

On relationship between Tao Xingzhi's thought of life education and new curriculum standard of China: I

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Abstract

Tao Xingzhi created the theory of life education from reality. After 80 years, Tao Xingzhi's life education thought still has very important modern value and guiding significance, it is same as *new curriculum standard* in many aspects such as the object view and so on.

Keywords: Tao Xingzhi; life education thought; new curriculum standard; relationship

1. Preface

Tao Xingzhi is one of the most influential educators in modern China. In the summer of 1917, Tao Xingzhi returned from the United States, and then he devoted to the education reform, advocated to change "instruct method" to "teaching method" and attached great importance to the process which students obtain experience themselves. In 1918, Tao Xingzhi first put forward the relationship between education with life, and he made a further explanation on "life education" in 1919.

In October 1921, Tao Xingzhi attended the 7th annual meeting of China education association held in Canton; the meeting adopted *the draft of schooling system*. In November, Tao Xingzhi was elected for a member of "new educational system of China" drafting committee of 7th China education association. In November 1922, China education association promulgated a new educational system plan: *Ren Xu educational system*. In the second year, the curriculum outline of each subject was published, in math curriculum outline of junior school, the purposes of mathematics education were stipulated as follows: A. Making the students launch results of things based on the mathematical relationship; B. Supplying research tools for natural science; C. Adapting to the need of social life; D. Developing students' logical ability with mathematical method. The purposes of mathematics education in this period are putting practicability on a par with theoretical, and focusing on the application. It emphasizes on developing students' mathematical ability, makes mathematics become research tools of natural science, and socialize mathematics to adapt to the need of social life. This is obviously affected by the Tao Xingzhi's life education thought.

After the founding of new China, Tao Xingzhi's education thoughts were repudiated totally. Between 1949 and 1958, the Soviet ten-year mathematics syllabus was basically copied in China. China's ministry of education promulgated the *provisional regulations of middle school (draft)* on March 18, 1952; it took basic knowledge and skills as main target. Before 1980s, teaching outline has been revised for five times, although it took "adapting to the needs of society" into the teaching purpose every time, but it has taken "double-base" as the composition of mathematical ability in fact.

Since the 1980s, education communication between China and international has been expanding, math education learnt the reasonable factors from the education of the developed countries, especially the United States, educational circles also began to reappraisal and study life education thought of Tao Xingzhi, mathematics education was affected by his education thought directly or indirectly. For example, the outline emphasized on cultivating students' interest in learning based on double-base and formed analysis solution actual problem ability in 1986. Middle school mathematics teaching outline stressed to make the students learn the necessary mathematical foundation knowledge and skills which every citizen adapt to the daily life in the contemporary society in 1993. In order to make education adapt to the knowledge economy and information age better, China has carried on the large scale of the eighth elementary education curriculum reform since 1996, the core objective was to change the tendency pay too much attention to knowledge, guide students to learn to study, cooperate, survive and behave, break the course orientation based on elitist and enters a higher school and pay attention to the all-round development of students. The content of *the full-time compulsory education mathematics curriculum standard* of China in 2011 (hereinafter referred to as the *new curriculum standard*) stressed to realize connection between mathematics and the life practice for several times and caused the student to learn mathematics used to daily life. Training the student become new generation with social responsibility, healthy personality, innovation spirit and practice ability, which is the embodiment of the Tao Xingzhi's life education thought. *The new curriculum standard* is same as Tao Xingzhi's life on objective, education, object and evaluation view, methodology, and many other aspects. It could say mathematics education of China have been under the influence of Tao Xingzhi's life education thought in different degrees since the 1920s.

2. The consistency between object view of Tao Xingzhi's life education thought and new curriculum standard

In view of "indoctrination" mode in middle and primary school classroom as well as the students be in passive state, basic idea of *new curriculum standard* point out: A. the mathematics curriculum should be committed to achieve the training objectives of compulsory education stage, face all students, adapt to the needs of the development of students' personality, and make everybody can obtain good mathematics education and different people have different development in mathematics; B. teaching activities is the process which teachers and students participate actively, interact and develop commonly. Effective teaching activities is the unity of the students' learning and teachers' teaching and students is the main body of learning, teachers are organizers, guiders, and cooperators. Mathematics teaching activities should stimulate students' interests, arouse the enthusiasm of students, trigger the students' mathematical thinking, and encourage students' creative thinking.

It pointed out in the implementation advice of *new curriculum standard*: mathematics teaching should be based on the specific teaching content, pay attention to students in obtaining indirect experience at the same time also can have the opportunity to gain direct experience, encourage students to learn actively and individually, improve the ability of finding problems and introducing questions continuously, the ability of analyzing and solving problems. In the mathematics teaching activity, it should pay attention to inspire students' positive thinking; promote the teaching democracy, and become good organizers, guiders, and cooperators of students' mathematics activities, stimulate students' learning potential, and encourage students to innovate and practice boldly. It should pay more attention to the subject status of students in the learning activities, effective mathematics teaching activity is the unity of the teachers' teaching and students learning, it should reflect the concept of "people-oriented" and promote students' all-round development.

The education mode of "indoctrination" was strongly criticized by the Tao Xingzhi. "Teaching method of indoctrination was intolerable; it filled people who learnt culture as Tientsin ducks." [1] vol. 3, p.463 While criticizing, Tao Xingzhi also put forward many new teaching concepts, advocated the teaching "should be tried to exercise students so that they could get the ability and attitude of observing, suspecting, hypothesis, testing, experiment, speculating, integration, analysis and correcting to explore the fountain of truth". [1] vol. 1, p.44 It advocated teachers and students interact in the classroom, and gave students "key of developing the treasure-house of civilization". [1] vol. 6, p.954 Tao Xingzhi put forward the training objectives of 27 Chinese characters aiming at the disadvantages of "exam-oriented education" in Xiaozhuang normal school: healthy body, the farmer's skill, scientific minds, interest of art and the spirit of reforming society. It was same as the comprehensive development of quality education goals which we advocate now. The "qualified and specialty" mode of success which he advocated was same as the all-round development, personality, specialty, and vocational education that we advocate today.

