



Uphold Abacus Culture Highlight Chinese Characteristics

By He Yingqi, P.R.C

I. Course of Upholding Abacus Culture

Chinese abacus culture enjoys a long history of development and a reputable name in China. As a calculating tool, abacus has played a significant role in China's economic development and social progress. In 1970's and 1980's with increasing popularization of electronic computers, abacus was confronted with severe challenges. When it was predicted that Suanpan (Chinese abacus) would enter the museum, the abacus cause took a new look, catching attention of the world.

With the implementation of China's reform and opening policy, it is destined to vigorously develop economy and politics meanwhile to develop advanced culture, enriching people's ethical life and strengthening people's intelligence and ability. The Chinese characteristics refer to modern utility of the ancient, domestic utility of the foreign, stimulating any possible forces to promote modernization construction. China, as a developing country, must cherish any available resource. As abacus in Chinese ancient arithmetic technique, familiar to the masses, easy to learn and convenient for practice, and of little cost, there is no reason to abandon it. When alive, Premier Zhou Enlai once said, "Never abandon Suanpan (Chinese abacus), and it is dangerous for the monkey to eat peach." Deng Xiaoping, the general designer of the reform and opening-up policy, approved the Ministry of Finance by himself to guide on establishing the Chinese Zhusuan Association. Subsequently, each province and county established the Zhusuan association early or late. With supports of each department and with concerted efforts of the masses, these associations composed the grandeur and prosperity of abacus.

The spirit of "advancing with times, exploring and innovating" advocated by President Jiang Zemin is also fully embodied in the development of the abacus cause. With expansion of accounting electronic arithmetic, the Chinese Zhusuan Association has timely arranged educational activities on mental arithmetic by image of abacus popularization for children, not only accelerating various work of the Chinese Zhusuan Association, but also improving the cognition and confidence on Abacus work. Meanwhile, experiments on mental arithmetic by image of abacus education have gained breakthrough and received acclamation from parents and even all walks of life. Besides, People come to deeply understand that abacus is not solely a simple calculation instrument; it bears profound cultural connotation and various functions; and its exclusive remarkable function of developing intelligence and training talents entirely complies with the spirits of education reform, cutting burdens and comprehensively strengthening quality education put forward by the Ministry of Education. The excellent effects of mental arithmetic by image of abacus education have received applause from Jiang Zemin, Zhu Rongji, Li Lanqing and so on. In short, the development of the abacus cause has a direct bearing on development of economy culture, education, science and technology, achieving mutual prosperity, forming a benign recycle, and carrying forward abacus culture in the process.

II. Functions of Abacus

Functions of Abacus are broken into three categories; calculation function, education function and function of cultivating intelligence, mental arithmetic by image of abacus is the sublimation of abacus, taking advantage of functions of abacus in a way more super, abroad, profound and brilliant.

1. It is the basic function of abacus; whatever is available for written arithmetic can be solved by abacus, and even more simple and convenient. The date calculation when China launched its first man-made satellite was attributed partially to abacus.

Compared with the electronic computer, abacus has its exclusive advantages:

- 1) It has a simple structure, easy to learn and convenient to use.
- 2) Electricity is unnecessary.
- 3) The visual screen is unnecessary.
- 4) It is unavailable for the virus.
- 5) Its calculation starts from the high place to the low place, reducing people's fatigue.
- 6) It is not confined by digits.
- 7) Many actions are unnecessary (For instance: 0, dots, and various symbols are unseen in Abacus.). Therefore, abacus has some advantages in operations of addition, subtraction, and simple multiplication and division.

Abacus and mental arithmetic, without moving heads, has a much higher operation speed than abacus, both fast and convenient. (Zhu Qingying, champion of the mental arithmetic by image of abacus contest in 1997, sets a maximum record on addition and subtraction of 24 numeral in a second).

Those who often calculate in mental arithmetic by image of abacus have a cute sense of numerals and supper work efficiency: those who often turn to the computer have a stronger sense of reliance, a retrogressive sense of numerals, weaker ability of judge and higher ratio of mistakes. This should be also taken into consideration when the two instruments are compared.

It should be acknowledged that abacus and the electronic computer have their own advantages respectively, complement each other, and contribute together for the modernization construction.

2. Education Function

Education Function of abacus, in narrow sense, refers to that abacus can play a benign role in mathematics teaching. As we all know, in mathematics, a key fundamental course, many concepts are difficult to accept for children when only written arithmetic is applied, hence blocking teaching progress and quality. It is a key factor to overload students with burdens. But abacus plays a good role in solving the problem.

