

**Seminar Series for Middle Managers: NSS Curriculum and Assessment Planning
(Information and Communication Technology) (Refreshed)**

Programme

Date: 10 May 2012 (Thursday)

Time: 2:00 p.m. – 5:00 p.m.

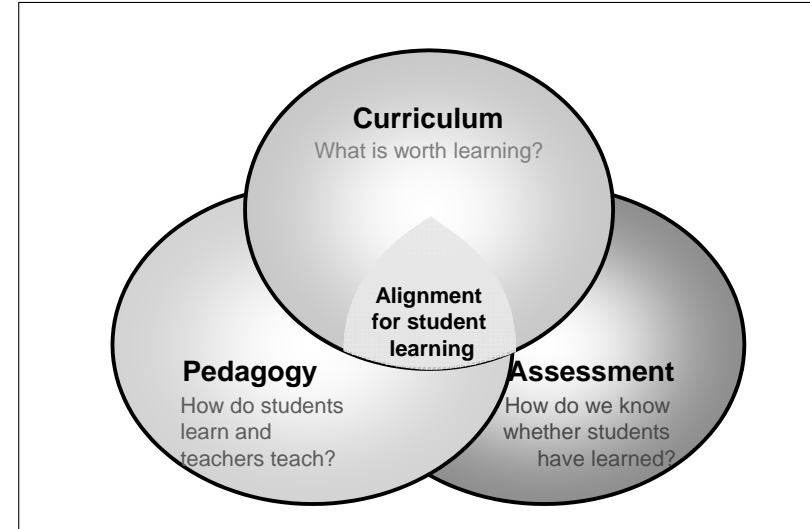
Venue: Room W422-423, 4th Floor,
EDB Kowloon Tong Education Services Centre, 19 Suffolk Road, Kowloon Tong

Time	Content / Activity	Speaker(s)
2:00 p.m.	Registration	
2:15 p.m.	Guiding principles for managing and planning the NSS ICT curriculum	Mr LUI Sze-ming, Atkin Curriculum Development Officer (Technology Education), Curriculum Development Institute, Education Bureau
2:50 p.m.	Experience Sharing (1)	Mr. CHEN King-yeung Computer Panel Head, PHC Wing Kwong College
3:30 p.m.	Break and Professional Exchange	
3:45 p.m.	Experience Sharing (2)	Mr. WONG Pak-yick Computer Panel Head, CUHKFAA Chan Chun Ha Secondary School
4:25 p.m.	Concluding Remark	Mr LUI Sze-ming, Atkin
4:45 p.m.	Q&A	All speakers

Maze or Matrix !?

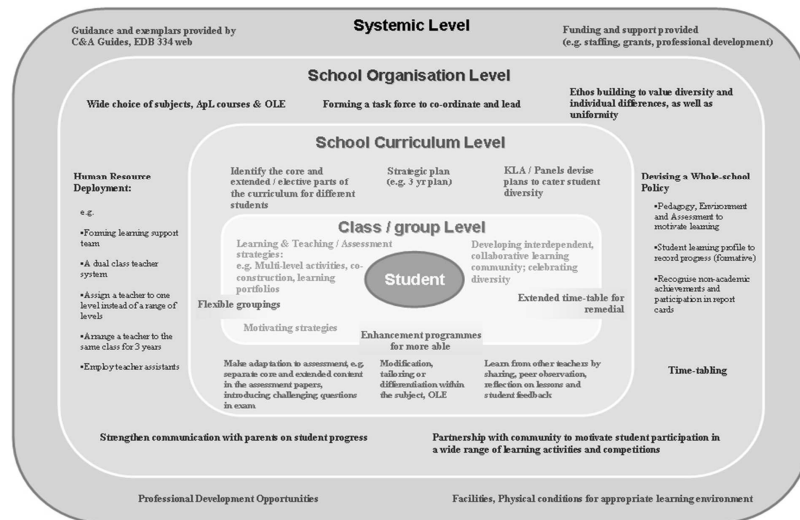
	Curriculum	Pedagogy	Assessment
Different Ability			
Different Learning Style			
Different Interest / Aptitude			

Curriculum, Pedagogy and Assessment



Adapted from Booklet 3, Senior Secondary Curriculum Guide (CDC, 2009)

Catering for Learner Diversity



Booklet 7, Senior Secondary Curriculum Guide (CDC, 2009)

