AHSS Happy Hour Forum Sharing

Merging SRL with CAT
– lessons and insights from the development of LTL

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9-5-2017

#1 AHSS SRL program, started in 2012, was originated from an internal reflection and review on the Education reform of Hong Kong which commenced in 2000.

教育制度檢討：

教育改革建議

終身學習
自強不息

廿一世紀教育藍圖

學校和教師的新角色

首要任務

- 為教師創造空間，讓教師可以發揮專業判斷，因材施教

急須研究的問題

- 為了實踐上述建議，教師需要在觀念和角色上作出甚麼的變化？教師的主要精力應該放在甚麼地方？減少了篩選和淘汰，教學工作將以甚麼為主線索？
- 如何才能做到既不放棄每一個學生，又能讓大批傑出人材湧現？
- 為了實現教師的新角色，教師教育與教師發展應有甚麼相應改革？
- 教師本身如何實踐終身學習？
- 學校和教師，在學校以外的社會中，可以有甚麼貢獻？

#2 Education reform 2000 was kick-started by the official document *Learning to Learn* which aimed to develop students' independent learning capabilities for whole person development and life-long learning

Learning To Learn

The Way Forward in Curriculum Development

Consultation Document

Hong Kong Special Administrative Region of
The People's Republic of China
Curriculum Development Council
November 2000

課 程 發 展 路 向

學 會 學 習

終 身 學 習 全 人 發 展

課程發展議會
二〇〇一年六月

中華人民共和國香港特別行政區

Meaning of the Curriculum

- The school curriculum defines the views of society about 'what is worth learning', commensurate with students' abilities at different stages and with their ways of perceiving and learning about the world.

- We have to move away from the concept of the curriculum as "documents" to the concept of the curriculum as "learning experiences" to enhance the effectiveness of learning.

- Learning experiences are a nexus of

  ⇨ aims

  ⇨ learning processes

  ⇨ learning contents

  ⇨ social environment

(Curriculum Development Council 2001, 19)

