Seeing the bigger picture: A holistic framework of teacher insights into educational success

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Dr Justin Coy, Head of Assessment Strategy North America
Today’s session

- A teacher-friendly, evidence-based framework of five interacting areas of teacher insight into students’ education journeys.
- How to identify gaps and overlaps within schools’ assessment approaches.
- Focus on students’ needs and the important role holistic education plays in educational success.
- Supporting resources and easily accessible tools to create a positive learning environment in school.
Holistic education and a new framework for understanding insights from different assessments
What does educational success look like?

- Qualifications and certificates
- Progression to next level of education or employment
- High wellbeing (feeling well and functioning well)
- Life competencies/21st century skills
- A good citizen

A holistic view of educational success
Educational success can mean different things in different schools

- Each school is unique, serving a different community, embedded within different local and national cultures and legal frameworks.
Two key questions for schools

1. What do different types of assessment and evaluation do and how do they fit together

   Is there any unhelpful overlap? Where are the gaps?

2. How can we combine and use assessment data and other teacher insights effectively to maximize teaching and learning?
Our framework of five areas of teacher insight

- Cognitive skills and capabilities
- Cross-curricular knowledge, skills & understanding
- Domain knowledge (curriculum coverage)
- Teaching and learning environment
- Personal attributes
Our framework of five areas of teacher insight

Almost all assessments, evaluations, and teaching resources can be understood in terms of these five areas.

There are many interactions among the areas of insight.

This is an organizing framework to help teachers to make informed decisions around assessment.

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Our framework of five areas of teacher insight

- Cognitive skills and capabilities
- Personal attributes
- Cross-curricular knowledge, skills & understanding
- Teaching and learning environment
- Domain knowledge (curriculum coverage)

How able are our learners? What is their potential?
How easy will it be for learners to access the curricula?
Are learners absorbing the curriculum and progressing well?
Are learners good at the processes of learning? Are they ready to learn?
Are learners in the best possible place to learn? Are unnecessary demands imposed upon them?
Where do assessments from around Cambridge fit within the framework?

Cambridge International & Cambridge English qualifications

Cambridge Learner Attributes

Cambridge Wellbeing Check

Cambridge Personal Styles Questionnaire

Cambridge International School Self-Evaluation Service

Cambridge CEM baseline tests

Cognitive skills and capabilities

Cross-curricular knowledge, skills & understanding

Educational success

Personal attributes

Teaching and learning environment

Domain knowledge (curriculum coverage)

Cambridge English tests

Cambridge IGCSE

Cambridge Checkpoint

Cambridge International Progression tests

cambridgeassessmentinternationaleducation
Looking beyond assessments from CambridgeTest

Wellbeing, life competencies & citizenship

School leaving certificate

Progression to next level of education, apprenticeships or employment

Cognitive skills and capabilities

School's own entrance test

English Language Proficiency Test

Participation and achievements in extra-curricular activities

Tutor observations

Teaching and learning environment

Educational success

Personal attributes

Cross-curricular knowledge, skills & understanding

PISA assessments

National assessments

School's own end-of-year assessments

ELA assessments

Attendance records

School inspections

Class topic tests

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Cognitive skills and capabilities

- How able are our learners? What is their potential?
- Often assessed near the start of the school year
- Include non-verbal reasoning and some types of verbal reasoning
- "Curriculum free" – not usually taught in school lessons
- Tend to be stable over time and very difficult to teach
- Predict later performance in Maths, Sciences, Design & Technology, Geography, Art and Drama
- Useful in understanding the ability of students with English as an Additional Language (EAL)

Cambridge CEM baseline tests
Cambridge Centre for Evaluation and Monitoring

Age 4-5  
BASE

Age 5-11  
CPI

Age 11-14  
MidYIS

Age 14-16  
Yellis

Age 16-18  
Alis  
CEM IBE

www.cem.org

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Cambridge Centre for Evaluation and Monitoring: baseline & diagnostic tests

- Planning & focusing teaching
- Predictions & target-setting
- Identifying under-performing & over-performing students
- Evaluating teaching strategies

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Example of a question

Cognitive skills & capabilities

Select the shape from the right that has been cut to create this cross section.

Select ‘NO MATCH’ if the cross section does not have a matching shape.