Action Verbs in Learning Outcomes

Examples of action verbs

Students need to demonstrate

Be aware of, know, define, write, list, relate, recognise, state	The recall and understanding of specific terms or facts and simple concepts.
Discuss, describe, explain, identify, demonstrate, apply, convert	The application of declarative knowledge and practical skills in particular contexts.
Distinguish, analyse, compare, evaluate, organise, prepare, test	The analysis of materials or systems into their constituent parts and the recognition of relationships between parts.
Develop, plan, design, construct, process, integrate, implement	The synthesis of concepts and skills from different areas into a plan for solving a problem or reaching a conclusion, and the transfer of learnt concepts and skills to new scenarios / situations.

Information and Communication Technology Curriculum and Assessment Guide (Secondary 4 – 6) (CDC and HKEAA, 2007)

Example: Internet and its Applications

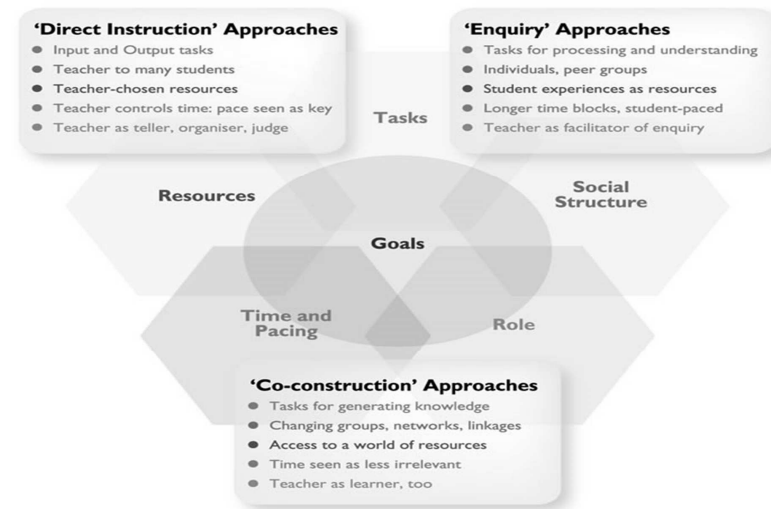
Examples of action verbs

Students need to demonstrate

Understand the need for communications software and communication protocols.	The recall and understanding of specific terms or facts and simple concepts.
Explain the functions of the hardware required for a network.	The application of declarative knowledge and practical skills in particular contexts.
Compare common methods for Internet access in terms of speed, cost, security and availability.	The analysis of materials or systems into their constituent parts and the recognition of relationships between parts.
Design and construct web pages, by writing HTML or by using a web authoring tool, for an intended audience and upload them onto the World Wide Web.	The synthesis of concepts and skills from different areas into a plan for solving a problem or reaching a conclusion, and the transfer of learnt concepts and skills to new scenarios / situations.

Information and Communication Technology Curriculum and Assessment Guide (Secondary 4 – 6) (CDC and HKEAA, 2007)

Learning and Teaching Strategies



Booklet 3, Senior Secondary Curriculum Guide (CDC, 2009)

Strategies referred in past PD Programmes

Learning and Teaching Strategies

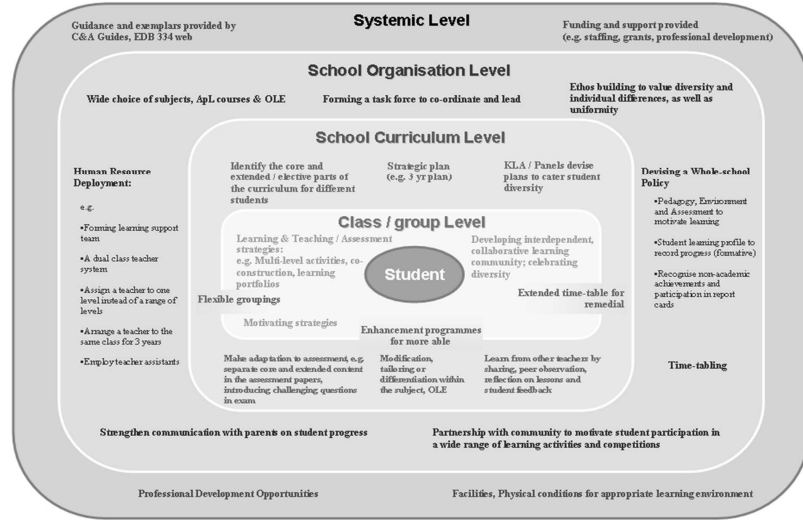
- Quality Interaction
 - Classroom protocol, Friendly environment, Questioning skill, Oral assessment
 - Designing questions using 4MAT model to cater for different learning styles
- Catering for Learner Diversity
 - Using multisensory learning (multimedia learning) principle to design instructional materials
 - Pacing learning and teaching according to the abilities of learners
 - Grouping strategy: encouraging cooperative learning
 - For enriching the perspectives and the experiences of learners

