

The Enlightenment and Explanation of Mozi's Scientific Spirit to Vocational Education

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Abstract: Mozi was a great thinker and educator in the history of China. He had a great influence in the pre-Qin period and was called "outstanding learning" with Confucianism. In addition to his viewpoints of "universal love", "non-aggression", "Shang Xian", "non-enjoyment" and "economization", he is well known and has also made extraordinary achievements in the field of science. He founded a set of scientific theories with geometry, physics and optics as outstanding achievements. He was honored as the "Science Sage" and had a great influence on later generations. Mozi is the earliest educator who advocates vocational education in our country and is called the first person to practice vocational education. Mozi's theory contains rich labor thoughts and scientific thoughts, which have important normative and guiding values for the development and reform of our vocational education today. It is helpful to train Mozi of the new era for the society and provide ideological guidance and theoretical support. Therefore, it is of great significance to construct vocational education characterized by Mozi's scientific spirit in the process of vocational education and to go deep into specific teaching and educational practice. This article first explores the content of Mozi's scientific thought, including the object of Mozi's scientific thought, the task of Mozi's scientific thought, the characteristics of Mozi's scientific thought, etc. Secondly, through studying the essence of Mozi's scientific thought, it is found that Mozi's scientific thought has important enlightenment to vocational education. Finally, through the relationship between Mozi's scientific thought of "emphasizing virtue", "serving righteousness and scholars", "wisdom and skills, and" describing and doing "and vocational education, it expounds its value to vocational education. Whether it is the individualized education of "teaching students in accordance with their aptitude" advocated by Mozi, or the teaching method of "unity of knowledge and practice" and the educational purpose of "not withholding but not voicing" are consistent with the objective of today's vocational education, and also provide methods and guidance for today's vocational education. Finally, the article analyzes the current situation of the dissemination of Mozi's scientific thought in the society at that time, and further explores the ways in which Mozi's scientific spirit can be promoted in the contemporary era.

1. Introduction

Mozi was a thinker, educator and founder of Mozi School in the Spring and Autumn Period and Warring States Period in China. He was also an outstanding scientist. He was honored as "Science Sage" and had many important achievements in science. Liang Qichao said in the preface to the revision and interpretation of the mo Jing: "in our country's ancient books, those who want to be in harmony with the so-called scientific spirit of this age, the mo Jing is just a book, and the mo Jing is just a book." Mozi was the earliest educator who advocated vocational education in our country and was called the first person to practice vocational education. Mozi's theory contains rich labor thoughts and scientific thoughts, which have important normative and guiding values for the development and reform of our vocational education today. It is helpful to train Mozi of the new era for the society and provide ideological guidance and theoretical support. Therefore, it is of great significance to construct vocational education characterized by Mozi's scientific spirit in the process

of vocational education and to go deep into specific teaching and educational practice. In today's society, expounding Mozi's scientific and technological innovation and scientific thought is of great significance to China's vocational education. This is because Mozi's scientific thought not only flashes the wisdom of the ancient East, but also has vivid value of contemporary vocational education. Knowledge taken at a supreme position and the ability, especially the creative ability ignored, is omnipresent in China for a long time. Learning and imitating Mozi's vocational education wisdom is of great significance for inheriting our country's long-standing scientific ideas, building an innovative country and developing vocational education.

2. Manuscript Preparation

2.1. Contents of Mozi's Scientific Thoughts

Mozi is a saint of the working people. He leads the world in natural science research. His achievements in such fields as mathematics, geometry, mechanics, optics, military science and technology, etc. are beyond the reach of hundred schools of thought and other ancient Greek natural philosophers of his time. Therefore, he is called "scientific sage". Mozi separated natural phenomena from social phenomena and analyzed and studied various natural phenomena sensed by the senses and various scientific and technological problems encountered in production practice. The establishment of natural objects and phenomena as cognitive objects of natural science enables Mozi's scientific activities to be based on objective, analytical and rational experience. Mozi's scientific and technological education thought is unique in the history of education in ancient China. In science, Mozi founded a complete set of scientific theories based on Geometry, Physics and Optics[1].

Mozi's scientific thoughts are mainly recorded in the Book of Mohism, and the scientific and technological thoughts contained therein are the best representatives of the ancient sources of scientific and technological thoughts in our country. The main tasks of Mozi's scientific thought are embodied in material production and craftsmanship. Mozi participated in various kinds of craft production and paid attention to various problems in the practice of craft production. Only in this way can Mozi accumulate a great deal of scientific knowledge and reveal the laws of nature. Mozi regards whether it is conducive to social production as a criterion for evaluating knowledge's artlessness, "which is beneficial to people and not conducive to people's artlessness." Mozi observed some natural phenomena carefully in his scientific and technological practice, studying the existence mode of natural objects, the structure of objects, the relationship between the existence and attributes of objects, the movement and stillness of objects, thus abstracting a number of concepts reflecting natural things[2]. Mozi's understanding of natural things pays more attention to measurability and observability, which is the starting point for scientific understanding of natural objects and phenomena.