First, an abacus has the following features: It has a vivid structure, an order of digits, free parallel arrangement of bead-codes and easy variety of numbers. The number is expressed with beads moving. Addition and subtraction are connected to each other. The four fundamental operations are in close connection and interchange, with clear arithmetic principles. For instance, after learning consecutive addition of the same number, children can make out the nine-nine multiplication pithy formula by themselves.

Second, after introducing the abacus, the class becomes vigorous, active and interesting. As the abacus is both a teaching tool and a toy, students operate the abacus under guidance of the teacher and with check and correction given by the teacher, complying with children's physical characteristics, such as being active, fun-seeking and competitive. Therefore, the mathematics class with abacus is prone to catch children's attention with the fun of study, stimulate their study interest, and achieve the anticipated teaching effect.

Third, with a higher speed and accuracy than written arithmetic, mental arithmetic by image of abacus can reduce calculation burdens in student's assignments to a great extent.

In a broad sense, Abacus and mental arithmetic by image of abacus education also play a certain role in talents training, that is to say, cultivating excellent morality and quality and forging good ideology style and work style, because Abacus and mental arithmetic by image of abacus education emphasize integration of teaching and practice and integration of operation speed and accuracy, stimulate and promote students' enthusiasm on abacus and mental arithmetic study by means of frequent abacus skills contests and technique certification. In frequent operation and practices, people can be gradually trained with excellent styles, such as conscientiousness, responsibility, seeking truth from facts, self-respect and self-confidence, braving difficulty, carefulness and order.

3. Function of cultivating intelligence

The Abacus function of cultivating intelligence refers to that frequent application of abacus is beneficial to develop people's brains.

The process of abacus, from data input, to operation and at last to the result, is totally in the charge of people's brain and with the coordination of organs such as eyes, ears and hands. Quick and accurate calculation must require a high degree of attention, acute sensibility (for quick data input to the brain), then good memory and ability of analysis and judgment (for good method), good logical thinking (for quick and accurate operation), and at last prompt reflection ability (for quick and accurate result), all of which demand and promote coordination of the brain components. In frequent abacus practice, each operation may consolidate and stimulate intelligent factors, hence promoting their capability. Although, temporary improvement is limited but long-term and frequent advancement will make the stupid smart, just as constant water drops transverse at stone and many stone compose pagoda. So we can hold this idea: Abacus and mental arithmetic by image of abacus are the gymnastic for intelligence cultivation. Then we can easily explain the following phenomenon occurring in experiments: A student good at abacus and mental arithmetic not only gets good study records on mathematics but also makes

tangible progress on other subjects. This is because study performances and work ability are dependent on one's intelligence.

In addition to the above three functions, some other functions such as athletics function and fitness function can also be derived from them when in related activities.

III. Rejuvenating the Abacus Cause

As the above functions have been thoroughly seen in the past experiments on abacus and abacus and mental arithmetic, it is certain that carrying forward abacus culture and popularizing abacus and mental arithmetic education turn out to be an effective way for intelligence cultivations and talents training.

Upholding abacus culture requires efforts to carry out various abacus activities, both continuing abacus technique contests, abacus knowledge contests, grade appraisal, and academic exchanges that have proved effective and exploring new fields and pursue new carrier such as athletics, decrepitude resistance, poetry and folk arts, music and dance, craftwork art and mascots.

To carry forward abacus culture, we also need spread our mature experience to the rest of the world abacus culture is both national and worldwide. The vivid abacus structure and free parallel arrangement of bead-codes, like musical staff, are convenient for countries in various languages to accept. This is most clearly shown among the U S students, who share various languages. We should unite all abacus fellows in each country to spread abacus and mental arithmetic together in the world.

It is a great social project to carry forward abacus culture. Only abacus and mental arithmetic education popularization is involve in a series of social problems, such as education system, academic system, subjects, degrees, staff construction, textbook design, information provision, and cost investment. The key to solve them is to properly recognize them. Only when people properly understand advantages of abacus and mental arithmetic education, can other problems be easily handled.

The foundation of the World Association of Abacus and Mental Arithmetic historically turns out to be a milestone of the abacus cause development, like a flyover connecting all countries in the world, broadening the space for abacus cause. It will play a massive publicity impact in the world and encourage the morale of our various abacus activities. I wish the conference a good success and the friendship of Sino-foreign Abacus fellows everlasting. Let us strive together to best expand our abacus cause for the contemporary age and for the following times.

Courtesy:

(The author is a professor, and Vice-President of the Hubei Abacus Association.)