

Seminar Series for Middle Managers: Catering for Learner Diversity under the New Academic Structure (Part 2: ICT)

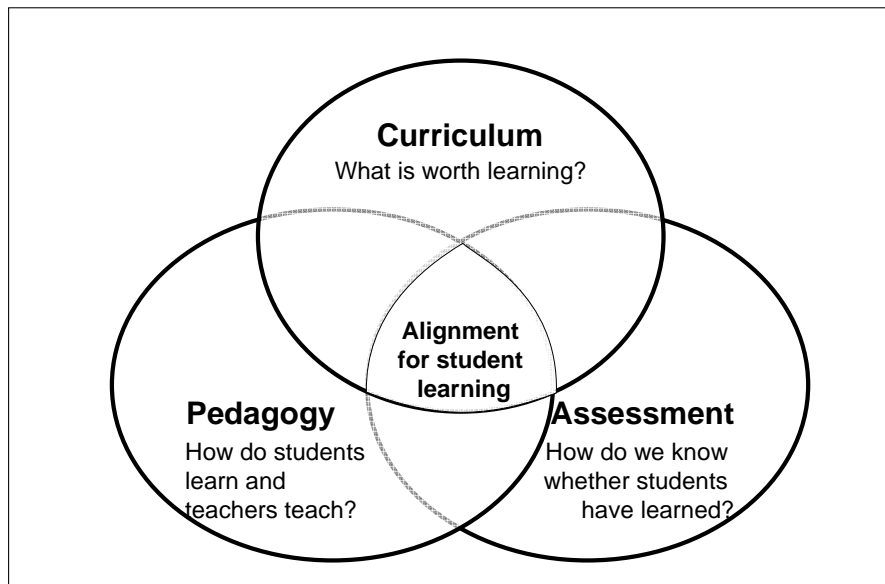
2:00pm	Registration & Welcoming
2:05pm	Review on the Implementation of NSS ICT Curriculum Catering for Learner Diversity – An Introduction
2:25pm	Experience Sharing (1) <i>Mr CHEN King-yeung (Computer Panel Head, PHC Wing Kwong College)</i>
2:45pm	Experience Sharing (2) <i>Ms AU YANG Man-fung (Computer Panel Head, Salvation Army William Booth Secondary School)</i>
3:05pm	Good Practices in Schools to Address Issues of Learner Diversity – A Reflection
3:20pm	Break and Professional Exchange
3:45pm	Experience Sharing (3) <i>Mr WONG Pak-yick (Computer Panel Head, CUHKFAA Chan Chun Ha Secondary School)</i>
4:25pm	Good Practices in Schools to Address Issues of Learner Diversity – A Summary
4:45pm	Q&A

Review on the Implementation of NSS ICT Curriculum

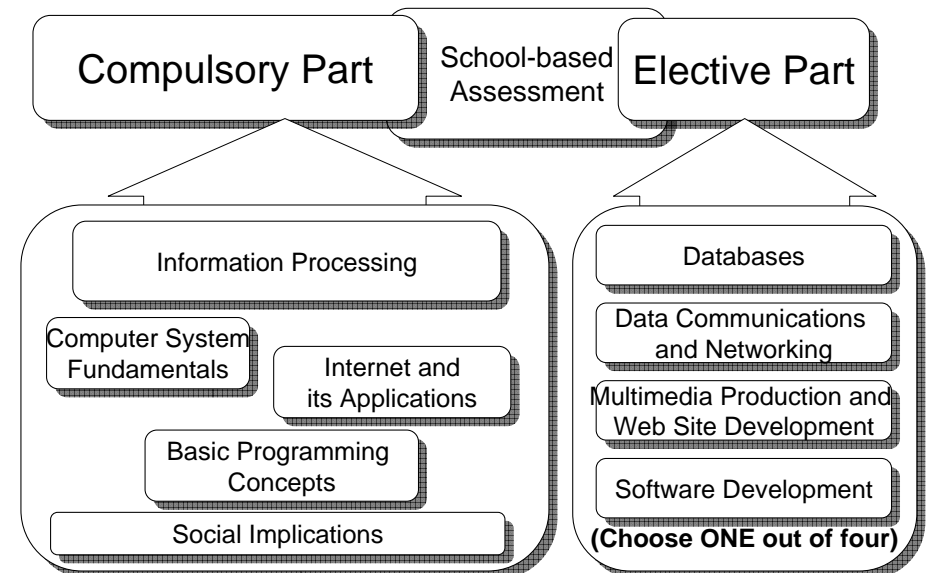
Mr LUI Kam-ming, Michael

Senior Curriculum Development Officer (Technology Education),
Curriculum Development Institute, Education Bureau

Curriculum, Pedagogy and Assessment



Curriculum Framework



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.