Strategies referred in past PD Programmes

Assessment Strategy

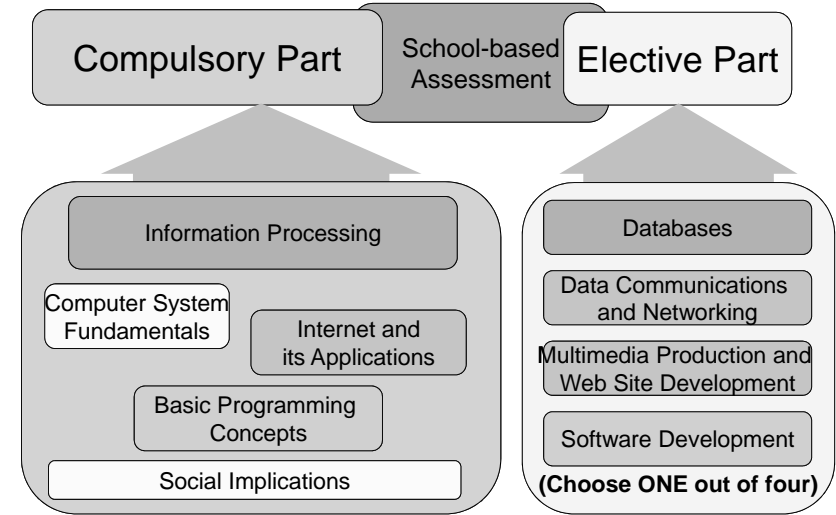
- Catering for Learner Diversity
 - Adjusting assessment practices to find out the strengths and weaknesses of different learners by using different modes of assessment, and then decide the appropriate learning and teaching strategies for learners with different potentials
 - Paper and Pencil Assessment
 - Performance-based Assessment
 - Oral Assessment
 - Self Assessment, Peer Assessment
 - Considering factors affecting the learning needs of learners
- Assessment Literacy
 - Questioning techniques in oral questioning
 - Assessment samples

Catering for Learner Diversity



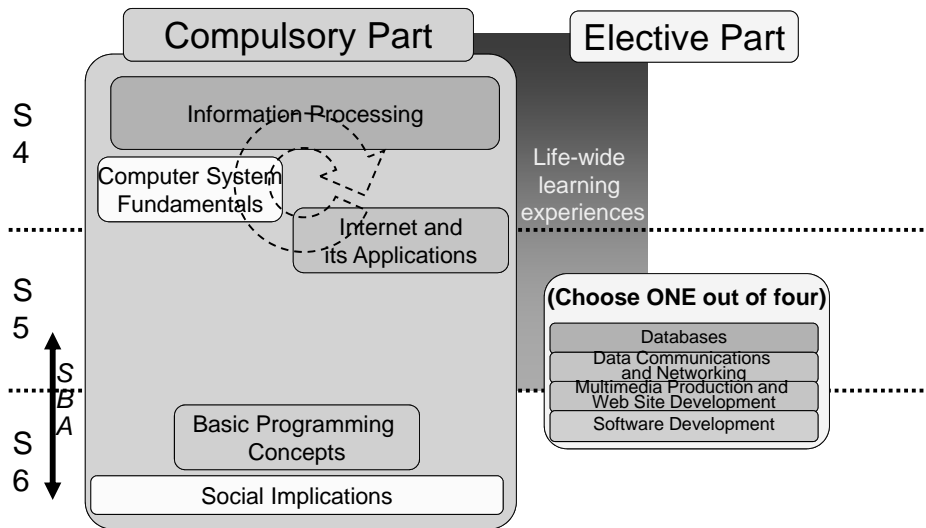
Booklet 7, Senior Secondary Curriculum Guide (CDC, 2009)

