Low-tech education in Information Education: Conflict and fusion

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Abstract: Information education is increasing capacity of teaching, improving teaching efficiency and convenience of activity education resource, It plays more and more role in education but the lack of interactive experience between students in the process of education, students in movement, hands-on practice and the opportunity of real human contact are reducing, Based on information education in the background, a rising low-tech education and informational education form of binary opposition, intensive studies are identified the concept of low-tech education and Information education ,theoretical basis, and in view of the reality phenomenon in the process of learning of “either this or that”. Finally ,in the view of Marx's theory of all-round development, found that low-tech and information education is an integral part of the all-round development of student, to grasp the low-tech education and Information education in different weights in the education, Information education and low- tech education can get harmonic fundamental contradiction.

1. Introduction

With the development of cloud computing, big data and mobile communication, the development of information education has also entered a new stage-the stage of wisdom education, the scientific analysis and evaluation based on big data (Xianmin Yang, 2014), information education can increase the capacity of classroom education and improve the teaching efficiency. The advantage of providing convenient educational resources for activities, but there are some opposing voices about educational information education. They think that students' learning is an interactive experience between people, when students need language expression, technology and critical thinking. The so-called "high-tech" will play a distracting reaction, children in sports, hands-on practice and real contact with people to achieve better learning results, which has aroused the attention of the "low-technology" education.

2. Core concept determination

2.1 Low-tech education (Low-Tech Education)

Refers to the fact that some parents do not encourage their children to learn computers prematurely and send their children to "low-tech primary schools" where there is no computer in the classroom, with emphasis on their artistic activities and manual work（360Encyclopedia）. Pay attention to the role of imagination and creativity in the learning process. The author thinks that the low technology education mainly refers to the way of education that does not use the information media such as high technology computer in the teaching process, let the students participate in the activities, work by hand, learn knowledge and improve the ability in the process of people's communication. There are three core elements of low technology education. One is that there are no computers in the classroom of "low technology" schools, and at the same time, students are encouraged not to use computers at home. Second, low-tech education emphasizes letting children get rid of these high-tech products, and at the same time, more artistic activities, manual work, attention to students in the process of learning imagination, creativity training.

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2.2 The concept of information education (Information education)

Information originated from Japan in the 1960s. It was introduced into western countries and Europe in the 1970s. In 1997, China formally introduced the concept of information systematization in the first National Information Conference. Educational information is the process of taking information as a component element of educational system and widely using information technology in all fields of education to promote the modernization of education(YouluZhang, 2012). In addition, in interpreting information education and its five pillars, Guonong Nan said that "information education is the product of the combination of modern educational thought theory and modern information technology. It mainly includes six modern educational concepts: quality education, lifelong education." Dual-subject view of education, innovation of view of education, EQ-oriented view of five pillars of education. "the explicit form of information education is a variety of information tools, computers, multimedia, whiteboards, even mobile phones and other hardware environments, as well as all kinds of software systems used in hardware. (Guonong Nan, 2007)These are the basis for the realization of information technology. In addition, people, teachers and students who use software and hardware also need to have certain information literacy, and have the ability to learn and work with these hardware and software, which is the key factor to realize information technology. Finally, the use of information technology in the teaching process, used to improve the capacity of classroom education, specific teaching, expand the content of education, to enrich the stimulation of children to improve the efficiency of classroom education, and so on. The application of information technology in the classroom also brings about the reform of classroom education, such as micro class, admiration class and flipping class.