Overarching principle and approach

Our overarching principle is to help students *Learn to Learn*, which involves developing their independent learning capabilities leading to whole-person development and life-long learning. It is hoped that these will result in an overall improvement in the quality of education. Broadly speaking, the means for bringing this about will include:
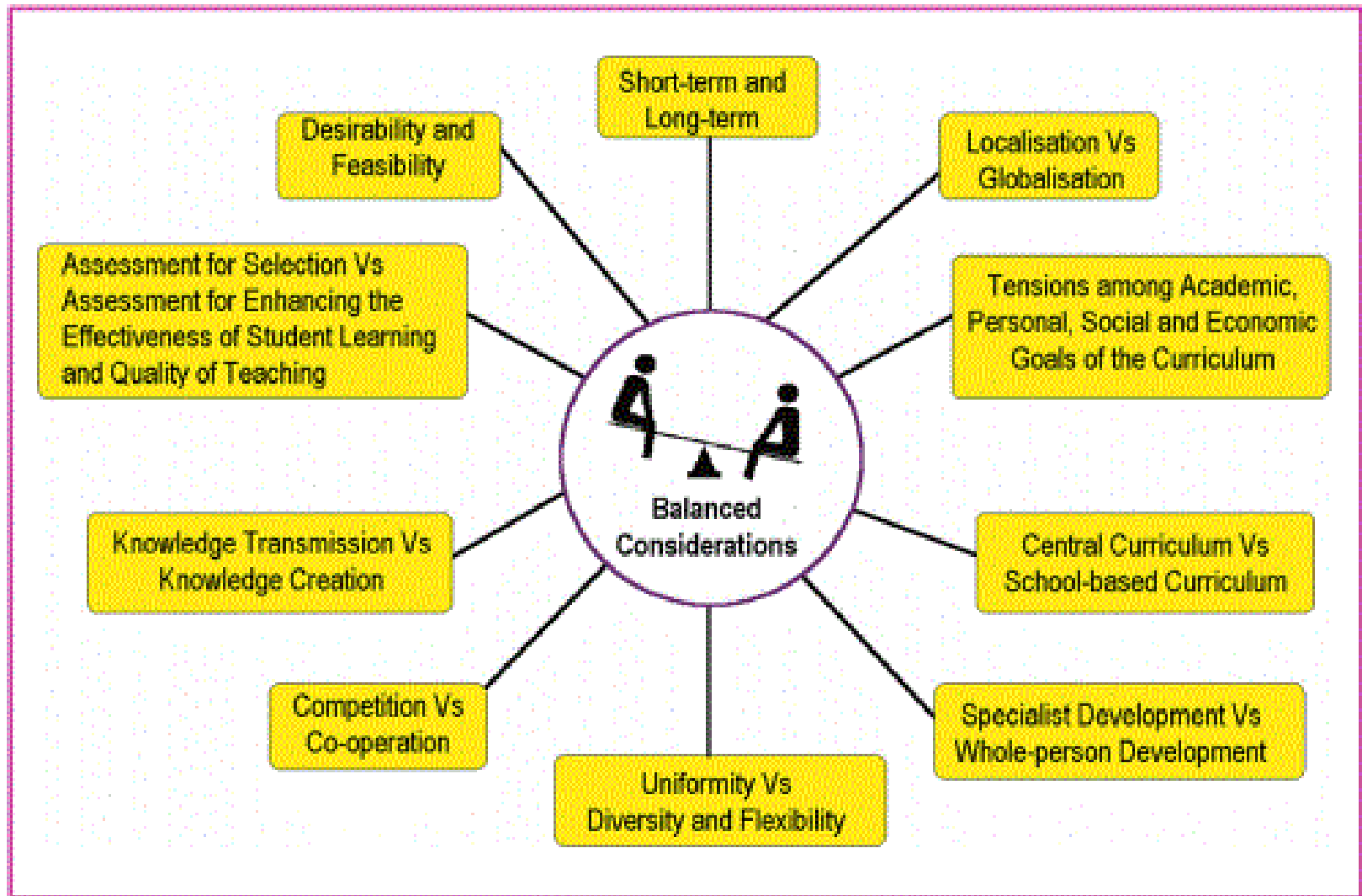
⇨ the development of generic skills (e.g. critical thinking, creativity, communication, etc.) in the context of Key Learning Areas and other relevant contexts

⇨ the use of different methods of learning and teaching to achieve learning targets

⇨ the development of students' own interests and potential

⇨ the widening of students' learning space for whole-person development

A learner-focused approach should be adopted. We should understand their needs, learning styles, interests and abilities, in order to decide on appropriate learning, teaching and assessment strategies.

(Curriculum Development Council 2001, 10)

#3 The *Learning to Learn* document marked an important shift in focus in curriculum development (e.g. the introduction of KLAs, generic skills and learning experiences), but the concept of independent learning capabilities in connection with metacognition and self-regulation, regrettably, has never been clearly elaborated.

Short-term and Long-term

Desirability and Feasibility

Localisation Vs Globalisation

Assessment for Selection Vs Assessment for Enhancing the Effectiveness of Student Learning and Quality of Teaching