Curriculum Framework

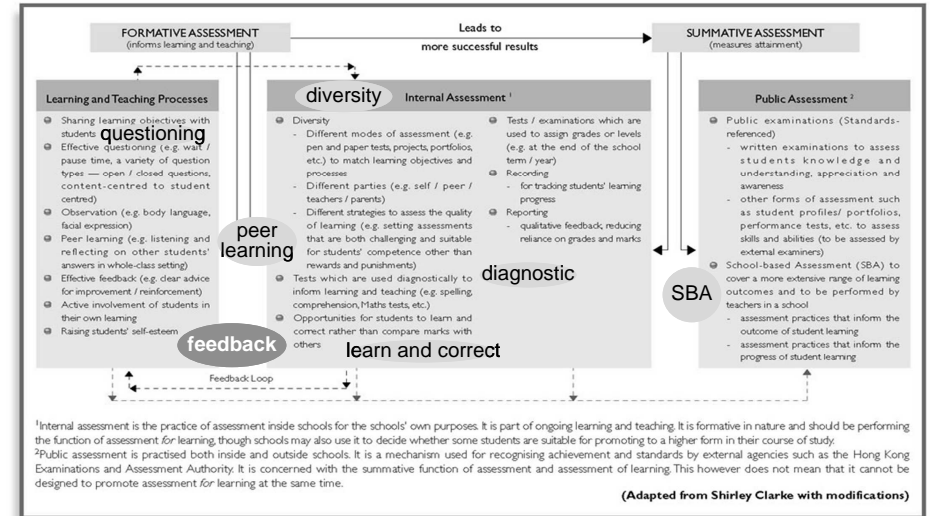


Adapted from Information and Communication Technology Curriculum and Assessment Guide (Secondary 4 – 6) (CDC and HKEAA, 2007)

Learning Progression: Commonly Seen Teaching Sequence



Assessment: A Framework of School Assessment Practices



¹Internal assessment is the practice of assessment inside schools for the schools' own purposes. It is part of ongoing learning and teaching. It is formative in nature and should be promoting the function of assessment for learning, though schools may also use it to decide whether some students are suitable for promoting to a higher form in their course of study.
²Public assessment is practised both inside and outside schools. It is a mechanism used for recognising achievement and standards by external agencies such as the Hong Kong Examinations and Assessment Authority. It is concerned with the summative function of assessment and assessment of learning. This however does not mean that it cannot be designed to promote assessment for learning at the same time.

(Adapted from Shirley Clarke with modifications)

Booklet 4, Senior Secondary Curriculum Guide (CDC, 2009)

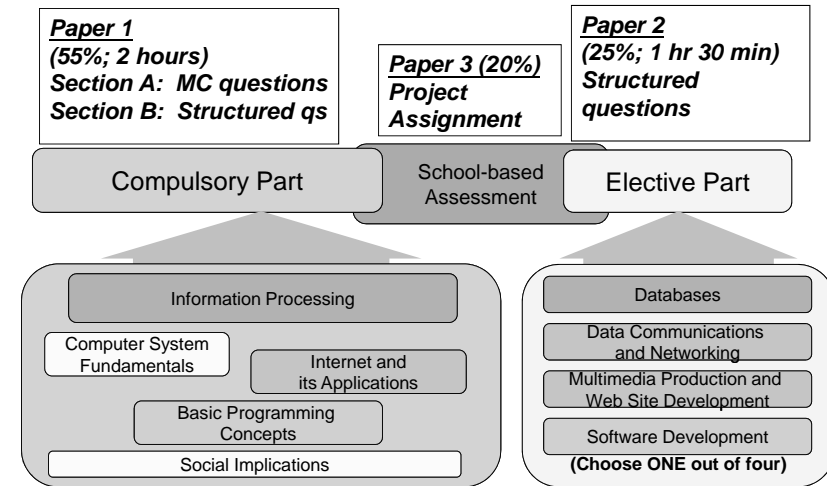
Example of a Diversified Assessment Plan

Mode of Assessment	Examples of Learning Outcome
Mid-year written examination	•Understand how data are organised and represented inside a computer
Final written examination	•Compare common methods for Internet access in terms of speed, cost, security and availability
Online quizzes (self-assessed)	•Describe how errors can be detected and prevented by using validation and parity checking
Project work	•Design and construct web pages for an intended audience
Oral questioning	•Discuss the common services available in a networked environment
Practical tasks (Teachers' observation)	•Convert multimedia elements into digital format
Students' self-reflection	•Appreciate how advances in information and communication technologies foster the emergence and development of the information age and to recognise its impact on our society

Adapted from Booklet 4, Senior Secondary Curriculum Guide (CDC, 2009)

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Mode of Assessment



Adapted from Information and Communication Technology Curriculum and Assessment Guide (Secondary 4 – 6) (CDC and HKEAA, 2007)

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Think about ...