Question 2 of 16  4:48
Cross-curricular knowledge, skills and understanding

- How easy will it be for learners to access the curricula?
- Often assessed near the start of the school year
- Include core mathematical concepts, vocabulary and language comprehension
- May be taught within multiple subject curricula
- May also be taught/acquired outside lessons
- Strong predictors of performance in a wide range of school subjects

Cambridge CEM baseline tests

Cambridge English tests
Example of a Linguaskill Question

You **must** to check the tyres before you start on a long car journey.

**Table: Cross-curricular knowledge, skills & understanding**

<table>
<thead>
<tr>
<th>must</th>
<th>should</th>
<th>ought</th>
<th>better</th>
</tr>
</thead>
</table>

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Domain knowledge (curriculum coverage)

- Are learners absorbing the curriculum and progressing well?
- Often assessed throughout the school year
- Another strong predictor of academic performance
- Can be assessed in many ways (formal/informal; external/internal)

Cambridge International Progression tests  
Cambridge Checkpoint  
Cambridge IGCSE
Example of a IGCSE Science question

Which diagram shows the structure of an alloy?

A

B

C

D

Domain knowledge (curriculum coverage)
Example of a Checkpoint English Question

Part 1

Questions 1–8

Read the text below.
For each number 1–8, circle the correct word on the next page.

Music

There are ...(0)... types of music, and we ...(1)... to them in different ways. Although we

Example

0 many
1 approach change affect react [1]
Teaching and learning environment

- Are learners in the best possible place to learn? Are unnecessary demands imposed upon them?
- A poor teaching and learning environment makes the task of processing information overly complex.
- We can reduce 'cognitive load' by removing obstacles to learning (e.g. disruptive classmates, outdated equipment, inadequate teaching methods).
- Note: this is **not** about reducing the demand of curriculum content ('dumbing down' lessons)
Reducing cognitive load, not curriculum content demand

Cognitive load theory
A poor teaching and learning environment makes the task of processing information overly complex.

There are lots of ways to think about the learner's environment, e.g. system level, school level, classroom, and home level factors.

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School Self-Evaluation Domains and Standards

Domain 1: The School's Mission and Educational Values
Domain 2: School Management and Leadership
Domain 3: Quality of Teaching and Learning
Domain 4: Resources for Learning
Domain 5: School Community Engagement

Teaching & learning environment

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Personal attributes

- Are learners good at the processes of learning? Are they ready to learn?
- Every learner possesses a unique combination of personal attributes beyond their cognitive ability, that help (or hinder) their learning
- Personal attributes include personality traits, 21st century skills, and mental wellbeing
- Can be long-lasting or temporary
- Not always easy to assess/evaluate
The rationale for focusing upon a particular combination could depend on school's unique context and culture and vision of holistic education.
# Cambridge Learner Attributes

<table>
<thead>
<tr>
<th>Cambridge learners</th>
<th>Cambridge teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Confident</strong> in working with information and ideas – their own and those of others.</td>
<td><strong>Confident</strong> in teaching their subject and engaging each student in learning.</td>
</tr>
<tr>
<td><strong>Responsible</strong> for themselves, responsive to and respectful of others.</td>
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</tr>
<tr>
<td><strong>Reflective</strong> as learners, developing their ability to learn.</td>
<td><strong>Reflective</strong> as learners themselves, developing their practice.</td>
</tr>
<tr>
<td><strong>Innovative</strong> and equipped for new and future challenges.</td>
<td><strong>Innovative</strong> and equipped for new and future challenges.</td>
</tr>
<tr>
<td><strong>Engaged</strong> intellectually and socially, ready to make a difference.</td>
<td><strong>Engaged</strong> intellectually, professionally and socially, ready to make a difference.</td>
</tr>
</tbody>
</table>
Example questions

https://www.cem.org/wellbeing

When I am at school I feel happy

never  not often  sometimes  often  always

When I am at school I feel sad

never  not often  sometimes  often  always
### Creating Cambridge Learner Profiles

<table>
<thead>
<tr>
<th>Name</th>
<th>Cognitive skills &amp; capabilities (CEM NVR)</th>
<th>Cross-curricular KSU (CEM Vocab)</th>
<th>Curriculum coverage (Class Biology test)</th>
<th>Teaching &amp; learning environment (Parental engagement)</th>
<th>Personal attributes (Wellbeing)</th>
<th>Target IGCSE Biology Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learner A (overachieving)</td>
<td>105</td>
<td>103</td>
<td>85%</td>
<td>Good parental engagement</td>
<td>High wellbeing</td>
<td>C</td>
</tr>
<tr>
<td>Learner B (achieving)</td>
<td>98</td>
<td>96</td>
<td>60%</td>
<td>Good parental engagement</td>
<td>Medium wellbeing</td>
<td>C/D</td>
</tr>
<tr>
<td>Learner C (underachieving)</td>
<td>133</td>
<td>127</td>
<td>64%</td>
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<td>Low wellbeing</td>
<td>A</td>
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<td><strong>C - Yes++</strong></td>
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<td>64%</td>
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<td>Low wellbeing</td>
<td><strong>A - No</strong></td>
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</table>

Creating Cambridge Learner Profiles

Pastoral support with shyness, friendships & teamwork in class
Key messages for teachers and tutors

• It is good to gain insights in all five areas of the framework.

