Innovative Curriculum Design
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Curriculum Foundation

key principles in designing a curriculum fit for the future.
Innovation is

... a fundamentally different way of doing things that results in considerably better outcomes.

Innovative curriculum design leads to different learning experiences that result in significantly and substantially better learning outcomes.
Curriculum Innovation Trends

Past 100 years  Fit for the future

Teacher-centred  ➔  Learner-centred
Knowledge-based  ➔  Competency-based
Passive learning  ➔  Active learning
Dependent  ➔  Independent
Learning for exams  ➔  Learning for life
Memorisation  ➔  Higher-order thinking
Shallow learning  ➔  Deep learning
Diverse subjects  ➔  Connected learning
‘Alien’ knowledge  ➔  Relevant learning
What do we mean by the *curriculum*?

UNESCO’s International Bureau of Education considers three interrelated dimensions of the curriculum:

- **the intended** or official *curriculum* as defined in guidelines, frameworks and guides that specify what students are expected to learn and should be able to do;

- **the implemented curriculum** that is actually taught in the classroom, including how it is delivered and who teaches it;

- **and the attained curriculum** that represents what students have actually learned.

They go on to point out that the challenge is ensuring *coherence and congruence* between curriculum policy documents, the actual pedagogical process and learning outcomes.
Where do we innovate?

Innovation

Intended Learning

Learning experiences designed to achieve the intended learning

Successful young people

CURRICULUM
Three key questions

• What are we trying to achieve through the curriculum? (intent)

• How do we need to organise the curriculum to achieve the agreed intent or aims? (implementation)

• How do we measure the impact of the curriculum and continuously improve it?
To what extent has the government made the objectives of the curriculum clear?

How effectively are the objectives of the curriculum translated into policy levers?

What is the potential impact of the policy objectives on learners nationally?

To what extent do the objectives of the school align with national policy objectives?

How effectively are the objectives of the school translated into policies and processes?

What is the potential impact of the school’s objectives on its learners?

What do teachers think their objectives are in teaching each subject?

To what extent do teacher objectives align with the school’s objectives?

How likely is it that the teaching methods used will deliver the subject objectives?

What is the potential impact of this course of study on the learners?
Dimension 1
The Intended Curriculum

What are we trying to achieve?
The context for curriculum innovation

• **National** expectations and trends
• **Education research**: “The Mystery of Learning” and L2L; The global focus on a competency-based, learner-centred curriculum and values education
• **Demographic, economic and social** change
• The impact of **technology**
• **Employer** and **Higher Education** needs
• The **local community**
• **Parental** expectations
• **School** trends and **inclusion**
• **Young peoples’ own perspectives**
<table>
<thead>
<tr>
<th>Who</th>
<th>Looking to the future .....</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nelson Mandela</td>
<td>The school curriculum must prepare young people for an <strong>uncertain future</strong></td>
</tr>
<tr>
<td>Carla Rinaldi – Emilio Reggio</td>
<td>The curriculum is <strong>more than a set of subject syllabuses</strong>&lt;br&gt;It is <strong>all the intended learning</strong> that young people receive as they go through school</td>
</tr>
<tr>
<td>Mick Waters</td>
<td>When a nation sets out its national curriculum, it is setting out its <strong>ambitions for the future</strong></td>
</tr>
<tr>
<td>Ken Robinson</td>
<td>Employers ...... want people who can <strong>think intuitively</strong>, <strong>who are imaginative and innovative</strong>, <strong>who can communicate well</strong>, <strong>work in teams</strong>, and are flexible, adaptable and self-confident</td>
</tr>
<tr>
<td>Andreas Schleicher</td>
<td>(Japanese) teachers are asked to <strong>equip students with the competencies they need to become active citizens and workers in the 21st century</strong>..... <strong>to personalise learning</strong> so that <strong>every student</strong> has a chance to succeed</td>
</tr>
<tr>
<td>Michelle Obama</td>
<td>If my future were determined just by my performance on a <strong>standardised test</strong>, I wouldn't be here. I guarantee you that.</td>
</tr>
</tbody>
</table>
PISA 2018 Global Competence

Knowledge
Examine local, global and international perspectives
Understand and appreciate the perspectives

Skills
Take action for collective well-being and sustainable development
Engage in open, appropriate and effective interactions across cultures

Attitudes

SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD
What do young people need to succeed in the 21st century?

There is no right answer but your description would probably include some of the following:

- Creative
- Makes connections
- Questioning
- Confident
- Risk aware
- Communicates well
- Thirst for knowledge
- Healthy
- Independent
- Listens and reflects
- Thirst for knowledge
- Curious
- Generates ideas
- Flexible
- Digitally literate
- Analyses and evaluates
- Gets on well with others
- Numerate
- Literate
- Self-editing
- Critical
- Loves learning
- Communicates well
- Flexible
- Shows initiative
- Shaper
- Acts with integrity
- Skilled
- Learns from mistakes
- ‘Can do’ attitude
- Self-esteem
- Compassionate
- Respects
- Respectful
- Thinks for themselves
- Thinks for themselves
- Thinks for themselves

How would you describe a young person who is equipped for life?
What do young people need to succeed in the 21st century?