- How do I organize the 3-year senior secondary curriculum?
- Any difficulty I have in designing school-based curriculum?
- Up to now, is there any problem encountered in student learning? What is this?
- Did I spent a lot of time handling (students') ...
 - assessment → test? Project assignment for SBA?
 - consolidate basic skills/knowledge → forget, re-teach, re-test?
 - learning problems → remedial teaching?

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Difficulties in designing school-based curriculum and assessment

- Gauge the breadth and depth of curriculum
- Hauled by “project assignment”?
- Lay solid foundation for students
- In curriculum organization,
 - integrate compulsory and elective parts
 - connect SBA “project assignment” with teaching
- Design multi-tier exam paper at different stage of learning

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Key Points for Case (1)

- Curriculum Planning
 - Guide students to learn more complex topics only after basic subject knowledge of the topic was taught and consolidated
 - Elective part was taught immediately after the completion of related compulsory module
- Assessment Planning
 - Short questions included in exam paper in initial stage
 - Gradual change of number of papers, number of questions and mark allocation in exam papers by phases to match the HKDSE style
 - Peer evaluation on performance-based assignment

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Key Points for Case (1)

- Catering for Student Diversity
 - Through peer tutoring, students of low and high academic ability can interact and complement each other
 - Heterogeneous grouping in practical class, together with peer evaluation, to promote cooperative learning

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Key Points for Case (2)

- Curriculum Planning
 - Spiral curriculum design to learn complex topics in phases
 - Specific timetabled lesson assigned for practical activities every week, such that learning of theory and practical topics was arranged in parallel
- Assessment Planning
 - Diverse mode of assessment (oral questioning, individual projects etc.)
 - Short and focused assessment
 - Conduct short MC quiz using online platform to provide immediate quantitative and qualitative feedback

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Key Points for Case (2)

- Catering for Student Diversity
 - Carefully arranged seating plan to promote peer learning
 - Provide different ways to support students of different abilities, including supplementary tests, extra practices, outside school activities

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Key Points for Case (3)

- Curriculum Planning
 - Adapted curriculum based on school context to help student master fundamental subject knowledge in early stage
 - Offer option in the elective part based on students' preference
- Assessment Planning
 - Promote self-regulated learning using strategies like open book quiz and "peer" evaluation across levels
 - Build up students' self-confidence and enhance student motivation in learning using tiered assignment and multi-tier summative assessment

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Key Points for Case (3)

- Catering for Student Diversity
 - Use of various learning and teaching resources (e.g. animation) to conduct multi-sensory instruction to cater for different learning style
 - Use of cooperative learning strategy (e.g. jigsaw) during teaching as well as assessment to facilitate peer learning

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Contextual Learning: Automatic Teller Machine

- Relationship with the curriculum
 - Information Processing
 - Computer System Fundamentals
 - Internet and its Applications
 - Basic Programming Concepts
 - Social Implications
 - Databases
 - Data Communications and Networking
 - Multimedia Production and Web Site Development
 - Software Development
- How to apply context (scenario) in assessment?



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Guiding Questions Examples for the Conduct of SBA

1. Have you had any meaningful use of formatting features in the project report? (p.14)
2. Have you justified the use of devices in the project? (p.19)
3. Have you valued and appraised the significance of the development of the communication technology for your project? (p.25)
4. Have you habitually used the modular approach to handle the problems in the project? (p.29)
5. Have you considered intellectual property and privacy when doing the project? (p.32)

Adapted from handout from an SBA workshop on 22.1.2011

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Guiding Questions Examples for the Conduct of SBA

6. Have you well defined the scope of the project?
7. Have you well planned the project timeline?
8. Have you well communicated with the project stakeholders?
9. Have you considered the environmental factors of the project such as the availability of hardware and software resources and the understanding of the relevant knowledge?
10. Have you considered the latest developments of the topics concerned?