Tensions among Academic, Personal, Social and Economic Goals of the Curriculum

Balanced Considerations

Knowledge Transmission Vs Knowledge Creation

Central Curriculum Vs School-based Curriculum

Competition Vs Co-operation

Specialist Development Vs Whole-person Development

Uniformity Vs Diversity and Flexibility

Tension
Balance between considerable factors in Curriculum Development
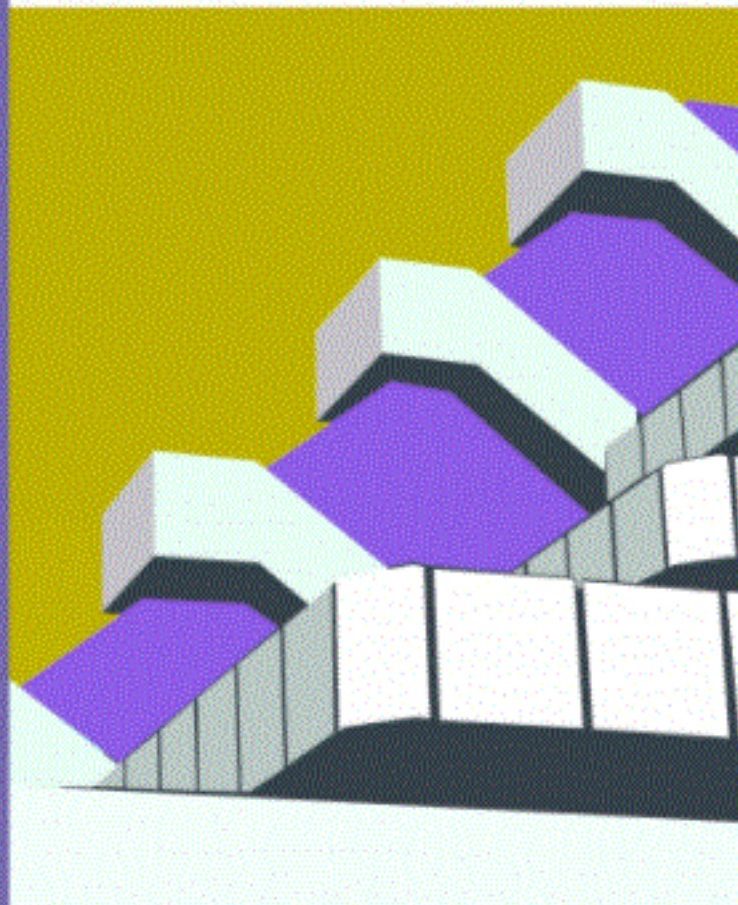
(Curriculum Development Council 2001, 11)

Curriculum, Schooling and Society in Hong Kong

Paul Morris and Bob Adamson

Education policy, cross-national tests of pupil achievement, and the pursuit of world-class schooling
A critical analysis

An inaugural professorial lecture by Paul Morris

This indicated a shift in the *intended curriculum* in focus to *learning rather than teaching*, and also reflects an increased emphasis on *metacognition* and *self-regulated processes of reflecting on,* and *learning about learning*. Thus the *new curriculum* is *not just* concerned with pupils learning *declarative knowledge*, as a key feature of the curriculum is the development of *generic skills* across academic subjects. Also, *Learning to Learn* identifies five *learning experiences* that together, form a conceptualization of *whole person development* that incorporates ethics, intellect, physique, social skills and aesthetics. ... This suggests that the planned curriculum for Hong Kong contains *a mixture of the various perspectives* ... : learning experiences based on *academic disciplines, cultural studies, employment/life skills* and *humanistic component*s

(Paul Morris & Bob Adamson, 118-119, *my italics*)

#4 Self-directed learning was officially recognized for the first time when the EDB announced its *Learning to Learn 2.0* after more than a decade of Education reform since 2000; however, the focus was again more on curriculum than on pedagogy and assessment.

Ongoing Renewal of the School Curriculum –

Focusing, Deepening and Sustaining

Updating the Technology Education Key Learning Area Curriculum

(Primary 1 to Secondary 6)

Consultation Brief

Curriculum Development Council
November 2015

Learning Challenges for Students

- **Develop self-directed learning skills** (e.g. teach less, learn more)

- **Embracing contextual changes to equip students for future society** (e.g. financial literacy, STEM, creativity and humanistic mindsets, reading across the curriculum, generation gap?)

