formed in the process of the development of human society; With regard to humanism, it can be seen as the most important and positive part of the human cultural system, that is, the advanced, correct and positive values and their corresponding ethical norms that we are currently strongly advocating. It is mainly reflected in respecting and caring for human beings. In a nutshell, humanism refers to a human-centered culture.

2.1.2 Humanities Education

Literati education is already very common in today’s education. However, “there are a thousand Hamlets in the eyes of a thousand people” have different views on the understanding of “humanities education”. These include how to position the relevant relationships, how to define the relevant meanings, and how to reflect the zonal division in the core disciplines of humanities education. With regard to humanistic education, it is a broad and general concept that implies a number of different meanings, including three main ones, namely, humanistic education, education in the humanities, and “adult” education (Editorial Committee of Modern Chinese Dictionary, 2002).

2.1.3 Immersion Education

Immersion education is an education model formed in the special context of Canada. It is widely used in language education. Under this teaching model, the cultivation of students’ initiative and independent decision-making is based on modern pedagogy, psychology, etc., related disciplines as the theoretical basis. “Immersing” students in a learning environment can subtly nurture their interest in a particular major. Immersion in humanities teaching introduces this educational concept to high school biology education, which can significantly improve the effectiveness and quality of course teaching and simultaneously reflect core biology literacy. The core idea of immersion education is to allow students to immerse themselves in the situation and acquire knowledge better. The purpose of creating an immersion classroom environment is to take students as the main body, overcome the disadvantages of indoctrination education, and allow students to experience knowledge by themselves.

3. Research on the Fit of Biology Teaching and Embedded Humanities Education in High School

3.1 Requirements of the Current Status of Humanities Education

After realizing that the proportions of science and humanities education in high school education were out of balance, we had to redefine the “human education” model, which requires scientific and reasonable curriculum design on the basis of students’ psychological characteristics and developmental patterns. Under the premise of considering the teaching objective and teaching content, emotional education is integrated to promote the substantial improvement of students’ comprehensive literacy.

We know that if science and technology are used inappropriately, they can be counterproductive. On the other hand, most high school students are still in the growing stage, and their bodies and minds are still in the process of maturing. In addition, most high school students are also only children, and parents are overindulgent and dot on them. Many children develop a person-centered personality, are significantly less able to bear hardships and stand hard work, have a serious lack of humanistic spirit, and do not know how to respect them. They lack ideals and beliefs, lack a sense of integrity, and may even evade responsibility and become tired of school and play truant.

Therefore, in the teaching of high school biology, as a biology teacher, he should pay attention to the cultivation of students’ motivation, the personality and quality of students, the changes in students’ emotional attitudes and values, and especially the cultivation of students’ critical thinking. Therefore, providing humanities education to students is particularly important.

3.2 Requirements of the Biology Course Standards

The new round of curriculum reform emphasized that, after learning this course, students should gradually establish healthy and positive values, build a good character, possess key abilities, and achieve a comprehensive understanding of knowledge and skills, processes and methods, and emotional attitudes and values. Integration (Editorial Office of Dictionary, Institute of Languages Chinese Academy of Social Sciences, 2016). According to the new curriculum standards, the main purpose of the biology course is to cultivate and develop students’ core literacy and to strengthen practical activities in daily teaching.

Emphasize and strengthen the effective cultivation and in-depth development of students’ core literacy, that is, to enhance students’ concept of life, to strengthen their awareness of social responsibility, to form and expand scientific thinking, and to develop a good spirit of scientific inquiry, thus facilitating students in the process of learning cultural knowledge. Through constantly improving personal moral literacy, students’ core literacy in the discipline has significantly improved. The so-called core literacy of subjects mainly refers to the ability to develop healthy and positive values, build excellent character and have key abilities in the process of guiding students to study a series of subjects, that is, to focus on the formation of students’ correct world outlook and values. At the same time, attention is given to the overall development of students (Fan, 2019).

3.2.1 The Advantages of Biology Disciplines Infiltrating Humanities Education

As a representative scientific discipline, biology also has a rich humanistic spirit and scientific spirit. According to the new curriculum standards, the “emotional attitudes and value objectives” of the course highly emphasize the cultivation of students’ sense of responsibility and patriotism and the promotion of their scientifically correct values.