Adapted from handout from an SBA workshop on 22.1.2011

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Guiding Questions Examples for the Conduct of SBA

- A. Have you applied database concepts such as integrity constraints? (p.39)
- B. Have you produced the needs analysis and represented it in a diagram? (p.50)
- C. Have you produced dynamic and interactive elements such as interactive user selection and data validation and manipulation in your web site? (p.60)
- D. Have you considered alternative algorithms with different complexities and data structures? (p.63)

Adapted from handout from an SBA workshop on 22.1.2011

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When planning school-based curriculum and assessment ...

- Integrate
 - Teaching of compulsory and elective parts
 - Daily teaching with SBA
- Towards self-regulated learning (SRL)
 - Lay solid foundation for students
 - Teacher guides students towards SRL
- Progressive learning and assessment
 - Enhance self-confidence and ability
- Teaching in accordance with individual abilities
 - Each in his own way while aligned with C&A guide

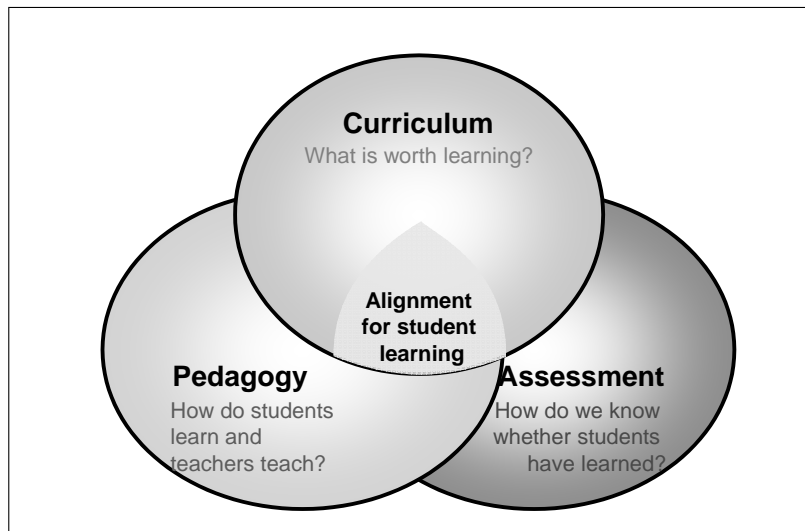
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Evaluate and adjust school-based curriculum

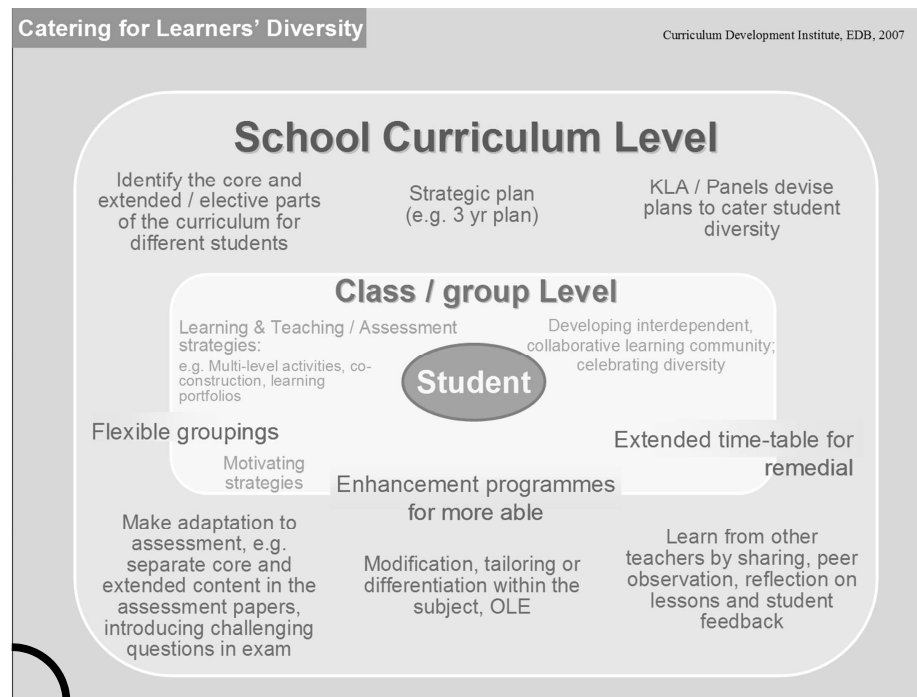
- Evaluate teaching
 - Effective used of curriculum time?
 - Appropriate assessment?
 - Target (standard) aligned?
 - Teacher and students know each other well?
- Self reflection
 - Review students' learning outcome
 - Try discovering student learning problems
 - Evaluate and adjust school-based curriculum
- Collaboration and Professional Exchange