Knowledge

Values and attitudes

Skills

Competences

How would you describe a young person who is equipped for life?
A World Class Curriculum
The four domains

Key competencies for learning and life

The world's major areas of learning

Community, local and global contexts

Values, aims and principles

There is more about this on our website, including a curriculum audit
http://www.curriculumfoundation.org
Curriculum Foundation
A World-Class Curriculum should...

Values, aims and principles
• Be based upon clear, shared values, aims and principles which put learners at the heart of the curriculum and recognise their role as citizens of the world
• Provide exciting opportunities for the intellectual, physical, emotional, social, scientific, aesthetic and creative development of every learner

Key competencies for learning and life
• Ensure the development of competencies for learning and life and a sense of hope and agency in every learner
• Encourage independence of mind and action and the development of individual interests and talents
• Excite the imagination, encourage curiosity and develop creativity

The world’s major branches of learning
• Secure learners’ knowledge, skills and understanding of the world’s major branches of learning and subjects
• Ensure understanding of how learning in different disciplines is interconnected and relevant to life, global issues and world events past, present and future
• Provide clear and relevant pathways for learning and the flexibility to respond to developing needs, interests and contexts

Community, local, national and global contexts
• Locate learning in the context of the learner’s life and local community, and also within a national and international dimension
• Address contemporary issues as well as the big ideas that have shaped the world
We want our young people to be
Responsible citizens
Lifelong learners
Creative
Confident
Productive
Environmentally aware

Subject knowledge
Values and attitudes
Culture and heritage
Competencies and skills

We can only achieve all of these aims...
...if we offer a curriculum that includes all this learning
## International Trends

<table>
<thead>
<tr>
<th>Where</th>
<th>Vision, values, aims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>The curriculum must respond to the changing knowledge and skills needs in society and in the world economy.....It must develop the capacity for high quality life-long learning</td>
</tr>
<tr>
<td>Vision 2030, Alberta</td>
<td>An engaging curriculum that inspires every student, every day</td>
</tr>
<tr>
<td>Singapore</td>
<td>A confident person, a self-directed learner, an active contributor, a concerned citizen</td>
</tr>
<tr>
<td>China</td>
<td>.....helping students find out who they are, where they want to go in life, and how they will get there, in a rapidly changing and increasingly uncertain world</td>
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*Curriculum focus - China*
Dimension 2
The Implemented Curriculum

How do we need to organise the curriculum to achieve the agreed intent or aims?
Curriculum Design Principles

• Teachers need to see the curriculum as more than just subjects
• Every teacher has responsibility for learners’ knowledge and understanding, skills, attitudes and values, competencies, culture and heritage – MINDSET!
• Learners need regular exposure to/practice in all elements of the curriculum across the whole curriculum
• Integration: None of the elements is an add-on
• Skills and competencies need to be developed in the context of knowledge
• To apply skills and knowledge, learners need practical experiences that have meaning for them.
• Assessment should embrace all elements of the curriculum
Implementation Challenges

• Guidance
• Resources
• Training / CPD
• Assessment

What guidance?
Are different resources required?
How skilled are teachers in delivering a new pedagogy?
Alignment of assessment to the new curriculum?

MINDSET!
Competences

Values & Attitudes

Cross-cutting Issues

Culture & Heritage
# Schemes of learning

## Primary 4 Mathematics

### Unit 2: Positive and negative integers

**Key unit Competency:** To be able to solve problems related to comparing, ordering, and finding distance between negative and positive integers.

<table>
<thead>
<tr>
<th>Knowledge and understanding</th>
<th>Skills</th>
<th>Attitudes and values</th>
<th>Contents</th>
<th>Learning Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explain how to locate positive and negative numbers on the number line. Explain that when two numbers are placed on the number line, the number to the right is greater than the number to the left.</td>
<td>Locate positive and negative numbers on the number line. Apply knowledge of position on a number line to determine which of two numbers is greater. Computing distance between integers.</td>
<td>Appreciate the importance of using negative numbers in practical contexts.</td>
<td>The meaning of negative, positive numbers in contexts like temperature Location of positive and negative numbers on a number line Comparison/ ordering of negative, positive numbers using number line Solve problems involving integers, including computing distance between integers: If two numbers are on the same side of zero, the distance between them is the difference of their magnitudes. If two numbers are on opposite sides of zero, the distance between them is the sum of their magnitudes.</td>
<td>In groups, learners can use numbers on cards and place them on a number line backward and forward (on the board or using other material made in hard paper) Game: In a large play area (schoolyard or field), mark a number line from -24 to 24 (for a 48-child class, or -30 to 30 for a 60-child class, to allow all children to play). Each player is “named” and labeled for a number (not including 0) and stands on his or her number on the line. The teacher calls out a command like “Negative 8, run to 2” or “Twelve, run to four.” The child runs, and then says how far, and which direction, positive or negative. Mental activities: learner picture the number line and tell the distance between numbers on either side (e.g., distance between -3 and 10, or -30 and -10, or -25 and 20). Puzzles: A number gives clues about where it is (e.g., “I am exactly 10 steps away from 7. I am odd. I am more than 5 steps away from 12. Where am I?”) and learner must find the number on the number line. 10 steps away from 7 could be in either direction, so it could be 17 or -3, but only -3 is more than 5 steps away from 12. So the number is -3.</td>
</tr>
</tbody>
</table>