2.2. The Characteristics of Mozi's Scientific Thought

The basic characteristics of Mozi's scientific thought are mainly shown as follows: the positive spirit of emphasizing experience, the rational attitude of logical analysis, and the scientific and technological values of emphasizing practicality. Mozi emphasized that scientific cognition should proceed from reality, that is, observe, describe, analyze, demonstrate and explore from observable nature. "For a long time, different time also. Yu, I'm not the same." Mozi here uses ancient, modern, early and late to describe time, and uses home as the center to determine the orientation of east, west, north and south to describe space. This concept of time and space is quite emotional. Mozi can further understand the infinity of space and time from this perceptual observation and the limited space and time that can be grasped[3]. The combination of Mozi's scientific understanding activities and the production technology practice at that time made Mozi's scientific understanding activities have strong practical characteristics. For example, Mozi's research on optical and mechanical phenomena was related to the manufacture of bronze mirrors and the use of simple machinery. Mozi places great emphasis on the decisive role of human practice in judging the

authenticity of scientific knowledge. Mozi believes that the correctness of a scientific proposition and scientific judgment should be tested by practice and facts. "Be don't know from the ink, not by its name, also by its also. "Theoretically, the explanation of" name "alone cannot confirm whether it is true knowledge. Only through the practice of" taking "can it be proved correct. The difference between Mozi's thought and Confucius's is that Confucius despises labor while Mozi advocates "unity of knowledge and practice". Mozi's spirit of scientific exploration and utilitarianism for the benefit of the world have obvious practical tendencies. Mozi believes that the material production of farmers and workers is the foundation of social existence, so he attaches great importance to craftsmanship. Mozi personally took part in various craft production and paid attention to various problems in the practice of craft production. Only in this way did Mozi accumulate a lot of technology and knowledge. Mozi regards whether it is conducive to social production as a criterion for evaluating knowledge's artlessness, "which is beneficial to people and not conducive to people's artlessness."

2.3. The Enlightenment of Mozi's Scientific Thought to Vocational Education

Mozi attaches great importance to the teaching of science and technology. The value concept of "unity of justice and benefit" in Mozi's scientific thought, the scientific pursuit of "valuing benefits and valuing use" and the research method of "unity of morality and technology" all have important enlightenment on contemporary vocational education.

2.3.1. "Thick virtue" principle of vocational education

"Shang Xian" emphasizes morality as the first, reflecting personal cultivation and harmony and unity inside and outside. "Debate and Talk" reflects self-confidence, and the harmony and unity of one's inner talents and outer charm. "Bo Hu Dao Shu" embodies the perfect combination of thought and method, cultivation and ability to apply what one has learned. Virtue, speech and taoism, as the three important benchmarks of talent cultivation, are the unity of the educational height, beauty and breadth of contemporary vocational education. "With rope ink from correction and prepare the urgent. "Mozi's education aims at" benefiting the world "and embodies the practicability and innovative function of education. He regards "concealing good morals but not teaching" as the foundation of "the hungry shall not eat, the cold shall not be clothed, and the disorderly shall not be treated". He regards "concealing good morals but not teaching each other" as the chaos of the world, and regards "the virtuous persuade to teach" as the essence of the wise and governing the country[4]. Mozi believes that "if this is the case, the hungry shall eat, the cold shall be clothed, and the disorderly shall be treated". Mozi raised the function and function of education to the level of the country's governance of chaos, fully affirming the supreme function of virtue in education.

2.3.2. The vocational education aim of "serving both the righteous and the wise"

Mozi believes that education is to cultivate "righteous and capable people". The so-called "capable people" must be their friends and relatives. Can implement the "powerful disease to help others, who have wealth to encourage to divide people, youdao advised to teach people." "And" should be able to "thick on virtue, debate on speech, bo on Taoist". "Double-Serving" means "turning a blind eye to the people, eating when hungry, dressing when cold, caring for diseases and burying when dead." At the same time, if this is what you say, if this is what you do. " That is to say, it depends on the behavior and actual effect. This is what Mozi said: "to observe the situation according to one's ambition and achievements," that is, to judge the disciple to combine the student's motivation with the actual effect. This kind of thought embodies the idea of quality education. Secondly, the "double judge" must be "talking and debating". "Debate on Speech" means "Those who can talk about the debate can talk about the debate". "Talking and debating" means that scholars should learn and use the methods and skills of talking and debating. Disciples must have the ability to skillfully use words and persuade others. Once again, a "double scholar" must be a "master of Taoism". "Bo Hu Dao Shu" is to cultivate versatile talents. In addition, Mozi also proposed that the concurrently talented person should have the good psychological quality and the

speculative ability, these thoughts manifested in the vocational education psychological education viewpoint.