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Curriculum, Pedagogy and Assessment



Adapted from Booklet 3, Senior Secondary Curriculum Guide (CDC, 2009)



Performance-based Assessment

LD

- Could be implemented in the form of
 - Peer-assessment (Sharing 1)
 - Teacher-assessment / Self-assessment (e.g. "Core Skill Assessment" in SBA of 2007 ASL Computer Applications)
- Topics more emphasized on performance skills
 - Easy to build a checklist for expected performance
- Clear objective which can facilitate students' self-learning

Multi-sensory Instruction

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Professional Development Programme on the "New Senior Secondary Learning & Teaching Strategies for Information and Communication Technology (ICT) - (1) Catering for Learner's Diversity" (Course ID: CDI020061594) Assignment Summary Report

2. Analysis and Findings of the Assignments

Question (1)

Q1 asked participants to make suggestion on a topic/sub-topic of the ICT curriculum that requires the use of multimedia learning principle to design effective instructional material for catering individual learning differences.

The top four suggested topics of the ICT curriculum were as follows which accounted for over 80% of all suggestions:

Topic	Vote (%)	Subtopic / learning element suggested by participants
Internet and its application	30	The networking and internet basics
Computer system fundamentals	27	Basic machine organisation Computer systems
Data communications and networking basics	14	TCP/IP
Social implications	12	Public and private keys encryption system

Jigsaw

LD

- Suitable for topics emphasized on “compare”, “distinguish”, “discuss”
 - L&T materials could be segmented to a number of similar parts for different groups to read / report

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Considerations in using L&T strategy

LD

- Grouping (Heterogeneous Grouping / Jigsaw)
 - Homogeneous? Heterogeneous? Random?
 - Need to consider students' self-esteem as well as fairness to different learners
 - Fixed grouping for entire year?
Different grouping each time?
 - Need to consider the learning style and prior knowledge that matches specific activity
 - How to cater for learners' different learning style?
 - Ideal: distribute students of different learning style fairly to different groups

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Considerations in using L&T strategy

LD

- Jigsaw
 - Are students familiar with the protocols for cooperative learning?
 - How to prevent group members from free-riding?
 - How to raise questions?
How to provide scaffolds?
 - How to provide constructive feedback?
 - How to promote deep learning?

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Considerations in using L&T strategy

LD

- Peer evaluation
 - Are students familiar with the use of assessment rubrics?
- Performance-based assessment
 - Feedback other than “complete” / “not complete”
 - How to assess the learning process?
 - How to help students diagnose learning problem to facilitate better learning?

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Good Practices in Schools – A Summary

LD

- Maintaining good teacher-student relationship
 - Understanding students
 - Finding out ways to cater for learning needs
- Understanding the nature of this subject
 - A balance of theoretical learning and authentic application
- Meaningful use of resources
 - Classroom management software: Monitor? Share?
- Helping students to acquire necessary prior knowledge and skills
 - e.g. subscribing RSS feed

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Good Practices in Schools – A Summary

LD

- Assessment for learning (AfL) involves close attention to smaller “chunks” of learning
 - Size of “chunk” of learning
 - A learning objective? A lesson? A unit? ...
 - Is it a must for AfL to be conducted within class time?
 - How to provide timely feedback using data collected?
 - Is it a must for all assessment be marked and graded?
- How to promote deep learning?

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Summary: Theory and Strategy

LD

- Theory
 - Understand students
 - Quality interaction
 - Positive feedback
 - Reflective teaching
- Strategy
 - Heterogeneous grouping, jigsaw
 - Performance-based Assessment
 - Multi-sensory Instruction
- Vision
 - Catering for Student Diversity:
Excellence for all

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Summary: Theory and Strategy

LD

	Curriculum	Pedagogy	Assessment
Different Ability			
Different Learning Style			
Different Interest / Aptitude			

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