- **Meeting diverse needs**

- **Important values** (East & West – e.g. respect for others, responsibility, commitment, perseverance,

- national identity, caring, integrity manifested at personal, family, local, national & global levels)

(KK Chan, 2014)

Learning to Learn (2001)

- All students can learn and succeed
- Open and flexible curriculum framework
- Broad and balanced learning experiences
- Life-long learning skills, values and attitudes
- …

Learning to Learn 2.0

- **Enhanced version** of "Learning to Learn"
- **Focus, deepen and sustain** the accomplishment
- **Ongoing Curriculum renewal and updating** in response to the contextual changes
- Direction for further development
- **Co-construction (learning community)**

(KK Chan, 2014)

Learning to Learn 2.0 – Moving Forward to Excel

Five "C"s to care about:

- **Curriculum leadership** in schools and holistic approach to curriculum planning
- **Consolidating** - interfaces, links and promote "joined-up" thinking in curriculum planning
- **Clarification** of myths and misunderstandings via essential tools (e.g. glossaries, KMS, capacity building portfolios, learning communities)
- **Celebrating** with good practices; unleashing 'lateral energy' among practitioner communities – the power of educational connoisseurship
- **Continuous renewal** of school/ central curriculum – as Ongoing process (cycles)

EXAMPLES of *highlighting, deepening or sustaining IN SCHOOLS*

Learning Goals	● Healthy Lifestyle, learning skills …
Knowledge	● Interfaces; spiral curriculum planning (e.g. not over-learn prematurely) ● Interdisciplinary learning in KSs ● Science and Technology (lower forms)
Generic Skills	● 3C + CSI [C- Collaboration; S – Self-management; I – IT skills] ● Computational thinking as cluster of skills and habits of mind
Values & Attitudes	● "Education is life; Life is education" , "Moral reasoning Plus", NI and Basic Law ● **Seven** Priority Values – **RESPONSIBILITY, COMMITMENT, PERSEVERANCE, RESPECT FOR OTHERS, NATIONAL IDENTITY, CARING,** ● Sense of future (career), sense of agency (self-regulation), sense of learning (autotelic being)
3 Possible Foci of literacies **Pedagogy**	● Entrepreneurship, STEM, Creativity and Humanistic Mindsets ● Self-directed learning – both *as pedagogy* and *as culture* ● Catering for diversity + Best use of diversity in classrooms ● Building up teachers' repertoire of L&T strategies (incl. e-learning)
Assessment	● Pedagogical content knowledge ● Assessment "Tripod" – "of, for, as" ; assessment literacy

Other Future directions
Communication - Stronger engagement with Stakeholders (esp. parents, students),
 Lateral energy - learning communities/ networks, communities of practices
Collaboration - More partnerships with 'key' and 'keen' players (e.g. employers, NGOs), **'star teachers'**
Looking Ahead 5-10 years

Discourse so far

(KK Chan, 2014)

#5 Instead of creating space for independent learning as promised in *Learning to Learn*, continual addition and cramming of compartmentalized learning content has made the development of LTL as core competences even more difficult.

My critique of LTL 2.0

- Framework constantly changing

- LTL as a complex construct is not well defined

- LTL as learning competences cannot be adequately measured and evaluated

- Changes in learning goals and values and their connection to learning not clearly explained

