UNICEF-UNESCO Dialogue on
Developing Curriculum and Assessment Systems for 21st Century skills

Insights from 2000 to New Normal

• Catherine KK Chan, Professor of Practice, Faculty of Education, University of Hong Kong (since 2018)
• Chief Executive, Curriculum Development Institute, Education Bureau (1998-2008) – leading curriculum reform since 2000
• Deputy Secretary, Education Bureau (2008-2017) – curriculum, assessment, professional support, IT, quality assurance.
Key Questions

The complexities involved raise many issues among education officials:

**How to develop curriculum and assessment frameworks?**
1. How to best develop curriculum frameworks to promote 21\textsuperscript{st} Century skills?
2. How to develop assessment frameworks to promote 21\textsuperscript{st} Century Skills?
3. How to align assessment and curriculum frameworks in terms of 21\textsuperscript{st} Century Skills?
4. How can examinations, including classroom based and end-of-cycle assessments, be transformed to measure 21\textsuperscript{st} century skills? Have alternative summative assessments strategies other than examinations been or are being used?

**How to implement?**
1. What support is needed for teachers and schools to implement those changes?
2. How to implement the changes in teaching and learning systems to support 21\textsuperscript{st} century curricular reforms?
3. How to engage parents, careers and the broader community in relation to understanding and supporting the changes?

**What is the impact of COVID-19?**
1. Has the response to COVID-19 resulted in alternative assessment strategies being used that have or are proving to be valid and reliable?
How to develop?
Clear Definitions in Contexts

Competencies
- **Consider prior understanding and discourse.** Converging ideas.
- A competency is more than just knowledge and skills. It involves the ability to meet complex demands, by drawing on and mobilising psychosocial resources (including skills and attitudes) in a particular context. (OECD, 2005)

A ‘curriculum framework’
- an organization of learning elements (knowledge, skills, values and attitudes) for a theme, subject, interdisciplinary study, school curriculum.
- does not prescribe detailed contents, accommodate different knowledge context
### How to develop?
Careful Selection of Interlocking Learning Elements

<table>
<thead>
<tr>
<th>Knowledge (8 Key Learning Areas)</th>
<th>Generic Skills (9 skills)</th>
<th>Values &amp; Attitudes (7 priorities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chinese Language Education</td>
<td><strong>Basic Skills</strong></td>
<td>1. Perseverance</td>
</tr>
<tr>
<td>2. English Language Education</td>
<td>1. Communication skills,</td>
<td>2. Respect for others</td>
</tr>
<tr>
<td>5. Personal, Social &amp; Humanities Education</td>
<td><strong>Thinking Skills</strong></td>
<td>5. Commitment</td>
</tr>
<tr>
<td>7. Arts Education</td>
<td>5. Creativity</td>
<td>7. Care for others</td>
</tr>
<tr>
<td>8. Physical Education</td>
<td>6. Problem solving skills</td>
<td><strong>Moral, Civic, Environmental, National, Sex ........values</strong></td>
</tr>
</tbody>
</table>

- **Basic Skills**
  1. Communication skills,   
  2. Mathematical skills,   
  3. Information Technology skills

- **Thinking Skills**
  4. Critical thinking skills   
  5. Creativity  
  6. Problem solving skills

- **Personal & Social Skills**
  7. Self-management skills   
  8. Self-learning skills  
  9. Collaboration skills

- **Values & Attitudes (7 priorities)**
  1. Perseverance
  2. Respect for others
  3. Responsibility
  4. National identity
  5. Commitment
  6. Integrity
  7. Care for others
How to develop?
Consistent and Aligned Inclusion in Curriculum Documents

Learning to Learn Report


Various Subject Curriculum Guides

Aims of Education ➔
Aims of School Curriculum ➔
Learning Goals at each stage of schooling

Revised Curriculum and Assessment Guides (CDC, HKEAA)
Defining Problem solving skills & in humanities – competencies in contexts

Problem solving involves using thinking skills to resolve a difficulty. It assembles facts about the problem and determines the best course of action.