• Combining baseline results (CEM) with information from internal assessments and evaluations can be really powerful. It can guide next steps to supporting learners to reach their potential.
Using the Cambridge Learner Profile framework

Cognitive skills and capabilities

Personal attributes

Educational success

Teaching and learning environment

Domain knowledge (curriculum coverage)

Cross-curricular knowledge, skills & understanding
A mystery class – what we know so far

- In an expanding international school in South East Asia
- 30 children in Stage 7
- 10 nationalities,
- From 4 local primary schools, plus 7 new to the country
- Some children have no English
- Following Cambridge curriculum
- We have used CEM baseline tests for several years
An introduction to the steps in the Education journey

- Step 1 – Map
- Step 2 – Assess
- Step 3 – Analyse the data and insights
- Step 4 – Plan
- Step 5 – Shape teaching & learning
- Step 6 – Reflect and refine
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Step 1: Map current data and insights

- Cognitive skills and capabilities
- Personal attributes
- Cross-curricular knowledge, skills & understanding
- Teaching and learning environment
- Domain knowledge (curriculum coverage)

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Cognitive skills and capabilities

Cross-curricular knowledge, skills & understanding

Domain knowledge (curriculum coverage)

Teaching and learning environment

Personal attributes

Educational success

Reports on motivation & engagement

Extra-curricular achievements & awards

Attendance records

End-of-year grades from elementary schools

Insights from the learners’ elementary schools

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Step 2: Assess

- Identify any gaps or any data that is inconsistent or out of date
- Be methodical – every learner is important
- Be consistent – structure the teacher conversations
- The assessments are not competitive
Gather data and insights and place onto framework

Cambridge Wellbeing Check

Reports on motivation & engagement

Extra-curricular achievements & awards

Attendance records

Cognitive skills and capabilities

Personal attributes

Educational success

Cross-curricular knowledge, skills & understanding

Domain knowledge (curriculum coverage)

Teaching and learning environment

MidYIS (CEM) 11-13 Years baseline/diagnostic test

Cambridge English benchmarking test

Subject teachers' early conversations with learners

End-of-year grades from elementary schools

Gather data and insights and place onto framework

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Step 3: Analyse the data and insights

- Schools generate lots of data and there could be information overload.
- It is important for each person using the data to consider what they are using it for.
- A Maths teacher will want to view a different subset of data to a teacher in a pastoral role.

The views are interconnected but each role has a different focus and responsibility.
Two different lenses

- The Maths teacher (subject role)
- The Class tutor (pastoral role)
The Maths teacher's focus

Step 3: Interested in prior domain knowledge and Maths potential

- MidYIS (CEM) baseline data
- Subject teachers' early conversations with learners
- End-of-year grades from elementary schools
<table>
<thead>
<tr>
<th>Name</th>
<th>MidYIS Non-verbal reasoning</th>
<th>MidYIS Maths</th>
<th>MidYIS Vocab</th>
<th>Conversations with learners</th>
<th>Checkpoint Stage 6 grades from elementary schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learner 1 (overachieving)</td>
<td>107</td>
<td>112</td>
<td>106</td>
<td>Loves Maths/Does extra at home</td>
<td>5.5</td>
</tr>
<tr>
<td>Learner 2 (achieving)</td>
<td>99</td>
<td>95</td>
<td>98</td>
<td>Enjoys Maths, finds shapes difficult</td>
<td>4.8</td>
</tr>
<tr>
<td>Learner 3 (underachieving)</td>
<td>129</td>
<td>106</td>
<td>100</td>
<td>Finds Maths 'ok' Doesn't like school at all</td>
<td>3.7</td>
</tr>
<tr>
<td>Learner 4 (underachieving)</td>
<td>113</td>
<td>111</td>
<td>100</td>
<td>Tries really hard. Frustrated when does not understand the discussion</td>
<td>3.5</td>
</tr>
<tr>
<td>Learner 5 (underachieving)</td>
<td>137</td>
<td>150</td>
<td>148</td>
<td>Does not like Maths. It's 'too hard'</td>
<td>4.5</td>
</tr>
</tbody>
</table>
The (pastoral) class tutor's focus