- Addition of more and more compartmentalized learning content

- Continual shrinkage of space for independent and experiential learning

#6 Unlike the situation in Hong Kong, the development of LTL, both in theory and in practice, has witnessed tremendous advancement internationally, particularly in EU, Sweden and Britain, all of their findings have clearly revealed the close connection between LTL and self-regulation and metacognition.
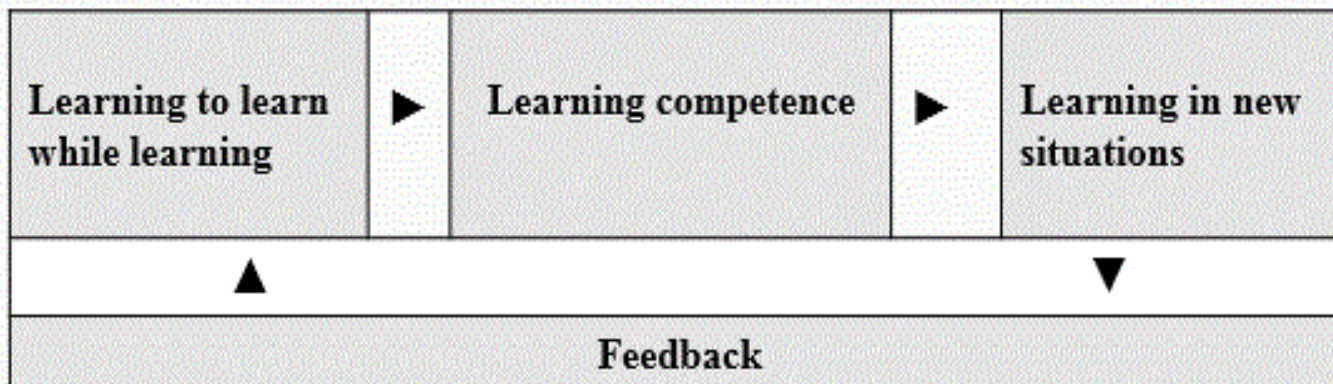
- eight key competencies

- Which skills and knowledge are needed for the knowledge society and for lifelong learning? European Framework for Key Competences (Education Council, 2006)

1. Communication in the mother tongue
2. Communication in foreign languages
3. Mathematical competence and basic competences in science and technology
4. Digital competence
5. **Learning to learn**
6. Social and civic competences
7. Sense of initiative and entrepreneurship
8. Cultural awareness and expression

(Fredriksson, 2013)

What is learning to learn?
– a European definition

- The ability to pursue and persist in learning
- To organise one's own learning, including through effective management of time and information, both individually and in groups.
- Awareness of one's learning process and needs, identifying available opportunities.
- Ability to overcome obstacles in order to learn successfully.
- Gaining, processing and assimilating new knowledge and skills.
- Seeking and making use of guidance.
- Build on prior learning and life experience: at home at work, in education and training.
- Motivation and Confidence.

(Fredriksson, 2013)

Learning to learn and learning

Learning to learn while learning	▶	Learning competence	▶	Learning in new situations
▲				▼
Feedback				

(Fredriksson, 2013)

Assessing learning to learn – a framework, University of Helsinki

- Learning to learn: *"the ability and willingness to adapt to novel tasks, activating one's commitment to thinking and the perspective of hope by means of maintaining one's cognitive and affective self-regulation in and of learning action"* (Hautamäki et al., 2002, p. 39).

- *"comprise various domains of skills and abilities. They can be divided into **cognitive skills and abilities** and **affective control skills and abilities**"* (Hautamäki et al., 2002, p. 41).

- Task acceptance(Hautamäki et al., 2002).

(Fredriksson, 2013)

British Campaign for learning

"'learning to learn' offers pupils an awareness of:

- how they prefer to learn and their learning strengths,
- how they can motivate themselves and have the self-confidence to succeed,
- things they should consider such as the importance of water, nutrition, sleep and a positive environment for learning,
- some of the specific strategies they can use, for example to improve their memory or make sense of complex information,
- some of the habits they should develop, such as reflecting on their learning so as to improve next time"
- (The Campaign for Learning, 2007).