<table>
<thead>
<tr>
<th>Descriptors of Expected Achievements across the School Curriculum</th>
<th>Exemplars of Implementation in Personal, Social and Humanities Education</th>
</tr>
</thead>
</table>

**Key Stage One (Junior Primary)**
Learners will learn to:
- develop ideas about the problem and identify sources of information and help
- identify, under guidance, different ways of tackling the problem
- choose and implement a solution plan, using support and advice given
- follow the given

Self-management Skills

Self-management skills comprise essential life skills and desirable personal qualities such as maintaining emotional stability, making decisions and exercising self-discipline. Self-management skills enable students to embrace challenges encountered on a personal or team basis.

The expected achievements of the students in this generic skill are classified according to different levels of mastery.

<table>
<thead>
<tr>
<th>Elements of Self-management Skills</th>
<th>Beginning -----------</th>
<th>Developing -----------</th>
<th>Mastering -----------</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will learn to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Self-worth</strong></td>
<td>express positive</td>
<td>identify and apply</td>
<td>uphold, synthesise</td>
</tr>
<tr>
<td></td>
<td>statements about</td>
<td>personal skills,</td>
<td>and renew their</td>
</tr>
<tr>
<td></td>
<td>themselves</td>
<td>values and attitudes</td>
<td>own beliefs and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to overcome</td>
<td>values</td>
</tr>
<tr>
<td></td>
<td></td>
<td>challenges</td>
<td></td>
</tr>
<tr>
<td><strong>Goal setting and tracking</strong></td>
<td>set goals to assist</td>
<td>set and keep track</td>
<td>set, keep track of</td>
</tr>
<tr>
<td></td>
<td>their learning and</td>
<td>of realistic goals</td>
<td>and be reflective on</td>
</tr>
<tr>
<td></td>
<td>personal development</td>
<td></td>
<td>and accountable for</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>goals which work</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>towards excellence</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>in life</td>
</tr>
<tr>
<td><strong>Decision making</strong></td>
<td>make decisions in</td>
<td>list out and evaluate</td>
<td>consider all factors,</td>
</tr>
<tr>
<td></td>
<td>daily life situations</td>
<td>the pros and cons of</td>
<td>such as technical,</td>
</tr>
<tr>
<td></td>
<td>with supporting</td>
<td>a suggestion, and</td>
<td>ethical, resource</td>
</tr>
<tr>
<td></td>
<td>reasons</td>
<td>make prediction</td>
<td>and community</td>
</tr>
<tr>
<td></td>
<td></td>
<td>about the</td>
<td>considerations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>consequences of a</td>
<td>before making a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>decision</td>
<td>decision</td>
</tr>
</tbody>
</table>

Rectangular Ship
Creativity

Creativity brings in changes or transformations and is manifested in new ideas, acts or products. It emerges spontaneously or through deliberate processes of divergent and convergent thinking. It involves the integration of general or domain-specific knowledge for a meaningful purpose.

Although the expected achievements of the students in this generic skill cannot be suitably classified according to Key Stages, development of creativity involves the following abilities, dispositions and favourable factors for nurturing creativity.

1. Abilities

<table>
<thead>
<tr>
<th>Abilities</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>To discern details from observation and quickly respond to stimulus</td>
</tr>
<tr>
<td>Fluency</td>
<td>To generate numerous ideas promptly</td>
</tr>
<tr>
<td>Flexibility</td>
<td>To adapt varied ideas and to initiate new thoughts for action</td>
</tr>
<tr>
<td>Originality</td>
<td>To produce unusual, novel and unique ideas</td>
</tr>
<tr>
<td>Elaboration</td>
<td>To expand, refine and embellish ideas</td>
</tr>
</tbody>
</table>

2. Dispositions

<table>
<thead>
<tr>
<th>Dispositions</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curiosity</td>
<td>To show interest and desire to find out more</td>
</tr>
<tr>
<td>Risk-taking</td>
<td>To show courage and determination to deal with uncertainties or ambiguities</td>
</tr>
<tr>
<td>Imagination</td>
<td>To enjoy fantasising and generating new ideas</td>
</tr>
<tr>
<td>Complexity</td>
<td>To be attracted to intricacies and novelty; to embrace challenges</td>
</tr>
</tbody>
</table>

Other Core Values:

