THINKING SKILLS

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We are living in a fast going world. Knowledge changes so quickly that we sometimes get lost in new technology. The world competed for natural resources in the past, but is competing for human resources now. So, being able to learn and think becomes a basic ability for survival.

Unfortunately, our students are always blamed to be spoon fed, lazy in thinking, passive in learning…etc. We must do something; otherwise our students surely cannot get along with the ever-changing world. ' To help students to build a good habit of mind' is one of the works we urgently need to do.

Singapore is famous for thinking skills training program. We have visited four secondary schools, namely,

a. Dunman Secondary School,
b. Anglican High School,
c. Manjusri Secondary School,
d. Serangoon Secondary School.

We observed their thinking program, hoping to learn from their experience, and see what we can do to benefit our students.

The report would be based on discussion and observation by our team members, the presentation and communication of the teachers from the four Singaporean schools we have visited, and some additional information from the web sites. We will try our best to think of the possibility of adopting the Singaporean experience given the limitations we face in Hong Kong.
The report focused on four aspects:

a. How important are the thinking skills in the context of education?
b. How to teach?
c. What to teach?
d. How to evaluate?

How important are the thinking skills in the context of education?

In Singapore, to what extent thinking skills are being emphasized? We can tell by the speech of Prime Minister of Singapore, Mr Goh Chok Tong, in an international conference on Thinking:

> *Singapore's vision for meeting the challenge for the future is encapsulated in four words: Thinking schools, learning nation. It is a vision for a total learning environment including students, teachers, parents, workers, companies, community organizations, and government.*

In Hong Kong, we have thinking skills, but they are taught in an implicit way. For example, Geography and E.P.A. emphasize analytic mind, and history teaches concepts of cause and effect. We also use induction and deduction method in various subjects.

In the document of ' learning to learn' published by Curriculum Development Council, thinking skills are mentioned several times:

a. In the section of learning goals, one of the goals is that students would be able to: *Develop creative thinking and master independent learning skills (e.g. critical thinking, information technology, self-management)*;
b. In the section of generic skills, … (generic skills) have been emphasized in many curriculum documents in the past, such as problem solving and communication in Target Oriented Curriculum, critical thinking in languages and many other subjects, and self-management skills in Social Studies and Liberal Studies. They are now re-iterated to highlight their relevance to achieving the aims of education, and new skills, such as information technology, that become important as a result of new challenges.

The Hong Kong Government sees the importance of thinking skills training and it would be a big topic in curriculum reform.

How to teach?

Schools in Singapore teach thinking skills, in two concurrent ways:

a. to teach explicitly for one or two periods a week (In Secondary 1 and 2)
b. to infuse into different subjects.

In the explicit thinking lessons, students are not only expected to learn the skills, but also to internalize them and use them. Each explicit lesson should train students to:

a. learn about the skills and use them.
b. explain the skills and understand the steps of the skill.
c. apply the skills and practise them.
d. process the skills and review the steps involved, and find out their relationship with other skills.

(Source: 7th international conference on thinking, symposium on the thinking program, the explicit teaching of thinking)

Strategies that facilitate the teaching of thinking by creating a classroom climate that value thinking are used. Examples of the productive habits of mind that are emphasized in the programme are tabulated below according to the general categories that they come under:

Critical Thinking	Creative Thinking	Self-regulated Thinking
• Being accurate and seeking accuracy	• Persevering	• Being aware of your own thinking
• Being clear and seeking clarity	• Pushing the limits of your knowledge and abilities	• Evaluating the effectiveness of your actions
• Being open-minded	• Generating new ways of viewing a situation outside the boundaries of standard conventions	• Being sensitive to feedback