(Fredriksson, 2013)

Learning to learn – self-regulation

- Self-regulating mechanisms:
- planning what to do next
- checking outcomes of strategies
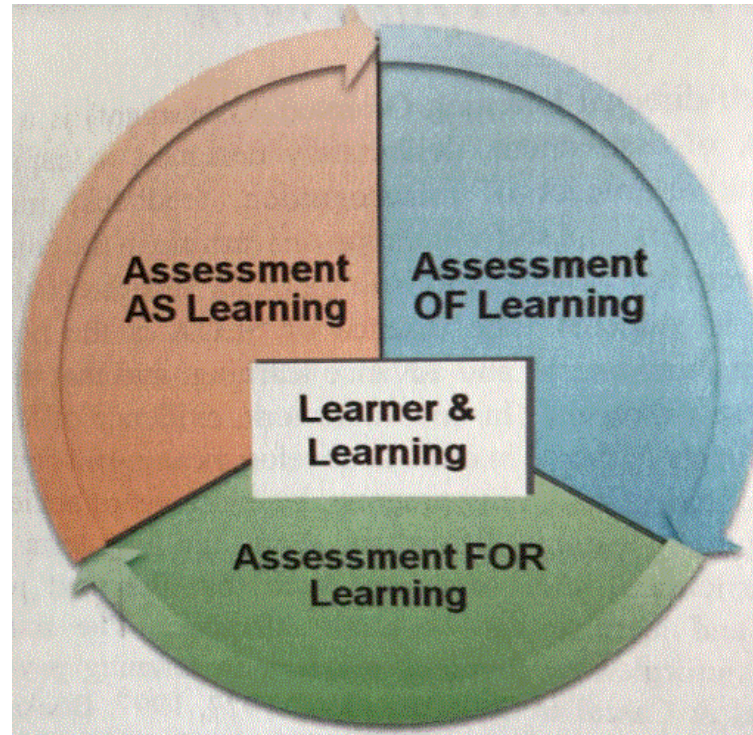- evaluating and revising strategies

(McCormick, 2006)

(Fredriksson, 2013)

Learning to learn - metalearning

- Metacognition - knowledge about cognition (knowing what you do and don´t know) (McCormick, 2006)

- Second-order learning – metalearning: *"Learning how to learn is at one stage further removed from any direct specific content of learning. It might therefore reasonably be called 'second-order learning'. There could be many such comparably second-order activities, such as deliberating how to deliberate, investigating how to investigate, thinking out how to think things out, and so on"* (Dearden, 1976. p. 70)

(Fredriksson, 2013)

#7 Studies on metacognition have further established the importance of assessment for learning and assessment as learning in developing students into self-regulated learners, while recent research on LTL in the classroom has shed insight on assessment capability, metatalk and other learning strategies which help students to take greater responsibility for their learning in the classroom.

SLOA

Self-directed Learning Oriented Assessment:

Assessment that Informs Learning &
Empowers the Learner

Magdalena Mo Ching MOK

PACE Publishing Ltd.

Magdalena Mo Ching Mok *Editor*

Self-directed Learning Oriented Assessments in the Asia-Pacific

UNEVOC

Springer

Self-directed Learning Oriented Assessment

The 3 components of Self-directed Learning Oriented Assessment

(Mok, 2010, 22, *my italics*)

Assessment for learning is a central component in this framework. It refers to the notion of collecting assessment data in order to inform and advance learning. *Feedback* is provided in order to address *3 crucial questions*: (1) What is the desired learning *goal*? (2) Where are we in learning? (3) Is there a *gap* between the desired goal and achievement? And if so, how to close the gap? *Assessment of learning* is used in SLOA to ascertain the present *level of achievement*. ... Assessment for learning and assessment of learning are largely *teacher initiatde*. As such, they are *not sufficient for 21st century*. With the rapid pace at which new knowledge is created, we need to prepare our students for a constantly changing world of work. We need to develop our *students into self-directed learners*. *Assessment as learning* means we want students to *take charge of their learning*. We want to develop in students the capacity for *self-motivation, self-assessment,* and *self-regulation.*

(Mok, 2010, 22-23, *my italics*)

Learning to learn in secondary classrooms

Rosemary Hipkins

Assessment capability

The concept of 'assessment capability' introduced in the above paragraph was initially proposed in the DANZ position paper (Absolum et al., 2009). Note that this is not a direct synonym for the more commonly used term 'assessment literacy'. The difference is telling: it lies in the emphasis given to active student involvement in their own assessment sense making and decision making (Booth, Hill, & Dixon, 2014). Booth and her colleagues note three conditions that need to be met simultaneously to build students' assessment capabilities. Students need teacher support to build:

- understanding of what constitutes quality in the intended learning
- the requisite metacognitive skills to effectively evaluate their work
- strategies to modify their own work during its production (Booth et al., 2014, pp. 141–142).