<table>
<thead>
<tr>
<th>Core Values: Personal</th>
<th>Sustaining Values: Personal</th>
<th>Core Values: Social</th>
<th>Sustaining Values: Social</th>
<th>Attitudes</th>
</tr>
</thead>
<tbody>
<tr>
<td>sanctity of life</td>
<td>self-esteem</td>
<td>equality</td>
<td>plurality</td>
<td>optimistic</td>
</tr>
<tr>
<td>truth</td>
<td>self-reflection</td>
<td>kindness</td>
<td>due process of law</td>
<td>participatory</td>
</tr>
<tr>
<td>aesthetics</td>
<td>self-discipline</td>
<td>benevolence</td>
<td>democracy</td>
<td>critical</td>
</tr>
<tr>
<td>honesty</td>
<td>self-cultivation</td>
<td>love</td>
<td>freedom</td>
<td>creative</td>
</tr>
<tr>
<td>human dignity</td>
<td>principled morality</td>
<td>freedom</td>
<td>liberal</td>
<td>appreciative</td>
</tr>
<tr>
<td>rationality</td>
<td>self-determination</td>
<td>common good</td>
<td>common will</td>
<td>empathetic</td>
</tr>
<tr>
<td>creativity</td>
<td>openmess</td>
<td>mutuality</td>
<td>patriotism</td>
<td>caring and</td>
</tr>
<tr>
<td>courage</td>
<td>independence</td>
<td>justice</td>
<td>tolerance</td>
<td>concerned</td>
</tr>
<tr>
<td>liberty</td>
<td>enterprise</td>
<td>trust</td>
<td>equal opportunities</td>
<td>positive</td>
</tr>
<tr>
<td>affectivity</td>
<td>integrity</td>
<td>trust</td>
<td>opportunities</td>
<td>confident</td>
</tr>
<tr>
<td>individuality</td>
<td>simplicity</td>
<td>trust</td>
<td>culture and civilisation</td>
<td>cooperative</td>
</tr>
<tr>
<td></td>
<td>modesty</td>
<td>trust</td>
<td>heritage</td>
<td>responsible</td>
</tr>
<tr>
<td></td>
<td>perseverance</td>
<td>trust</td>
<td>human rights and</td>
<td>adaptable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>responsibilities</td>
<td>to changes</td>
</tr>
</tbody>
</table>

- open-minded
- with a respect for
- self
- others
- life
- quality and excellence
- evidence
- fair play
- rule of law
- different ways of life, beliefs and opinions
- the environment
- with a desire to learn
- diligent
- committed to core and sustaining values
Learning to Learn 2+ - The Hong Kong School Curriculum

A broad and balanced curriculum with diversification and specialisations (choices) for academic, professional and vocational development according to students' needs.

Nurturing lifelong & self-directed learning capabilities

Multiple pathways

Fostering whole-person development

SEVEN LEARNING GOALS

FIVE ESSENTIAL LEARNING EXPERIENCES

Moral and Civic Education
Intellectual Development
Community Service
Physical and Aesthetic Development
Career-related Experiences

Core Subjects
Chinese Language
English Language
Mathematics
Liberal Studies

Electives
20 Elective Subjects
Applied Learning
Other Languages

Other Learning Experiences
Moral and Civic Education
Aesthetic Development
Physical Development
Community Service
Career-related Experiences

Four Key Tasks: Towards major renewal phases (MR) at the JS level and beyond

STEM education & ITE, Values education (incl. MCE & Polytechnic education), Language across the Curriculum (incl. reading), etc.

Values & Attitudes
Seven priority values
- Perseverance
- Respect for Others
- Responsibility
- National Identity
- Compassion
- Integrity
- Care for Others

Generic Skills
- Communication Skills
- Mathematical Skills
- IT Skills

Thinking Skills
- Critical Thinking Skills
- Creativity
- Problem Solving Skills

Personal & Social Skills
- Self-management Skills
- Self-learning Skills
- Collaboration Skills

A coherent curriculum framework

Central curriculum with school-based flexibilities

Diverse Learning and Teaching Strategies

Learning as a ‘Product’

Learning as a ‘Process’

Learning as ‘Co-construction’

Classroom example
To promote the campaign “Protecting the environment of the Community”, students, teachers and parents are encouraged to co-construct knowledge by discussing at the forum on the school webpage about factors and preventive measures of pollution, and also setting game booths in the community centre to arouse awareness of stakeholders.