3. The concept discriminates and analyzes

3.1 Low-tech education and traditional education

Traditional education refers to German educationalist Herbart and his school of education theory and teaching model. John Dewey, an American educator, for the first time called Herbart's educational thought and its mode of practice "traditional education" or "old education" in his book School and Society. The school attaches importance to classroom teaching, teachers play a leading role and impart systematic scientific knowledge.（JiHuang，CesanWang，2006）In terms of form, low science and technology education does not use modern teaching media and does not have the participation of information technology. Many people think that this is a traditional education opposed to modern education, which equates low science and technology education with traditional education. This is a misunderstanding in understanding. There is an essential difference between low-tech education and traditional education. Traditional education attaches importance to classroom education and one-way teaching of knowledge and skills. In traditional education, teachers are the absolute authority and play a leading role. Low-tech education emphasizes students' participation, hands-on operation and students' initiative. What they pay attention to is the acquisition of students' direct experience and the cultivation of imaginative creativity in the process of education, which weakens the authoritative position of teachers and respects the individual differences of children. Therefore, there are differences in the status of teachers, educational aims and teaching methods in the process of education.

3.2 Low-tech education and modern education

The first specific concepts. Refers specifically to Dewey's educational theory. Modern education advocates focusing on children's activities, making school education closely related to children's life. The second refers to education that corresponds to modern society (based on machine production). Third, the concept corresponding to traditional education, modern education mainly refers to educational concepts, forms and characteristics adapted to modern society, modern production system, modern economic system, modern cultural system, modern science and technology, and modern social way of life（JiHuang，CesanWang，2006）. "Modern education" refers to Dewey's theory of modern education. Modern education emphasizes respecting the interests and needs of

children, paying attention to the interrelation of family, society and school, and serving for the cultivation of social people（Dewey，2001）. Modern education holds that experience and knowledge are unified, and that education is regarded as a school of life, growth and transformation. In the process of teaching, teachers are the dominant teachers (not the subjects of teaching activities), and children are the main bodies of learning activities. In order to break the traditional mode of "teaching = imparting knowledge", that is, "learn from doing". "do" is the most fundamental means of teaching. Children should be allowed to acquire knowledge and improve their skills indirectly in the process of "doing". It can be seen from this that the connotation of the concept of low-technology education and modern education is consistent. For example, both emphasize the participation of students in activities, give full play to students' initiative, respect students' interests and needs, and emphasize doing what they learn so that students can start to operate. To gain direct experience, the difference is that low-technology education emphasizes the use of low-technology educational media, the direct operation of activities, and the rejection of high-tech information tools. there is no emphasis on whether to use it or not. That is to say, the use of information technology is possible in modern education. There may also be no use of information technology, but low-tech education emphasizes the absolute non-use of information technology.

3.3 Information education and modern education

Information education is the process of taking information as a component element of educational system, and widely using information technology in all fields of education to promote the modernization of education [YouluZhang， 2012]. It only emphasizes the application of high-tech information technology in the teaching process, assists in teaching, improves the efficiency of information input and output, and improves the efficiency of teaching a form of education with a sense of the times. Modern education emphasizes respect for students. In the course of operation, they acquire knowledge and improve their skills, give full play to students' initiative in learning, and let students become the main body of learning. As for the application of information technology in modern education, modern education does not place particular emphasis on it. That is, modern education can have the use of information technology, but information education is bound to have the use of information technology.

Low-tech education, traditional education, modern education, and information education appear to be four different forms of education. In fact, they will overlap to a certain extent because of their different classification methods. However, because of their different emphases, they have great differences in meaning, so they should be treated differently, analyzed carefully and used carefully in the process of practical application.

4. The dualistic opposition between low technology and information education

From the view of the existence form of low technology education and information education, there are many contradictions between low technology education and information education.

4.1 The explicit form Opposition between low Technology Education and Information Education

Information education emphasizes the existence of hardware environment such as computer, multimedia, whiteboard and even mobile phone in educational activities, and it is accompanied by the use of information tools in the teaching process. So from the external point of view is accompanied by a variety of information tools; Low-tech education emphasizes the non-information environment, the use of low-technology teaching media in the teaching process, such as hands-on handwork, teaching aids in teaching activities, and so on, in the form of hands-on operation and participation in activities, with the intention of obtaining direct experience. Therefore, judging from the external form of low-technology and information-based education judge whether there is a standard of information media.