(Hipkins, 2015)

The DANZ paper further established a clear alignment between student involvement in this type of assessment activity and the *NZC* vision, values, principles and key competencies. It also addressed the issue of connections between learning to learn and lifelong learning:

> We see the development of students' assessment capabilities as a way of integrating the values and key competencies [of NZC] with active learning of curriculum 'content'. (Absolum et al., 2009, p.13)

> When students participate in the assessment of their own learning, they learn to recognise and understand main ideas and to apply new learning in different ways and situations. While at school, students have teachers on hand who can help them get better at making such judgments. If we want them to be able to assess their own learning later on, beyond school, we need to help them develop their assessment capabilities now. (Absolum et al., 2009, p. 20)

(Hipkins, 2015)

Metatalk

Table 2   **The metatalk opportunities implied by the factor items**

Item	Metatalk opportunities
Think and talk about how they are learning	Directly implicates metatalk about acts of learning (e.g., "Now we're going to hear about the strategies that different groups used to work that out".)
Explore and challenge their current understanding	Implies metatalk about how students are currently making meaning (e.g., "So we've seen two ways to explain this. How could we decide which of them might be a better fit with the evidence we currently have?")
Make connections with things in their own culture and life outside school	Cues metatalk that links learning to life beyond school. The intent could be to establish relevance, to build on previous experiences, or to link current learning to possible future uses.
Make explicit connections to learning from other subjects / learning areas	Cues metatalk about elements of learning that might be shared— or similar enough to compare (e.g., "Where else have you learned about making inferences?" and "What is the same and what is different to the way we are doing this?")
Discuss different ways of looking at things, different interpretations	Cues an epistemic conversation about how meaning is made in specific discipline areas, or an explicit conversation about how different world views or different cultural values influence how a specific event or phenomenon is understood[12]
Hear about your assessment decision making	Metatalk opportunity is to help students build awareness of themselves as knowers and the fit between their current demonstrations of achievement and what the teacher is looking for as evidence of learning (e.g., "What I was hoping to see was …")
Integrate literacy components where possible	Metatalk opportunity is to draw students' attention to the purposeful dual intent (e.g., "Now we're going to look at how descriptions are structured and why science accounts use the sorts of language they do").

(Hipkins, 2015)

How students are involved in taking greater responsibility for their learning in secondary classrooms
(Rosemary Hipkins, 2015, 26)

1. Assess their own work against set criteria

2. Review their progress with teacher and parents

3. Critique examples of actual work of a range of quality

4. Identify and pursue an aspect of learning that personally interests them

5. Assess each other's work and give each other feedback

6. Peer review each other's work

7. Describe their own learning achievements (e.g. through portfolios, reflection books)

8. Identify their own learning needs (e.g. learning logs)

9. Co-create own NCEA plan related their pathways goals

10. Help set expected outcomes/standards for assigned work

11. Take part in e-learning conversations/blogs etc.

12. Help set assessment tasks

#8 When properly designed and aligned with curriculum and pedagogy, CAT can be a powerful tool to provide feedback and scaffolding in the learning processes and facilitate students' self-monitoring, self-recoding, self-evaluation and self-adjustment, all of which are important aspects of SRL.