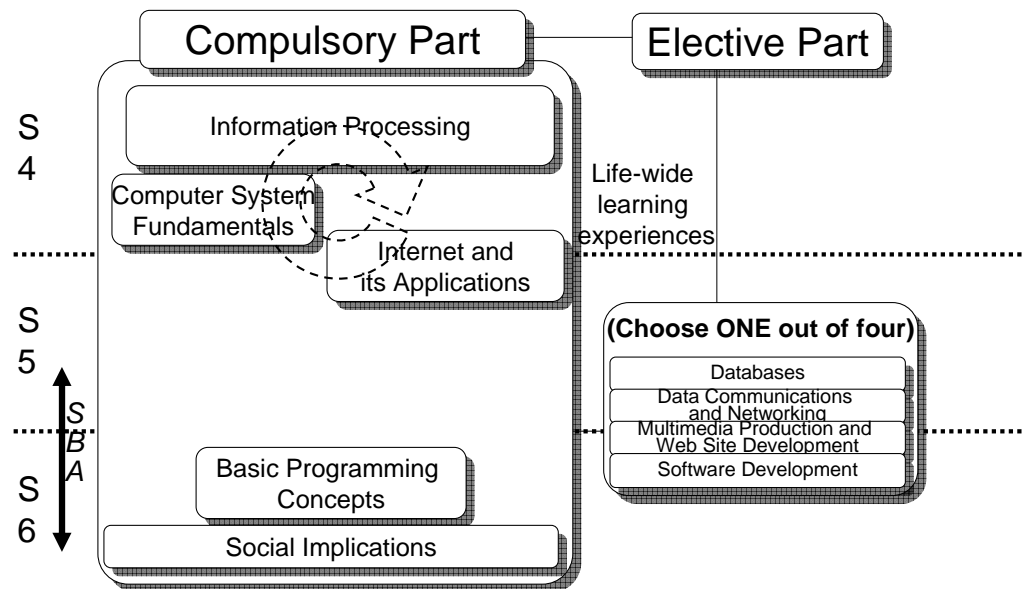
Example: Internet and its Applications

Examples of action verbs

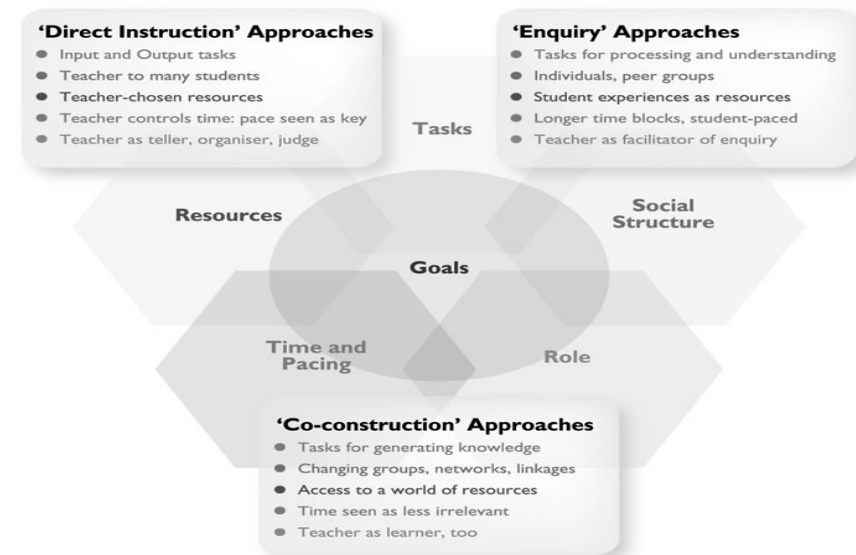
Students need to demonstrate

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.

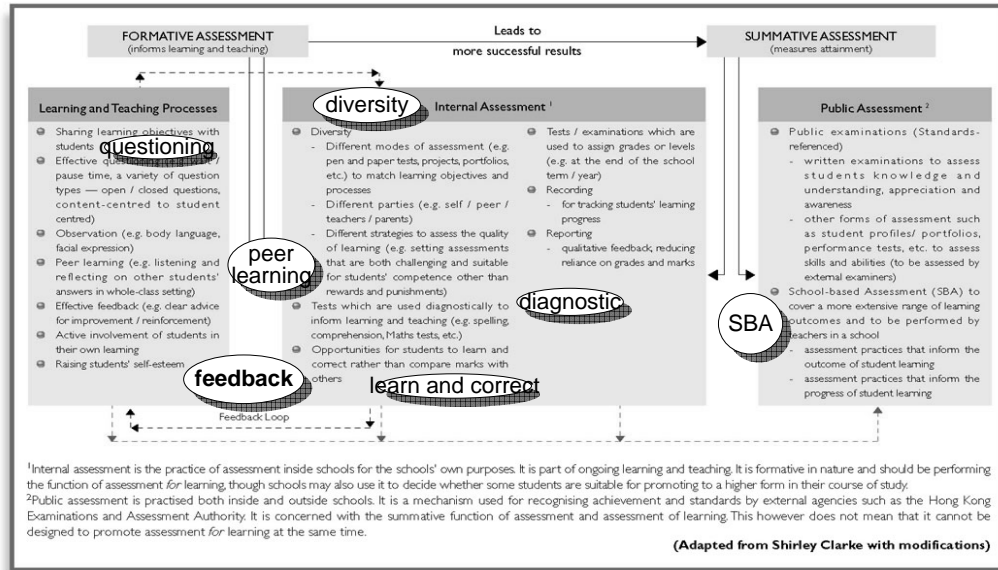
Learning Progression: Commonly Seen Teaching Sequence