For mathematical requirement is too high, most students are indifference, fear, and hate, it proposed “the concept of public mathematics” in the fifth mathematics education conference. Since the 1980s, the conflict between “public education” and “elite education” in international mathematics education circles, elite mathematics education is the education mode at the expense of the sacrifice of most of the students mathematics study, and the public education is for all, it tries to make every student can grasp the mathematical knowledge, ideas and methods of the necessities of future life. From the point of view of education, “the public mathematics” is to make every citizen to accept necessary to apply to daily life and social practice the basic mathematics education. Therefore, mathematics education should be highlighted basic, universal, and developmental, realize that everyone gets the necessary mathematics and different people have different development in mathematics. From the point of view of life, “the public mathematics” is mathematics in life, mathematics is so intertwined with human survival quality information society, and it requires every citizen has higher mathematical literacy.

“Everyone” can learn math, which is all students’ common needs of mathematics education. Considering the students’ individual differences, it should make them contact, understand, and study math problems in their interest, meet the needs of each student’s mathematics farthest. It could provide more space for the students who have special abilities and interests with mathematics. The function of the course are not just impart knowledge, but also should make the students learn to behave, study, labor, live and aesthetic, and get comprehensive harmonious development, the target only could be achieved in the democracy of teaching. In 1921, Tao Xingzhi pointed out after investigating education of US: It is extremely efficient in Europe and the United States, and it gets the biggest effect with a minimum of time. It also has different education method, it is not good for students’ questions in the education of China, and it is good in US, judging the quality of education with the quantity of opportunity of students’ practice could make the students have an opportunity to make a full discussion and participation, and then he would be a good teacher. It gave students the opportunity of initiative and innovative ability in school, and they would have full creativity and judgment after graduation, that is the purpose of the republic education. ^{[1] vol. 6, p954} He thought true education must make people who could think and practice.

From the basic concept of *new curriculum standard*, we have seen the shadow of the democratic faith of Tao Xingzhi’s life education thought. The education democracy and students’ initiative which were advocated by Tao Xingzhi in the 1940s are the same as today’s educational reform goal. In 1945, he pointed out in his speech: the way of democratic education is to make students have initiative, and inspire the students can be conscious, objective and scientific, and have a wide variety, not limited to one, teachers should teach students in accordance of their aptitude and relate education with life. ^{[1] vol. 4, p576} He argued that democracy education should “let everyone do his best, the learning needs, each learn what he needs, each teach what he knows, and each is in his proper place. ^{[1] vol. 4, p591} He claimed that the creation of democracy and the creative democracy should be realized by training the students’ creativity in classroom teaching.

The influence between teachers and students is mutual, democratic teaching environment could protect the students’ interest in learning and improve the quality of student learning. Teachers should have tolerant and understanding attitude to protect students’ interest in learning, and create a relaxed and democratic environment for them. In order to cultivate the students’ ability, *ten characters formula of educating people* of Tao Xingzhi was brought up intensively to inspire the students’ intelligence, train the correct thought method, cultivate the students’ learning ability and improve students’ comprehensive quality. Ordinary class is every student must first learn the required cultural basic course, such as Chinese, math, foreign language, and scientific method. Teaching students with special education was put on very important position in Yucai School; it arranges special courses for students in accordance with their interests and talents with one-third time. Running special courses reflected Tao Xingzhi’s principle of teaching students in accordance of their aptitude, it could stimulate students’ interest in learning, enhance their self-confidence, and make them get great success in some aspects.

For a long time, Chinese students formed their own characteristics and advantages in the learning of mathematics, such as paying attention to “double-base” learning, having solid basic knowledge and proficient skills, in, and being the concern of the international mathematics education circle. We should affirm the advantages, at the same time; we also should face up the disadvantages. For example, students’ learning is in a passive position; they have poor ability of acquiring knowledge initiatively, analyzing and solving problems, and communication and cooperation. They are lack of interests and happy feelings in mathematics learning, mathematics learning is separated from social reality.

New curriculum standard has profound understanding for it, and puts forward specific solutions. Many of them are reflected for Tao Xingzhi's view of life education. It thought mathematics learning is an activity in *new curriculum standard*, each student has potential of discovery, and they could repeat human mathematical discovery process in the activity by organizing and finishing. Middle school students experience from real life in the activity, they go along human activities trajectory which are from problems to mathematical problems in life, from the concrete mathematics problems to the abstract mathematical concepts, from knowing the understanding of special relationship to finding the general rule, it could develop the empirical knowledge and thinking of mathematics in the mind of students into scientific conclusion. In the teaching process, teachers should pay attention to student's life experience, capture materials which are close to the students, gather mathematical examples of life, mine math prototype in life, resolve the abstract mathematical concept, theorem, formula and law to a series of interesting and abundant examples what students are familiar with in life, let the student "find" and "think" mathematics in life, and feel mathematics everywhere in life vividly. Through the analysis of actual production and life examples, teachers should cultivate students' interests in exploring and mathematical literacy in observing and analyzing.

Reference

[1] Tao Xingzhi, The complete works of Tao Xingzhi, *Sichuan Education Press*, 1991.