3.2.2 Individual Thoughts in the Literature Investigation

At present, in the biology teaching process of high school, how can immersion in humanities education be carried out to meet the demand for cultivating a reserve army of college students of comprehensive quality? The author studied in-depth professional courses such as zoology, botany, humanities, and conservation biology as an undergraduate. The many humanities-related cases shown by the teachers in the class made people think deeply, which is why literary literacy education, such as the history of science, is always underplay. Pass by? As professional education researchers in biology, what can we do in the face of a lack of humanistic literacy education? In addition, the author has communicated with my instructor many times and found that, in fact, many intuitive and professional scientific issues involve many perceptual and nonintuitive humanistic accomplishments, which are combined with many chapters related to humanistic education in high school biology textbooks. The author believes that combining humanities education with high school biology

teaching is advantageous. Therefore, the topic is the immersion of humanities education in high school biology teaching.

4. Path Exploration of the Immersion of Humanities Education in High School Biology Teaching

Humanistic education embodies the thoughts, concepts, principles and methods of humanistic pedagogy to disseminate thoughts, provides humanistic and moral education to recipients, establishes appropriate humanistic awareness, enables recipients to experience humanistic behavior and improves humanistic literacy.

4.1 Focus on the Mining of Knowledge Connotations

In high school biology teaching, to be better immersed in humanities education, we need to dig deeply into the textbooks and improve the ability to study and read them. In actual teaching, the relevant knowledge and cases of biology are rationally used, plain knowledge becomes vivid and interesting content as much as possible, and the content is subtly immersed in humanities education. For example, in the five versions of biology textbooks for high school (PEP, Beijing Normal University edition, CLC edition, Zhejiang Science and Technology edition, and Jiangsu “the discovery of Mendel's first law and the second law”, “Morgan's discovery of the experimental evidence of the gene on the chromosome”, “the discovery of auxin”; these histories of science not only present rich scientific at the same time, it expresses the thoughts, methods, and scientific spirit of dedication, persistence, and courage in the conduct of scientific inquiry of these scientists. These materials are excellent materials for molding the scientific spirit, attitudes and values of students. Furthermore, in the “Scientist Interviews”, “Stories of Scientists”, “Problem Discussion”, and “Science/Technology Society” columns in the compulsory high school biology textbooks published by the PEP also have rich humanistic education content, all of which are invisible to students conducting immersion-style education in the scientific spirit.

4.2 Correctly and Actively Cultivating Students' Ability to Feel Aesthetic Value in Biology

Aesthetic education is an indispensable part of the high school biology and humanities education system. As a typical natural subject, biology itself involves the unique beauty of life and nature. To better guide students to feel the charm of biology, teachers should promote humanities education in a targeted manner in the teaching process. To encourage students to learn to observe and explore the unique beauty of biological knowledge points in the process of receiving aesthetic education. This study takes the DAN structure as an example. When carrying out this type of teaching, the students can be led to deeply feel the delicate and unique aesthetic feeling of the DAN structure. With respect to the replication of DNA, the relevant principles should be consciously followed. Scientifically and rationally reproduced according to this premise. For another example, when explaining the “stability of the ecosystem,” the courseware was produced via audio-visual technology and accompanied by audio files to guide the students to appreciate and feel the aesthetic laws of living organisms. In the PEP textbook, the discussion of “community succession” quoted Bai Juyi’s “Far Fang invades the ancient roads, and the sunny greenery meets the barren cities”. The “Evaluation Guidelines” of “Biological Community Composition” cited the “weeds and flowers by the Suzaku Bridge”, all of which reflected the immersion of humanities education.

4.3 Actively Developing Extracurricular Resources

In the “Process and Method Objectives” of the Standards, students “should learn to respect and love life, know and understand the profound connotation of the harmonious coexistence and synergetic development between man and nature, and gradually form a healthy and active environment of sustainable development.” This concept”, which occupies a pivotal position in humanities education. Extracurricular extension is also needed to improve immersion in humanities education. High school biology textbooks are influenced by the nature of the subject and contain relatively few humanistic resources. Therefore, in the teaching process, teachers need not only to flexibly and rationally apply the humanistic resources contained in textbooks but also to pay more attention to the extension of extracurricular resources to serve teaching more efficiently and improve the immersion quality of humanities education.

In the actual teaching process, teachers can organize students to participate in some extracurricular activities, highlight the connotations of humanistic education in these activities, enhance students' abilities, and make full use of extracurricular activities and campus technology and cultural festivals to immerse humanistic education. For example, teachers can help students memorize some conceptual knowledge by writing lyrics and singing on the basis of actual textbook content or organizing students to visit the forest park to collect and collect specimens to help students better absorb biological knowledge. Teachers also need to guide and encourage students to learn other plant-relevant knowledge.