Classroom example
Project learning on “Historical Buildings in Hong Kong” under teachers’ guidance.

Classroom example
Explaining the concept of “Energy” by identifying learning objectives for students, showing numerous examples, linking with previous knowledge, demonstrating and clarifying the concept.

Classroom example
Coaching in sports/physical activities: Providing opportunities for practice in collaboration, communication and thinking, and also concrete feedback to students.

Focus on... Views of Learning

Focus on... Views of Teaching

Generic Skills

Content Knowledge

Meaningful Learning

Learning Communities
Updated Four Key Tasks as Entry Points

- Reading across the Curriculum
- Values Education
- Project Learning
- IT for Self-directed Learning

Figure 3.2 Process of Enquiry Learning

- 1. Ask: Students formulate questions related to a given issue.
- 2. Investigate: Students collect, organise and analyse relevant information.
- 3. Discuss: Students share, discuss and refine their ideas.
- 4. Conclude: Students draw conclusions based on their findings.
- 5. Reflect: Students evaluate and reflect on the enquiry process. They may propose alternative ways to investigate the issue further.

Figure 6D.1 Features of e-Learning
### How to implement? Incremental & Co-ordinated Changes at All Levels

<table>
<thead>
<tr>
<th></th>
<th>02/03</th>
<th>03/04</th>
<th>04/05</th>
<th>05/06</th>
<th>06/07</th>
<th>07/08</th>
<th>08/09</th>
<th>09/10</th>
<th>10/11</th>
<th>11/12</th>
<th>12/13</th>
<th>13/14</th>
<th>14/15</th>
<th>15/16</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kindergarten</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Curriculum</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Revised Curriculum</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Primary &amp; Junior Secondary</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>1st Five Year Plan</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adoption of Curriculum Reform</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-going evaluation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2nd Five Year Plan</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School-based Curriculum with Adaptation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Senior Secondary</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Old School Certificate &amp; Advanced Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40% study in Advanced Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three consultation stages, preparation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>New Senior Secondary for ALL students</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-going evaluation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>University</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Old 3-year programme</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultation, Preparation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>New 4 –year programme</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How to implement? Twelve principles

- A clear and long-term 5 + 10 year plan
- Building on strengths and contexts
- Student-centred decisions
  - Policy alignment and coherence
- Early engagement/mobilization
  - Professional capacity building
- Organisational structuring
- Careful, feasible and well-coordinated
- Psychological preparation, patience, trust
- Effective communication
- On-going evaluation
- Professional accountability
From Disruptive Schooling to New Normal

**Before COVID-19**
- Basic domain Knowledge (condense?)
- Competencies
- Values and attitudes
- Curriculum framework
- Classroom-oriented, blended
- Homework & school assessment
- Public assessment
- Vocational
- Professional standards
- Quality Assurance of schools

**Impact**
- **On-line/home learning Students**
  - Self-motivation and self-directed
  - Allow more selections, autonomy
  - Peer interactions
  - Multiple technological tools
  - Unleashing potential
  - Learning to learn
  - Digital divide, competencies, well-being in lower SES students?
- **Teachers**
  - Paradigms change
  - Workload, well-being

**School suspension**

**Reconceptualising /Reimagining**
- Reduced School-based Assessment in Public Exam (2021)?
- Uncertain time-tableing to flexible time-tableging
- Re-defining core learning?
- Enhancing learning technology?
- Individual care
- Teachers change?

**Practical experiences**
- Learning by doing
- Maker mindset
- Experiential learning
- **Virtual informal, non-formal learning**
- Workplace norms
- Collaboration
- Problem-solving
- Real-life Learning
Challenges

1. Sustaining communication and good practices
2. Evaluation, research and timely feedback
3. Pressure of public examinations
4. Parent and societal views about learning and education
5. Changing technologies and economies
Questions are welcome!

Thank You
ขอบคุณ
Terima kasih