

FM 93.8 LIVE interview with Sunny Tan and Cedric Chai



From Left: Sunny Tan author of "Unit Transfer Method", Cedric Chai and Alda Lim, co-authors of "LiSC-Science Answering Technique"

THE BETTER WAY TO STUDY FOR EXAMS

After months of hot-house tutoring, remedial lessons and practicing copious number of worksheets, November is the month for parents to anxiously wait for their children's PSLE results. There has always been a debate about the difficulty of the Maths and Science papers. One camp will claim that the exam was unfair because the questions were unfamiliar to the students. Then, there is another that is elated that their child went through revision questions similar to those that came out in the exam.

However, according to two expert educators, Sunny Tan and Cedric Chai, parents have been walking the wrong path in leading their children to top grades in Maths and Science.

Cedric Chai, a former Head of Department for Science at a local primary school, and Sunny Tan, a former Maths teacher with ten years of experience, believe examination emphasis too much focus on practice and a serious lack of focus on the thinking skills involved in preparation for such a major exam. "The idea that practice makes perfect is not so true for Science and Maths subjects," said Mr Chai. "Besides the relevant techniques and skills, students need a thinking framework that they can rely on when answering exam questions".

Schools adopt a holistic approach to the learning of Science. Teaching of content, process skills and answering of questions are all integrated into a single process. On the other hand, tuition centres focus is largely on practice. Without explicitly learning answering techniques, students may have a good grasp of the concepts but are not able to express themselves.

"What practice does is expose students to different scenarios. They rely on familiarity rather than thinking skills. But the PSLE curriculum requires students to use higher order thinking skills to solve unfamiliar problems. It is impossible for a student to be exposed to all possible scenarios. Practicing without a proper thinking framework may not get the student top grades," said Mr Tan.

Mr Chai now wants to change the trend in the learning of Science outside of schools. Using his 10 years of research, experience and involvement in various planning and research committees of the examination branch at the Ministry of Education (MOE), he came up with a methodology that will allow students to answer any Science questions in just three steps, namely: 1. linking questions to its tested concept correctly, 2. giving specific phrasing to their answers and, 3. stating clearly trends and degree of change when asked for comparison. Dubbed as LiSC, the method provides a complete and comprehensive system of studying, from understanding of concepts to mastery of processes and skills needed to develop correct answers. Each step targets a different aspect of the exam process to help students achieve excellence in Science exams.

For Mr Tan, he used to observed as a teacher how the revised primary Maths syllabus stumped children, parents and, sometimes, even teachers. It motivated him to research on how to teach young children to accurately choose and sequentially apply different situational logic in solving non-routine problems. Out of this research he developed the Unit Transfer Method (UTM), a powerful thinking framework that simplifies the learning and application of such problems. It uses ratio and tabulations to effectively analyze and solve challenging mathematical problems in a simple, logical yet effective technique.

"UTM is a powerful alternative to the Model method used in the textbooks which is easily picked up by students who rely on visual cues but is a struggle for students who have good number sense but are non-visual learners," said Mr Tan. UTM will allow a student to confidently tackle 70 per cent of the topics in the syllabus. Two other methodologies, namely Model and Heuristics, are still needed to answer the rest of the questions in PSLE. The breakthrough comes when students become proficient in all three methods and start customizing them to suit their own mode of learning.

Both UTM and LiSC have been field tested and proven effective in tackling unfamiliar Maths and Science questions. Students applying these methods have managed to break through a plateau in their scores. "But it is no magic cure that promises overnight results. Understanding the methods, then familiarization through correct practice is crucial. Therefore, time does make an important factor in preparation for PSLE," said Mr Tan. "Our method subscribes to the old adage: Give a man a fish; feed him for a day. Teach a man to fish, and feed him for a lifetime".