**Contribution to generic competencies:** The running game requires focused attention and **communication.** All games and activities are **cooperatively** social and involve problem solving.

**Links to other subjects:** Introduction of negative numbers in the context of temperatures in different locations links with science and geography.

**Assessment criteria:** Accurately compare pairs of numbers like -3 and -7 & say which is greater & why. (-3 is greater because it’s to the right of -7)
## Co-ordinated products

<table>
<thead>
<tr>
<th>Language and communication</th>
<th>Numeracy</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three pieces of extended writing</td>
<td>Four measuring tasks – two precise, one near enough</td>
<td>Two working models (made with others)</td>
</tr>
<tr>
<td>Four letters – two real</td>
<td>Two estimations – one big numbers, one small</td>
<td>Two still lifes (one in the style of ..)</td>
</tr>
<tr>
<td>Three power-point presentations (two individual, one group)</td>
<td>Two weigh-ins</td>
<td>Two portraits</td>
</tr>
<tr>
<td>Two reports - one about a current phenomenon</td>
<td>Two shape activities</td>
<td>One thing bigger than me</td>
</tr>
<tr>
<td>Two humorous pieces of writing for a magazine or journal</td>
<td>Two speed measurements</td>
<td>Two dances</td>
</tr>
<tr>
<td>Three campaign posters</td>
<td></td>
<td>One composition</td>
</tr>
<tr>
<td>Three maps (two real)</td>
<td></td>
<td>One meal cooked with a group of five</td>
</tr>
<tr>
<td>Four charts for different purposes</td>
<td></td>
<td>Five experiments</td>
</tr>
<tr>
<td>Three annotated photo sheets</td>
<td></td>
<td>Three experiences of real artefacts or places</td>
</tr>
<tr>
<td>One quiz</td>
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Dimension 3
The attained curriculum

How do we measure the impact of the curriculum and continuously improve it?
End point – a virtuous circle

Curriculum Intent and Design

Evaluation

Implementation
Monitoring and evaluating innovation - Different Lenses

- Observations of learners
- Perceptions
- Assessment results
- Learners’ work

- Observations of learners
- Perceptions
- Assessment results
- Learners’ work

- Observations of learners
- Perceptions
- Assessment results
- Learners’ work
<table>
<thead>
<tr>
<th>What do we want to achieve? (intent)</th>
<th>How will we organise learning and teaching? (implementation)</th>
<th>How well are we achieving our intent? (Impact)</th>
</tr>
</thead>
<tbody>
<tr>
<td>If...</td>
<td>then we need to...</td>
<td>And how we will know when we have been successful...</td>
</tr>
</tbody>
</table>
| we want young people to be good communicators | • give them opportunities to present information in different contexts for different purposes  
  • involve them in group discussion and debate  
  • promote concepts such as learners as presenters, learners as campaigners | • Learners speak confidently and articulately in a range of situations  
  • They present an argument effectively, express and justify opinions orally and in writing |
| we want young people to have enquiring minds and to think for themselves | • give them reasons to find things out  
  • know what interests them and build on that  
  • connect learning to issues that impact | • Learners have a thirst for learning  
  • They select appropriate information independently from a range of sources  
  • They analyse, explain and evaluate orally and in writing |

Co-ordinated products

- analysis and critical thinking
- promote concepts such as learners as researchers, learners as reporters

We want young people to be team players
Tracking Progress - Assessment isn’t just about tests

- Communication
- Critical thinking and Problem Solving
- Co-operation
- Managing self
- Creativity
In a nutshell
Schools undertaking significant curriculum innovation should:

• Use **research and analysis** to persuade the whole community of the need for innovation and its **intended** benefits

• **Engage all key stakeholders** in the process of curriculum design and development

• Ensure there is **strong leadership** at all levels to support **implementation** and keep **staff motivation** high

• Provide **high-quality professional development** and support matched closely to the requirements of the **new pedagogy** and the needs of staff

• Undertake rigorous and regular **evaluation**, based on **clear criteria**, focusing on the **impact** on learner outcomes and use the information to improve the new approaches
Thank you for listening