Learning and Teaching Strategies



Assessment: A Framework of School Assessment Practices



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

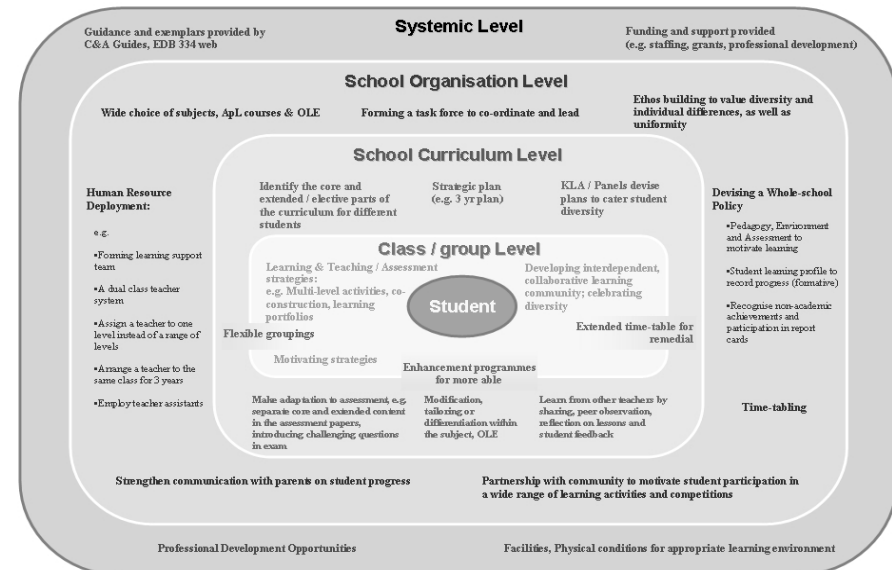
Example of a Diversified Assessment Plan

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)

Catering for Learner Diversity – An Introduction

Catering for Learner Diversity



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

Strategies referred in past PD Programmes

Curriculum Management

- Curriculum Management, Planning and Leadership
 - School Organisation Level
 - Human Resource Deployment
 - Devising a Whole-school Policy
 - Time-tabling
 - Other Learning Experiences
 - Student Learning Profile

13

Strategies referred in past PD Programmes

Curriculum Management

- Curriculum Management, Planning and Leadership
 - School Curriculum Level
 - Identify the core and extended / elective parts of the curriculum for different students
 - KLA / Panels devise plans to cater student diversity
 - Make adaptation to assessment, e.g. separate core and extended content in the assessment papers, introducing challenging questions in exam
 - Modification, tailoring or differentiation within the subject, OLE
 - Learn from other teachers by sharing, peer observation, reflection on lessons and student feedback

14

Strategies referred in past PD Programmes

Curriculum Management

- Curriculum Management, Planning and Leadership
 - Class Level
 - Extended time-table for remedial
 - Group Level
 - Learning & Teaching / Assessment strategies:
 - E.g. Multi-level activities, co-construction, learning portfolios
 - Developing interdependent, collaborative learning community; celebrating diversity
 - Motivating strategies
 - Classroom Level

15

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

16

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

17

Maze or Matrix !?

