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### Updated CMA teaching method

Tai Chiang Ching always paid attention to new information and knowledge in order to update his teaching methods. Although he used a classic system of abacus mental arithmetic education, he was willing to learn and create innovative teaching methods that could lead trends.

For decades, the teaching method for abacus mental arithmetic in Taiwan has been a traditional Single-Handed Method and Ten-Finger Method. The Single-Handed Method means using your left hand to hold the abacus and then using your right hand to remove the beads. The Ten-Finger Method means using both hands, i.e. ten fingers to remove the beads for calculation.

During 1984 to 1989, nearly 90% of abacus mental arithmetic teachers in Taiwan applied the “Ten-Finger” teaching Method. However, Tai Chiang Ching found this kind of method different from the method that was being applied in national elementary schools.

The teaching method applied in the math class in national elementary schools was that each finger was represented as 1, and the five fingers of the right hand were represented as 5. However, in terms of abacus mental arithmetic, the thumb of the right hand was represented as 5, and the index finger, middle finger, ring finger and little finger were represented as 1, respectively. On the other hand, the thumb of left hand was represented as 50, and the index finger, middle finger and ring finger were represented as 10, respectively. Since the teaching methods applied in abacus mental arithmetic classes provided in tuition centres were different from those applied in national schools, students would get confused and find this system hard to understand.

Therefore, Tai Chiang Ching improved the “Single Hand” teaching method in 1989, and found the method of “Two-handed Abacus Manipulation” more startlingly efficient since he could use both right and left sides of the brain while calculating. Tai not only

studied the new method by himself, he also carried out it at the CMA and gained surprisingly successful outcomes. Applying Two-handed Abacus Manipulation on abacus mental arithmetic was found to be 33.33% more efficient than using a single-handed method. After Tai's first seed student, Su Wan-ting, had learned Two-handed Abacus Manipulation only for one year and eight months, she passed the test for level nine of mental arithmetic.

From 1995, Tai's Two-handed Abacus Manipulation had been included in teaching materials. Tai also planned to publish a set of teaching materials with 60 volumes of textbooks, where each volume had 64 pages. At that time, there was no teaching material of this kind. Publishing each volume cost \$30 NTD, including the fees of typing, design, plate making, printing and binding, etc. The total cost of publishing a set of 60 volumes with 2000 copies for each volume was \$360 million NTD. Tai told his wife, Hsu Hsiu-yun, who was in charge of the CMA and the family finances, about his publishing plan. Hsu immediately disagreed with the plan and said, "We don't have that much money." However, Tai was already determined to achieve his plan. He foresaw in the future that the profits for the teaching materials published by the CMA would be far more than the tuition earned.

Tai also predicted that the CMA would need a warehouse with nearly 1,000 square metres to store teaching materials and allow a truck to drive in and out. He also planned to have three staff take care of the packaging and the services when receiving orders from teachers and making shipments. He would also need an account to be charged at various companies. Tai and his wife often argued over this problem and had disputes. After all, putting this plan into practice needed a large amount of funds. Nevertheless, not every traditional abacus mental arithmetic teacher was willing to apply the method of "Two-handed Abacus Manipulation." Whenever Tai and Hsu argued, she would say angrily, "Your teaching materials are sent to the recycling centre (because no one will buy them)."

Finally, Tai went back home to carry out ancestor worship and seek guidance from his ancestors and deities. During this period, the deities agreed with Tai's plan to publish teaching materials and also

amazingly helped by naming his publisher the “You Ming Publishing Company.” Therefore, Tai and his wife finally reached an agreement to establish a publisher and started to research and develop the teaching materials of abacus mental arithmetic for the enterprise of publishing. After Tai succeeded in creating the innovative method of Two-handed Abacus Manipulation, he further improved the method, combining it with the image card features of a “brain phase diagram – imagery memorisation.” He also combined it with the application of computer multimedia, as the Internet has become increasingly pervasive. Thus, he successfully created a unique teaching method for the CMA: a learning method combined with Two-handed Abacus Manipulation, image numbering multimedia teaching, and Internet synchronisation.

This proved that Tai Chiang Ching had a strong sense of belief in self-examination and self-consciousness. He is always concerned with trends and does not avoid gaining new knowledge, thus applying his discoveries to his career expansion. He would insist on implementation and adjustment, in order to gain the greatest level of achievements.