4.2 The ultimate goal of low-tech education and information-based education is different

Low-tech education emphasizes its artistic activities, manual work, the role of imagination and creativity in the process of study, and the direct operation of students in the process of education to gain more direct experience and develop their ability and skills. The ultimate goal of information education is to enable students to acquire more knowledge, to improve the speed of information output through information technology, and to stimulate the amount of information to students, so as to improve the learning efficiency of students. And then improve the amount of knowledge acquired by students in a certain period of time.

5. The integration of the field of vision of the all-round

5.1 The dual complementation between the overall Development of people in low Science and Technology and Information Education

The all-round development of human being refers to the state of maximum free development of each person and all people in the objective and subjective aspects, that is, the full and unified development of human intelligence and physical strength; At the same time, it also includes the coordinated development of various aspects of human ability, wisdom and moral quality [.] Marxist theory of all-round development points out that the basic purpose of all-round development education is to train people with all-round development and to educate moral education and wisdom. Sports and aesthetic education, as the basic implementation of the system of education. The harmonious implementation of moral education, intellectual education, physical education and aesthetic education is the basic condition to promote the harmonious development of students' moral, intellectual, physical and aesthetic aspects. In order to bring up a new generation of socialism with all-round development, we must unify moral, intellectual, physical and aesthetic education and complete it as a complete system engineering. Low-tech education emphasizes that the acquisition of students' direct experience belongs to the category of intellectual education. However, in addition to the other aspects of direct experience, the improvement of socialization level, practical ability, aesthetic ability and ideological and moral level belong to virtue. In terms of physical, aesthetic and other aspects of education, information education focuses on the acquisition of indirect knowledge and on intellectual education. Although low science and technology education and information education have their own emphases, from the perspective of the overall development of human beings, They are an indispensable part of the overall development of human beings, not "one or the other".

5.1.1 The emphasis of low-tech education on the acquisition and ability of students' direct experience

The low-tech education emphasizes the students' participation in art activities, manual work, and the cultivation of imagination and creativity in the process of study. The low technology pays attention to the students' practical ability and participation ability in the process of learning. In this process, the students first obtain the direct experience and practical knowledge, and the direct experience and practical knowledge in the operation process lay the foundation for the later study. Apart from gaining direct experience in low-technology education, the interaction between middle school students and teachers in low-technology education also promotes the social development of students. Piaget believes that Children's peer interaction or interaction is an important factor affecting social cognition. In the interaction, peers can better understand the differences between their own views and those of others by playing different roles, if there is a conflict in the game, In order for the game to continue, children must adjust their own views and others' views, or make compromises to ensure that the game works smoothly. Low technology education students participate in activities that directly affect objective things. In this process, middle school students can directly operate objects, exercise hand-eye coordination, finger fine movement, and perceptual experience. These are all the advantages of low technology education. The speed of acquiring knowledge may be much slower, but the direct experience gained in the process is the basis for later

learning of indirect experience. 2. Information Education focuses on the acquisition of students' indirect knowledge

5.1.2 Information Education focuses on the acquisition of students' indirect knowledge

Information is regarded as the basic element of a system and a field, and it is a general term for the generation, analysis, processing, transmission and utilization of information in this field. We call the generation, analysis, processing, transmission and utilization of information as information technology. Therefore, for a system, the information in this field is the general name of the meaningful activities which take the information as the basic element of the system, and widely use the information technology in the system. Information education is the information analysis of educational system from the viewpoint of information, focusing on the use of various modern information tools in the teaching process. The main reasons for the use of various modern information tools are, in my opinion, two reasons. It visualizes abstract knowledge so as to facilitate the understanding of children's knowledge. Second, compared with low-technology education, it can more quickly and directly present existing knowledge, increase students' exposure to knowledge, and increase the stimulation of students' information. To improve the efficiency of acquiring knowledge, in short, information education mainly focuses on the acquisition of indirect knowledge.