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

18

Experience Sharing (1)

Mr CHEN King-yeung
 Computer Panel Head,
 PHC Wing Kwong College

19

Catering for Different Ability

- Topic: The Use of Office Automation Software
 - Create formatted documents
- Student characteristics
 - Students have diverse prior knowledge and skills on this topic
- Strategy 1: Peer Tutoring
 - Understand student background
 - build relationship + understand their ability
 - Seating arrangement for practical class
 - heterogeneous grouping for cooperative learning
- Strategy 2: Peer evaluation
 - Familiarise students with the assessment rubrics
 - Peer sharing on different strategies and skills in accomplishing the same task

20

Experience Sharing (2)

Ms AU YANG Man-fung

Computer Panel Head,

Salvation Army William Booth Secondary School

21

Catering for Different Learning Styles

- Topic: The Networking and Internet Basics
 - Understand the need for communications software and communication protocols
 - Describe how data is transmitted over the Internet and understand concepts of Internet Protocol (IP)
- Student characteristics
 - Good in visual memory / learning;
 - Weak in understanding large amount of text
- Strategy 1: Jigsaw
 - Random grouping for cooperative learning
 - Each group responsible to read and understand only one layer in the layered model
 - Group presentation / role-play (peer learning)

22

Catering for Different Learning Styles

- Topic: The Networking and Internet Basics
 - Understand the need for communications software and communication protocols
 - Describe how data is transmitted over the Internet and understand concepts of Internet Protocol (IP)
- Student characteristics
 - Good in visual memory / learning;
 - Weak in understanding large amount of text
- Strategy 2: Using different L&T resources / multi-sensory instruction
 - Search related audio-visual materials from the Internet and then show them in class
- Strategy 3: Offering option in the elective part based on students' preference
 - Students were impressed with this topic, and interested to study in-depth

23

Good Practices in Schools to Address Issues of Learner Diversity – A Reflection

Mr LUI Sze-ming, Atkin

Curriculum Development Officer (Technology Education),

Curriculum Development Institute, Education Bureau

24

Good Practices in Schools – A Reflection

- Common issues:
 - Importance in maintaining good teacher-student relationship (rapport)
 - Sharing 1:
 - Understanding students' background to facilitate better planning for heterogeneous grouping
 - Sharing 2:
 - Trust students and get them involved in curriculum decision-making (offering which option in elective part), and then honour students' choice

25

Performance-based Assessment

- 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

26

Multi-sensory Instruction

- Sharing 2 is an illustration of a suggestion teachers made in the PD programme “Catering for Learner Diversity” organised for NSS ICT in 2006

27

**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

28

Jigsaw

- 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

29

Considerations in using L&T strategy

- 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

30

Considerations in using L&T strategy

- 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?

31

Considerations in using L&T strategy

- 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?

32

Experience Sharing (3)

Mr WONG Pak-yick

Computer Panel Head,
CUHKFAA Chan Chun Ha Secondary School

33

Catering for Different Interest

- Scenario
 - Students expect to use computer in computer room during lessons
- Student characteristics
 - Students have short attention span
- Teacher's concern
 - Students will off-task if they are allowed to use computers without restriction
 - Using classroom management software to lock students' computer may hamper teacher-student relationship
 - May lead to classroom management problem if not use
- Strategy 1: Split teaching
 - Theory topics in the two lessons in AM; Practical topics in the lesson in PM
 - Catering for different learning style, while maintaining good classroom management

34

Catering for Different Interest

- Student characteristic
 - Students use social networking tools as their platform for information exchange
- Teacher's concern
 - Students should master latest technology information
- Strategy 2: Authentic learning to make student learning more meaningful
 - Encourage students to subscribe RSS feeds, so as to learn latest information of the subject by "reading to learn"
 - Encourage students to write reflective journal in form of blog posts. This could be serve as evidence, and could be used for peer sharing and feedback
 - Teacher taught basic skills in using RSS and blog

35

Catering for Different Interest

- Strategy 3: Maintaining good teacher-student relationship to sustain students' interest to learn
 - Make use of the information platform (social networking tool) students use, rather than the school Intranet
 - Students use such platform everyday. This would raise students' motivation and interest to learn

36

Assessment

- Teachers' concern
 - Could students master what they learned?
- Strategy 4: Short test conducted in class time after completion of each chapter
 - Multiple choice questions
 - Make use of the statistical and feedback features provided with the school Intranet to provide immediate feedback to students. Teacher can also use the statistical data to diagnose students' learning, provide quality feedback and adjust learning and teaching strategy promptly

37

Learning Community

- Teacher concern
 - Difficulty in collaboration as the school has only one teacher teaching this subject
- Strategy 5: Building learning community to facilitate group learning
 - Facilitate panel heads of different schools to collaborate and exchange ideas
 - Organise various joint-school talks and OLE activities to promote authentic learning. This could also reduce the effect of social-economic status to student learning

38

Good Practices in Schools to Address Issues of Learner Diversity – A Summary

Mr LUI Sze-ming, Atkin

Curriculum Development Officer (Technology Education),
Curriculum Development Institute, Education Bureau

39

Good Practices in Schools – A Summary

- 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

40

Good Practices in Schools – A Summary

- 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?

Summary: Theory and Strategy

- Theory
 - Understand students
 - Quality interaction
 - Positive feedback
 - Reflective teaching
- Strategy
- Vision
 - Catering for Student Diversity:
Excellence for all