In addition, teachers can also use the food chain (net) as material for story creation and design game activities that have professional characteristics and are full of literary literacy to immerse themselves in humanities education. For example, teachers can introduce “Love Teeth Day” and “Chinese Students Nutrition Day” to students, which not only broadens students’ knowledge horizons but also helps students form correct values, which in turn helps them form good living habits. When teaching knowledge about cell carcinogenesis and genetic diseases, teachers can further expand relevant resources through multimedia technology to guide students to correct bad habits and gradually develop scientific and healthy habits.

4.4 Cultivating Students’ Critical Thinking

According to the “process and method objective” of the Standards, after passing the study of this discipline, students “should have the ability to independently inquire about biological information through a variety of media technologies and be able to independently identify, determine and share relevant information.” “Be good at listening to the views and opinions of others and confirming personal conclusions and viewpoints by providing evidence. At the same time, they learn to reflect and self-correct”, etc., all of which emphasize the development of students’ critical thinking (Liu, 2017). As a typical scientific discipline, biology progresses meanderingly in the exploratory process of criticism, inheritance, and development (Wu, 2018). Regardless of which version of the biology textbook is used, the description of the history of science reveals the value and significance of critical thinking ability to a certain extent. They take the “discovery of hormone regulation” as an example to illustrate and encourage students to be brave and active in their predecessors. Criticizing incorrect or unclear views put forward in the process of exploring human development can guide them to stand on the shoulders of giants to examine and analyze problems, stir up new sparks under the collision of different types of thinking, and promote students’ critical thinking. Thinking and exploratory thinking can be effectively improved, thus encouraging students to gradually form good habits of daring to question and actively discussing the case.

5. Conclusions

In summary, the development of humanities education in the past 100 years, combined with the rigorous and realistic scientific literacy embodied in the current biology major and the tendency for some biology teachers to neglect humanities education and focus only on professional academic research and scientific research, has resulted in humanities education. The fact that education and professional education are separate. Only when we organically combine the classroom of humanities education with the classroom of biology professional education and integrate humanities education into professional education can we fully exploit the advantages of immersion in humanities education. Active exploration and reform are carried out in the setting of a curriculum model, improvement of teaching methods, and assessment standards to strengthen the cross-integration of disciplines. We believe that with the expansion of humanities education into science education, the coverage of biological humanities education will be broadened, which will certainly inspire the development of humanities education in biology teaching in high school in the future.

References

- Chen, J. (2014). Wisdom teaching mode based on whitehead's educational thought. *Teaching and Management*, (18), 114-116.
- Editorial Committee of Modern Chinese Dictionary. (2002). *Modern Chinese dictionary*. Guangming Daily Press.

- Editorial Office of Dictionary, Institute of Languages Chinese Academy of Social Sciences. (2016). *Modern Chinese dictionary* (7th ed.). Commercial Press.
- Fan, Y. (2019). Research on permeating humanistic education in high school biology teaching. *Inner Mongolia Education*, (23), 123-124.
- Liu, Q. (2017). How to effectively penetrate humanities education in high school biology teaching. *Curriculum Education Research*, (31), 180-181.
- Ministry of Education of the People's Republic of China. (2017). *General high school biology curriculum standards (2017 edition)*. People's Education Press.
- Wu, Y. (2018). *Educational research on infiltrating socialist core value system in the teaching of homeostasis and environment* [Master's thesis, Donghua University of Science and Technology]. CNKI. https://kns.cnki.net/kcms2/article/abstract?v=ufuULIVWCsMvI20zsb1Qp_ItBP8twNxVYEGgmbdwGRc2ELh1kDDY1FW8rapHrLdybm-dWRUNwTkOVgeh_Kd12gt3WQL_PAAy0hxjs5E7UgyCw5N-ijQLK26t5YmyvyqvoYqg1lceREmnTVDccd7mAZBzCmZDo8noNuYSqvTdhY5bBMUjpERkH2LtOHqjIh4S15n6ZrH8gw=&uniplatform=NZKPT&language=CHS
- Xinhua News Agency. (2017, July 20). *The general office of the CPC central committee and the general office of the State Council issued a circular on the humanities and environment of the qilianshan national nature reserve in gansu*. https://www.gov.cn/xinwen/2017-07/20/content_5212107.htm

Funding

This research received no external funding.

Conflicts of Interest

The authors declare no conflict of interest.

Acknowledgment

Not Applicable.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).