From the theoretical point of view of Marxist theory of all-round development, students' education should be a comprehensive development of education, moral, intellectual, physical, beauty and other aspects of coordinated development, but also knowledge, ability and skills. From this point of view, low science and technology education focuses on ability and skill, emotion and attitude and direct knowledge learning, information education emphasizes on the acquisition of students' indirect knowledge, and their forms are opposite. However, from the perspective of the overall development of students, the role is unified. In real life, the unilateral emphasis on information education or the unilateral emphasis on low science and technology education is relatively one-sided. The comprehensive development of children requires both low science and technology education and information education. The "one or the other" phenomenon is even less in line with the needs of children's comprehensive development. How to coordinate the dual complementary role of low science and technology education and information education, and how to bring into play the educational joint efforts to promote the overall development of children? It is better to choose a suitable combination of low science and technology education and information education according to the age and development characteristics of children.

5.2 How to carry out dual complementation between information education and low science and technology education

From the perspective of Piaget's cognitive development stage theory, the younger the children are, the more they need to be supported by concrete things, the older they are, the stronger their ability of abstract logical thinking is, and the younger the children are, the more suitable the teaching method of direct image is. Learning in kind is more suitable for children of that age, so the proportion of children with lower education in science and technology should be higher, and as the children grow older, the ability to think abstractly and logically gradually increases. More and more children can learn from concrete things, so the quantity of indirect knowledge acquisition will be larger than that of direct knowledge acquisition, which is more suitable for efficient and large capacity information education. The complementation of low science and technology education and information education is just like the above table. The proportion of low science and technology education increasing with age becomes smaller and smaller, and the proportion of information education increases with age.

5.3 A Cognitive Psychological Analysis of dual complementation between Information Education and low Technology Education

Cognitive development is the result of continuous formation and renewal of cognitive structure in the interaction between individual and environment. Piaget suggested that children's cognitive

development must go through four distinct stages of distinct nature. Namely: perceptual movement stage, pre-operation stage, concrete operation stage and formal operation stage. Perceptual motor stage (the sensorimotor stage,0-2 age), the main characteristics are: dependent on feeling and movement to understand things. The instinctive reflex develops to the purposeful activity, and the ability to solve the (object permanence), problem of object immutability begins to develop. Delayed imitation; The cognitive characteristics of pre-operation stage (the preoperational stage,2-6,7 years old) are as follows: children's thinking in pre-operation stage is more symbolic and symbolic than that in sensorimotor stage, but they do not have the ability of calculating thinking; The cognitive characteristics of the concrete operation stage: the concrete operation is a reversible psychological activity related to real and concrete objects. Compared with the pre-operation stage, children in the specific operation stage can solve specific problems by using logical thinking, that is, they can solve problems by logical reasoning and logical thinking, but they need the support of things and intuitive images. It is not possible to perform pure symbolic operations. Formal operation stage (the formal operational stage,11 (-), the individual began to form the ability to solve abstract problems. The development of formal operations provides the ability to infer and form logic for various problems, hypotheses, analogies, deductive reasoning. It can be seen that the characteristics of children's cognitive development are concrete to abstract (symbolic), from direct to indirect, it can be seen that the younger the children are, the more suitable for low-technology education. The older the age, the more suitable for information education.

Physical and mental development of children. This is also the younger the proportion of children's information education should be a consideration.

6. Summary and prospects

Low-tech education and information-based education are different forms of education in a specific period. Both information-based education and low-sci-tech education have their own advantages. We should combine the advantages of information and low-technology education. Exerting joint efforts to serve education, controlling the proportion of low-technology education and information-based education, taking into account various factors such as children's different age stages, the characteristics of children's thinking development, and the characteristics of the stage of moral development, etc. To optimize the combination of low-tech education and information-based education to promote the healthy and comprehensive development of children. As for the specific proportion of low-technology education and information-based education in various stages of school education, how to coordinate the relationship between information technology and low science and technology concretely, and by what means and in what way the curriculum in the field can coordinate low-technology and information-based education. These will be future research topics.

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