2.3.3. "Intellectual skills 100 workers" innovative vocational education model

"Zhai thought if not recite first Wang Zhidao, and ask it to say; Read the sage's words, but examine his words. It is said that the maharaja is an adult and a man on foot. Maharaja adults use my words, the country will be ruled, ordinary men on foot use my words, compulsory. "Mozi believes that in the process of implementing the specific" upper theory ",different studies should be carried out according to different situations. For example, the story of "stopping Chu attacking Song" is the most successful example. Mozi also attached great importance to the education of "people in agriculture and industry". Mozi demanded that "all people in the world" be "frugal" in their lives, and that laborers be given various training and education in their labor skills, "and that there should be a four-phase teaching" to teach people what they can do[5]. Therefore, master strong professional application ability. Engaged in the study of science and technology, agriculture, industry, commerce, weapons and other aspects of knowledge to be used in production practice. The talents trained by vocational education should have strong on-site command, coordination ability, comprehensive application ability, emergency handling ability and psychological bearing ability, etc. We should vigorously carry forward the critical spirit and cultivate skilled and compound talents with strong practical ability.

2.3.4. "Described and done" applied personnel training model

Confucius's self-description is "to write without writing, to believe and to cherish the past". Mozi denied the theory of "stating but not doing" and thought it was wrong. However, it is wrong to "just say nothing". "Only stating but not doing" and "only doing but not stating" are the same results. The correct attitude is to inherit the good things from the past and create the existing values. Only in this way can people's knowledge be refined day by day. From this, we can see that Mozi believes that the creation, inheritance and development of human beings is a process. He advocates that every generation and everyone should do something. Mozi advocated believing in what he said, attaching importance to integrating theory with practice, applying what he learned, advocating "stating and doing" and holding that "scholars have knowledge but behavior is the essence". It can be seen from this that Mozi attaches great importance to practice and requires his disciples to match their words with deeds. He cannot just say empty words but not practice. Mozi stressed that it is more beneficial to create practice in scientific and technological activities than to "state without doing anything". Mozi believed that only creation is the true way of a gentleman. "The ancient Yi made a bow, Yi made a armor, Xi Zhong made a car, and skillfully made a boat. But today's Baohan craftsmen are all gentlemen, while Yi, Ya and Xi Zhong are all villains? And the people they follow will do what they have to do, but the people they follow are all small and humane, "which is exactly the truth.

Mozi's scientific thought attaches great importance to applying what he has learned and linking theory with practice. Mozi's scientific thought attaches great importance to guiding and enlightening students' practical operation and scientific experiment methods, and trains students' practical working ability and abstract thinking ability. When talking about optical knowledge, guide students to do "pinhole imaging" to prove the propagation of light. On the military side, he and his disciples jointly studied various military instruments and put them into production and application. In mathematics teaching, attention should be paid to the use of vivid teaching methods and vivid examples for metaphor.

2.3.5. "Individualized" personalized vocational education

Mozi advocates that teaching should proceed from reality and pay attention to individualized teaching and individualized development. When the disciple asked about the words "what is the most important thing for righteousness?" he said: "if you build a wall, you can build it; if you can make it real, you can make it real; if you can make it joyful, then the wall will be completed." For righteousness alone is also true. Those who can talk and argue talk and argue, those who can tell

stories tell stories, those who can do things, and then the righteous deeds come true. "Mozi believes that people with different talents will give different guidance and they will display different talents. If we all work together, the world will have nothing to do. Therefore, students should be taught according to their interests, hobbies and personalities, knowledge level, acceptance ability and psychological factors, and foster strengths and avoid weaknesses. At the same time, Mozi also proposed that teaching students according to their aptitude should be done according to time and events. Just as Mozi said when answering birds: "It is no good to say more, because it is also the time to say it." "Mozi's scientific thought fully embodies the principle of" teaching students according to their aptitude "in vocational education. He is the first person in the history of Chinese education who explicitly proposed education according to his abilities. He is also the only educator of this principle in the history of world education. It was thousands of years earlier than the modern western principle of capability. In contemporary vocational education, teachers should treat students "deeply, shallowly, profitably and with respect." "If teachers deviate from the students' reality, aim high and act blindly, they will have no aim or even be useless. In the process of education, teachers should apply different educational contents according to the differences of students' talents, interests, knowledge level, acceptance ability and psychological state. At the same time, different standards should be set according to the educational object's talent or ability.

