What can ECEC settings teach us about skills for the 21st century?

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Australian Council for Educational Research
• https://www.acer.org/au/research-conference
What are 21C skills anyway?

• What do we agree on?
  – Includes both hard and soft skills
    • Problem solving
    • Interpersonal skills
  – Lifelong learning
    • From childhood through to adult
    • A role for ECEC!
  – Lots of models and frameworks…
OECD Learning Framework 2030: Work-in-progress

THE TWELVE CORE LIFE SKILLS

- Participation
- Creativity
- Empathy
- Critical Thinking
- Respect for Diversity
- Active Citizenship
- Learning
- Problem Solving
- Cooperation
- Employability
- Negotiation
- Decision-Making
- Self-Management
- Communication
- Resilience

http://www.lsce-mena.org
The proposed approach is to provide as much flexibility as possible to ensure that many countries can report on Indicator 4.2.1 while maintaining a high level of quality and comparability. ACER-GEM recognises that there are many important issues to consider in any approach to the measurement of early learning, taking into account the needs of countries and the international assessment and reporting community, as well as children, families and early childhood development practitioners. Some of these issues are outlined below.

Would it be better to have a single measure, used across all countries? Using a common measure across all countries would provide the greatest consistency in 4.2.1 reporting—however, this is unlikely to occur in the near future. The UIS RS and Data Alignment process will help to improve interim reporting, for as long as multiple measures are used. This does not preclude the adoption of a common measure (the ECDI) by countries over time. It is hoped that reporting using the UIS RS will help to generate appetite.

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### Reading

<table>
<thead>
<tr>
<th>Level</th>
<th>Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Letter recognition</td>
</tr>
<tr>
<td>13</td>
<td>Identify print</td>
</tr>
<tr>
<td>12</td>
<td>Aural comprehension</td>
</tr>
<tr>
<td>11</td>
<td>Fluid reasoning</td>
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<tr>
<td>10</td>
<td>Comprehension knowledge</td>
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<tr>
<td>9</td>
<td></td>
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<td>8</td>
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<tr>
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<td>1</td>
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</tbody>
</table>

### Mathematics

<table>
<thead>
<tr>
<th>Level</th>
<th>Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Pre-math skills</td>
</tr>
<tr>
<td>10</td>
<td>Counting</td>
</tr>
<tr>
<td>9</td>
<td>Recognise numbers</td>
</tr>
<tr>
<td>8</td>
<td>Matching</td>
</tr>
<tr>
<td>7</td>
<td>Comparing</td>
</tr>
<tr>
<td>6</td>
<td></td>
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<tr>
<td>5</td>
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<td>3</td>
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<tr>
<td>2</td>
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<tr>
<td>1</td>
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</tr>
</tbody>
</table>

### General abilities

General abilities become increasingly integrated into descriptions of domain-specific proficiency.

#### General abilities

- **Examples**
  - Fluid reasoning
  - Executive function
  - Comprehension knowledge

#### Pre-math skills

- **Examples**
  - Counting
  - Recognise numbers
  - Matching
  - Comparing

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*Early development*

Extending general skills to younger age groups (if desired)
Why do we care about social and emotional skills?

• Important in their own right
  – A core part of 21C skills
  – Ability to function in a social world
  – Modifiable learning domain

• SE skills cause gains in other domains
  – New Australian evidence shows ES 0.3 SD for SE skills (age 5) on NAPLAN scores (age 8)
  – https://doi.org/10.3102/0013189X19848724
So, what are social and emotional skills?

• Social Interaction
  – The capacity to relate to and establish relationships with others
• Social Responsibility
  – The capacity to function within the school environment and interact with groups of others in socially prescribed ways
• Transcending Social Difficulties
  – Social self-regulation and social problem-solving capacities
• Other frameworks exist, eg, Collaborative for Academic, Social, and Emotional Learning (CASEL):
  https://doi.org/10.1375/ajse.33.2.141
ECEC and SE skills

- **Play is essential to stimulate and integrate a wide range of children’s intellectual, physical, social and creative abilities.** (VEYLDF)

- **OUTCOME 1: IDENTITY**
  - …feeling included and secure in the social settings that are part of everyday life.

- **OUTCOME 2: CONNECTED WITH AND CONTRIBUTE TO THEIR WORLD**
  - being in groups and contributing to family and social life

- **OUTCOME 3: STRONG SENSE OF WELLBEING**
  - develop a range of social skills and dispositions.

- **OUTCOME 4: CONFIDENT AND INVOLVED LEARNERS**
  - contribute positively and effectively to other children’s learning.