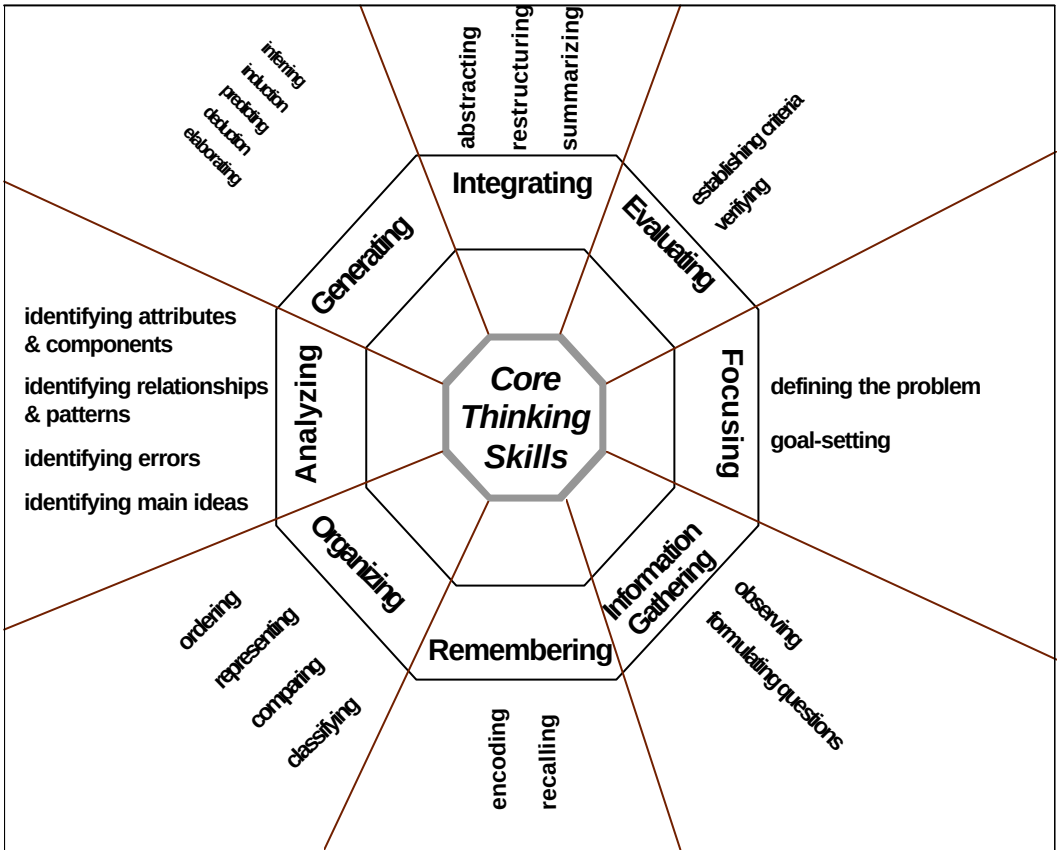
(Source: The Ministry of Education, Chua Meng Huat Paul and Helene Leong ' THE THINKING PROGRAMME IN SINGAPORE')

What to teach?

In Singapore, the objectives of the thinking program are clearly stated, which aim to enable students to:

a. acquire and understand the core thinking skills and the processes involved in using them,
b. apply these skills in the learning of content subjects and in real-life decision making and problem-solving situations, and
c. develop positive habits that would help them become critical, creative and self-regulated thinking learners.

The content of the thinking program involves eight core skills that are represented in the following diagram:



Adapted from: Jones et al. (1990).
Breakthroughs, Strategies for Thinking. Zaner - Bloser, Inc.

For the implementation of the thinking program, the Minister of Education suggests that two, out of the three listed elements should be included in every topic:

a. thinking skills,
b. moral/national education, and
c. information technology

There is a lot of support from the Government and school, which includes the following.

a. All teachers have the opportunity of taking training courses provided by the Government or by community organizations.
b. The Minister of Education provides a wide range of teaching materials, including posters, teaching aid, and lesson plans, which have the infusion of thinking skills.
c. School administrator is supportive. Timetable is flexible enough. In one of the schools we visited (the Anglican high school), students have four consecutive biology lessons so that they can concentrate on doing projects without disturbance.

In Hong Kong, we have nearly no support from the Education Department about teaching thinking skills. However, in some of our Class-master periods, we may teach some thinking skills. Some

subjects have already infused the skills into the curricula, but it is only restricted to very few subjects and very few topics.

How to evaluate?

Thinking skills are very difficult to evaluate. However, there are still solutions:

a. As directed by the Minister of education, there must be at least one open-ended question in every examination.
b. Teachers can observe how good students can apply the learned skills when they are doing projects.

Conclusion

Singapore gives a very high priority to thinking skills training, while Hong Kong is just starting now. It seems that we have a long way to go. However, can we take the advantage of starting late so that we can learn from others' experience and avoid pitfalls? We have our own situation; we cannot simply copy Singapore's practice. To implement the thinking skill training in Hong Kong, the first step is to arouse teachers' awareness. The Curriculum Development Council may see the importance of teaching thinking skills, but without the acceptance and devotion of teachers, all educational initiatives would fail. The second step should be teacher training. The training should include the basic theory and concepts of thinking, the teaching method, and most importantly, the teachers' intimate insight and modification to suit the existing school context.

Teachers may worry that creating a classroom climate which fosters thinking would be painful. Yes, we know that only when pupils feel at ease with their peers and teachers will they be more comfortable with responding and querying. One possible solution is to run an effective project-based learning lesson. Singapore is now urging teachers to use the project-based learning approach. In Hong Kong, some schools are trying this approach, too. A well-planned project may help students to learn thinking skills by using them during the process. So, if we really want our students to learn thinking skills, 'planning a lesson with infused thinking skills' should not be our main task. Instead, we should put more effort in planning good project works for students.

As mentioned in the introduction, we are living in an ever-changing world, so teaching our students how to learn is our mission. Teaching thinking skills, critical thinking, creativity, project works, all these are of the same purpose: to teach students how to learn. This is a basic survival skill, for our students, as well as for us.