CKSDAT系統評估的優點及其與自主學習的關係
(Ho,2017)

1. 知識架構 - 有助學習目標及評估準則的建立

2. 短準快評 - 節省評估時間使學生學習更聚焦

3. 難點節連 - 辨識學習難點及它們在知識結構中的相互關連

4. 補救路徑 - 根據知識節點的關連提供個人化補救學習路徑

5. 個別學習 - 透過動態智能電子平台促進學生的個人化學習

6. 適性教學 - 協助教師適時準確全面掌握學生學習以調整教學

這些優點非常有利於自主學習：

➢ 先學後教 - 促進「先學」的準備

➢ 以學定教 - 提供「定教」的憑證

➢ 教少學多 - 辨識「學多」的重點

➢ 減負增效 - 提高「減負」的效率

#9 The greatest potential of CAT lies in personalized learning, which unlike standardized teaching, can differentiate learning goals, curriculum content, teaching strategies and remedial learning and teaching according to students' individual needs through the use of Computerized Knowledge Structure-based Dynamic Adaptive Assessment, thus helping students to become real self-regulated learners.

Standardized Teaching VS Personalized Learning

Standardized Teaching for all students	**Personalized Learning** for individual students
same goals	differentiated goals
same curriculum content	differentiated curriculum content
same teaching strategies	differentiated teaching strategies
same assessment	adaptive assessment
same remedial teaching	adaptive remedial learning

【新世紀香港社會研究系列】

鄭燕祥 著

香港教改

三部變奏

中華書局

	教育三重化		
	全球化	本地化	個別化
目標／功能	使教育獲得全球性視野、機會和資源，並關心世界人類的未來	使教育得到最大的本地學習資源和機會，並培養愛護本地的人文情懷	使教育配合個體的特性，從而擁有最大的動機、主動性及創意
學習活動例子	• 關心並研習世界性發展課題 • 國際訪問、交流、沉浸學習 • 國際視像會議的互動與分享 • 網上國際學習經驗 • 全球視野有關的課程內容	• 關心並研習本地的發展 • 社區服務的學習經驗 • 專家駐校訪校，將資源帶入學校 • 社區機構在學習及服務的合作 • 本地文化推廣及學習	• 個別化學習目標、方法及進度 • 培養自我學習、自我實現及自我激勵 • 發展學生成有個性、另具馭勢而行的本領 • 助長獨立思考及創意發展 • 培養情境多元智能

應該根據學習、教學和評估的範式轉變，形成一種新的質素保證概念。換言之，改革努力和質素舉措應該由新的教育範式驅動。因此，教育工作者要思考下列問題：

a) 應如何重組教學和學習的過程和內涵，以達成學習的全球化、.本地化和個人化，以及發展學生的CMI或二十一世紀能力；

b) 如何通過IT的應用、多元創新的教學，使學生得到最大化的學習機會；

c) 如何推進學生的自我學習，以發展其終身學習的 能力；

d) 學生如何學會自己組織全球化、本地化和個人化的自我學習。

(Cheng, 2017, 31)

#10 Drawing on the lessons and insights of the development of LTL as outlined above, and my classification of the three types of assessment, I finally proposed my reconstructed framework of LTL 2.0, which hopefully will enable us to move from SRL 1.0 to SRL 2.0 with the support of appropriate e-learning environment and tools.

The 3 types of Assessment

Assessment for Selection

■ Teaching – Learning – Assessment – Re-teaching - - -

Assessment for Learning

■ Assessment – Teaching – Learning – Assessment - - -

Assessment for Learning to learn (assessment of, for & as SRL)

■ Learning – Assessment – Learning – Adaptive Assessment –
Learning --- – Teaching – Learning -- Assessment - - -

My reconstruction of LTL 2.0

➢ Personalized learning

➢ e-learning environment and tools (flipped classroom, blended learning, MOOCs)

➢ Assessment capability and metatalk

➢ Adaptive assessment and SRL assessment (assessment of, for and as SRL)

➢ Self-regulation, co-regulation & socially shared regulation

   (SRL 1.0: motivation and behaviour → SRL 2.0: cognitive strategies and metacognition)