- **OUTCOME 5: CHILDREN ARE EFFECTIVE COMMUNICATORS**
  - innately social, creative and motivated to exchange ideas, thoughts, questions and feelings.
Child traits, disposition, and prior development

Family capital and resource

ECD policy and Structure

ECD quality Interactions

Local community context

HLE

Child traits and disposition

Child outcomes

System and country context

Source: Cloney, D. (2016)
Classroom Assessment Scoring System

- CLASS is a measure of process quality
  - Teaching through interactions
  - Applicable in multiple contexts
  - Not reliant on particular curriculum or content

<table>
<thead>
<tr>
<th>Emotional Support</th>
<th>Classroom Organization</th>
<th>Instructional Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Regard for Child Perspectives</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Classroom Assessment Scoring System (3 domains)

Emotional Support Domain
Classroom Organization Domain
Instructional Support Domain

Average CLASS Score - 3 Domains

Describing children’s SE learning

• How can educators measure SE skills and ability?
• See http://bit.ly/outcome4
• Example measures
  – SDQ, SSIS, MELQO, Early ABLES
  – see also EEF database http://bit.ly/ref_ec_measures
Considerate of other people's feelings
- Not True
- Somewhat True
- Certainly True

Restless, overactive, cannot stay still for long
- Not True
- Somewhat True
- Certainly True

Often complains of headaches, stomach-aches or sickness
- Not True
- Somewhat True
- Certainly True

Shares readily with other children, for example toys, treats, pencils
- Not True
- Somewhat True
- Certainly True

Often loses temper
- Not True
- Somewhat True
- Certainly True

Rather solitary, prefers to play alone
- Not True
- Somewhat True
- Certainly True

Generally well behaved, usually does what adults request
- Not True
- Somewhat True
- Certainly True

Many worries or often seems worried
- Not True
- Somewhat True
- Certainly True
<table>
<thead>
<tr>
<th>Social Skills Subscales</th>
<th>Frequency/Belief</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Responds well when others start a conversation or activity.</td>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
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<td>2</td>
</tr>
<tr>
<td>Speaks in appropriate tone of voice.</td>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Takes turns in conversations.</td>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
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</tr>
<tr>
<td>Makes eye contact when talking.</td>
<td></td>
<td>3</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Says &quot;please.&quot;</td>
<td></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Says &quot;thank you.&quot;</td>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses gestures or body appropriately with others.</td>
<td></td>
<td>2</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cooperation</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Pays attention to your instructions.</td>
<td></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follows your directions.</td>
<td></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participates appropriately in class.</td>
<td></td>
<td>1</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follows classroom rules.</td>
<td></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completes tasks without bothering others.</td>
<td></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ignores classmates when they are distracting.</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Never (0), Seldom (1), Often (2), and Almost Always (3)

https://www.pearsonassessments.com/
## #22 Understanding Feelings

**Materials:** None  
**STOP RULES:** None

<table>
<thead>
<tr>
<th>Instructions</th>
<th>Correct Answer</th>
<th>Appropriate Response (1)</th>
<th>Inappropriate response (0)</th>
<th>Child says I don't know/no response (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>22a</strong></td>
<td>Say: <strong>Now I’m going to ask you another question. Please tell me what makes you feel unhappy?</strong></td>
<td>Names at least one reason for feeling sad (e.g., loses toy; gets hurt; fight with other child)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Early ABLES

- Example items from earlier study

<table>
<thead>
<tr>
<th>3. Using conversational skills</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>The pupil does not typically display skills/behaviours at a beginning level</td>
<td>0</td>
</tr>
<tr>
<td>Focuses attention on a communicative partner, but does not converse</td>
<td>1</td>
</tr>
<tr>
<td>Contributes to the conversation only when prompted (e.g., answers the questions of others)</td>
<td>2</td>
</tr>
<tr>
<td>Uses information supplied by others to maintain the flow of conversation (e.g., asks questions relevant to the current conversational topic)</td>
<td>3</td>
</tr>
<tr>
<td>Draws on shared knowledge or knowledge about his/her partner to initiate and/or maintain a conversation</td>
<td>4</td>
</tr>
<tr>
<td>Adjusts communication style and/or content to suit context and social expectations</td>
<td>5</td>
</tr>
</tbody>
</table>

http://www.arc-ots.com/earlyABLES/
Growth?
Growth?

![Graph showing growth in WJ-III Test scores over age in months. The graph includes various tests such as Applied Problems, Brief Intellectual Ability, Concept Formation, etc., plotted against age in months.](chart.png)
What is the value added?

• A hard question to answer – do we have measures that can capture lifelong learning and growth in SE skills?
  – Either children top-out by the time they are 5, …or
  – We need better measures.

• Equity is a big issue
  – Quality is related to SES
Are we measuring the right things?

- SE skills appear through the ECEC and School curriculums
- We have some measures but they don’t capture the higher-order abilities
  - A focus on managing stress, controlling impulses, internalising behaviours like withdrawing.
  - But what about empathy, working in diverse communities, negotiation, resolving conflict, goal setting and decision making?
  - Can these things be measured through checklist about frequency of behaviours?
So what?

- Nearly all children attend ECEC
  - 3 year-old K roll out
- Public investment in ECEC is high
  - For 0-2-year-olds, private investment is also high
  - Costs of ECEC are increasing (HILDA: childcare costs up 145% in since 2002,)
- Need an effective and fair system
  - Give all children the best start in life
  - Quantify the value-add of the ECEC sector
  - Showcase the expertise of educators
  - Facilitate clinical practice
Key links

• Mapping VEYLDF to F-10 curriculum

• Framework for 21C skills
  – http://www.lsce-mena.org

• Relationship between social skills and academic achievement
  – https://doi.org/10.3102%2F0013189X19848724

• Assessing children as confident and involved learners

• ACER LPs

• MELQO
  – http://ecdmeasure.org

• EEF database