Interested in **personal attributes**

- Cambridge Wellbeing Check
- Reports on motivation & engagement

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# Creating Cambridge Learner Profiles: the Class tutor

<table>
<thead>
<tr>
<th>Name</th>
<th>Cambridge Wellbeing Check</th>
<th>Reports on motivation &amp; engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Life satisfaction</td>
<td>Absence of negative emotions</td>
</tr>
<tr>
<td>Learner 1</td>
<td>4.5</td>
<td>4.1</td>
</tr>
<tr>
<td>Learner 2</td>
<td>2.9</td>
<td>3.1</td>
</tr>
<tr>
<td>Learner 3</td>
<td>4.9</td>
<td>4.6</td>
</tr>
<tr>
<td>Learner 4</td>
<td>3.1</td>
<td>2.8</td>
</tr>
<tr>
<td>Learner 5</td>
<td>2.0</td>
<td>1.9</td>
</tr>
</tbody>
</table>
Step 4: Plan

- **Maths teacher** focus gaps in Maths knowledge and skills
- If support and interventions worked for past cohorts then reuse them

- **Class tutor** focus on transition into new school
- Focus on interpersonal relationships
- Plan activities to improve them – within class, peers, school
### Step 5: Teaching with formative assessment

<table>
<thead>
<tr>
<th>Formative Assessment</th>
<th>Summative Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informal</td>
<td></td>
</tr>
<tr>
<td>Questioning</td>
<td>Essays in uncontrolled conditions</td>
</tr>
<tr>
<td>Feedback</td>
<td>Portfolios</td>
</tr>
<tr>
<td>Peer assessment</td>
<td>Coursework</td>
</tr>
<tr>
<td>Self-assessment</td>
<td>Teacher assessment</td>
</tr>
<tr>
<td>Formal</td>
<td></td>
</tr>
<tr>
<td>Further analysis or tests, exams, essays</td>
<td>Tests</td>
</tr>
<tr>
<td>Target setting</td>
<td>Exams</td>
</tr>
<tr>
<td></td>
<td>Essays in controlled conditions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Self-Assessment Cards</th>
</tr>
</thead>
<tbody>
<tr>
<td>What went well...</td>
</tr>
<tr>
<td>Even better if...</td>
</tr>
</tbody>
</table>

![EMOTICONS.png](https://example.com/EMOTICONS.png)

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Step 6: Reflect and refine

- Look back at a cycle of learning and interventions
- Gather data and insights from the cycle such as formative assessment and end-of-topic tests (using Cambridge Learner Profile framework)
- Review the data
- Take Scheme of Work or teaching plan and refine it for the next 8-12 weeks
Examples of what could be in a cycle

A Topic
Teaching and Learning
Map, Assess, Analyse, Plan, Shape
Data Reporting Point
Reflect and Refine

A Semester
Teaching and Learning
Data Reporting Point
Reflect and Refine

Transition into elementary school
Teaching and Learning
Data Reporting Point
Reflect and Refine

A revision schedule
Teaching and Learning
Data Reporting Point
Reflect and Refine

Outcomes

Examples of what could be in a cycle

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Examples of what the data reporting point could be used for

Map, Assess, Analyse, Plan, Shape

Teaching and Learning

Data Reporting Point

Teaching and Learning

Data Reporting Point

Teaching and Learning

Data Reporting Point

Teaching and Learning

Data Reporting Point

Outcomes

Reflect and Refine

First Stage 7 Parents’ evening

Reflect and Refine

Setting or streaming

Reflect and Refine

Stage 9 IGCSE Options

Reflect and Refine

Exams

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“It makes sense because I do think that educational success depends on much more than the curriculum coverage.” Teacher in Indonesia.

“The areas are very clear and easy to understand. I was able to map out how different assessments can work together. Also, the learners’ profile is a great idea that I would love to implement at our school. The framework shows that we haven’t covered some areas that can help students make progress.” Teacher in Thailand.
To learn more about the framework...


https://www.cem.org/positivelearning
Thank you
Any questions?
Please let us know your views on this session

Scan the QR code and share your feedback with us
Learn more!
Getting in touch with Cambridge is easy

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or telephone +44 1223 553554