2.3.6. "Unity of knowledge and practice" vocational education methods

Confucius said, "Learning without thinking is a labour lost; thinking without learning is perilous." "Confucius stressed the combination of learning and thinking in the teaching process. However, Mozi has expanded the breadth and concentration of "knowing and doing". Mozi requires that when students study, they can find out the true meaning of the cause of things, not only "know what it is" but also "know why it is". In Mozi, students are required to use their brains, think more, pay attention to the unity of knowing and doing, combine thinking with doing, and combine thinking with doing.

In the pursuit of knowledge, Mozi also stressed the importance of practice. He believed that knowledge came from the perception of objective things. Practice is the source of knowledge, and knowledge needs to be based on practice. Mozi also founded the semantic scientific experiment method, which played a great role in training students' thinking ability in images. For example, the pinhole imaging experiment in the Mohist Sutra shows the reason that light travels along a straight line and has modern characteristics beyond the times. Mozi's spirit of hard work, hard practice and scientific thought of "doing" embody their social ideal of loving the whole world. Mozi's understanding of "statement" and "action" has a broad connotation, which is more valuable for the enlightenment of contemporary vocational education.

2.3.7. Other vocational education ideas

Mozi's professional ideal of "combining morality with technology", his professional spirit of loving science, benefiting the world and respecting the law, and his practice of advocating wisdom and seeking truth, etc. embody Mozi's unique value pursuit for his profession. "Public Mencius said to his son Mozi:" A gentleman should wait for himself, ask how he will speak, and stop without asking how he will speak. For example, if the bell rings, the bell rings, and if the bell does not ring, the bell does not ring. " Mozi believes that the disadvantage of passive teaching is not only the fault of the teachers, but also may harm the society. Therefore, Mozi advocated "singing without deduction" and strongly taught people. In specific educational methods, Mozi proposed that "those who create things should also cite things and show them clearly." Mozi's educational spirit of active teaching was called the day by Chuang Tzu:" to travel around the world in this week, to say and teach under the sun, although the world does not take, to be strong and not give up, so the day up and down to see disgusted and strong also. "

In addition, in the process of education, Mozi emphasized the initiative of teachers, and paid attention to stimulating students' learning motivation, arousing students' enthusiasm and creativity, which showed that Mozi had already noticed the problem of human motivation. And understand this as a person's desire and motivation for knowledge. In today's society, in vocational education,

teachers should adjust the teaching system according to the specific situation, guide students' learning trends in time, and give correct, timely and appropriate guidance and education to students' appearances and problems in learning.

2.4. The Role of Mozi's Scientific Thought in Vocational Education should be Expounded

Mozi's scientific ideology embodies the important and unique position of vocational education. The vocational education ideology advocated by Mozi attaches great importance to the education and cultivation of scientific knowledge and technical ability, and attaches great importance to the cultivation of students' practical operation ability. This kind of vocational education ideology has important positive influence and reference significance for the development of vocational education at that time and today. Although Qin Shihuang basically wiped out Mohism in his burning books and burying Confucianism, Mozi's thoughts did not start a prairie fire at that time. However, Mohist thought, especially Mozi's scientific spirit and his complete scientific theoretical system, have equally important enlightenment on contemporary vocational education. The second revival of Mozi's scientific thought was in the late Qing Dynasty and the early Republic of China. At that time, ethnic crises were rampant and it was difficult to become a state. In spite of this, Mohist Scripture attaches great importance to science and technology, and logic is an important weapon for the recovery of science and technology in today's society.

Mozi's scientific thought was not valued and developed in feudal society. Based on the handicraft production practice advocated by Mozi, it actually meets the needs of social development. After Qin Shihuang unified the world, like all emperors, gangs and organizations that could disperse the country were not allowed to exist in order to maintain their imperial power. Because the feudal society, including Confucianism, Taoism, Legalism and other factions are very strong appeal. Because, without the support of the state and society, Mozi declined. In history, what has been left behind may not be all the cream, but some are also some mistakes. Therefore, what has been eliminated is not all the chaff but also the cream. In other words, if Mozi's theory could have been valued by the Chinese earlier, perhaps China could have achieved scientific achievements earlier than other countries. In short, scientific spirit is the central idea of vocational education. At present, our country is also strongly advocating the development of science and technology, the cultivation of innovative talents, and the birth of an applied talent cultivation mode. This shows the importance attached to vocational education in the contemporary era. How to do a good job in vocational education with a spirit of science and technology so as to make more achievements in vocational education astonish the world? We need to find ways from Mozi's scientific thought and take Mozi's scientific spirit 2,000 years ago as a guide.

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