Interdisciplinary teaching and learning
Discussion

• What do I know about ID?

• What do I want to know more of?

• Anything that worries me?
Why an interdisciplinary approach?
The blind men and the elephant...
Why interdisciplinary learning?

Benefits for students:

• Allows students to use knowledge creatively to foster new understanding.

• Develops mental flexibility that prepares students to be lifelong learners.

• Promotes intellectual rigour by providing a holistic approach to the study of concepts and complex issues.

• Models the importance of collaboration and teamwork across disciplines (an important life skill).

• Supports and promotes transfer of understanding.
Why interdisciplinary teaching?

Benefits for teachers:

- Develops holistic understanding of disciplinary concepts and contexts.
- Increases collaboration across subject groups and fosters collegiality.
- Allows subject groups to share the delivery of the content, skills and processes (managing time effectively).
- Offers opportunities for rich and authentic professional development with colleagues from other disciplines or subject groups.
The MYP believes that disciplinary teaching is important and that interdisciplinary understanding does not “naturally” happen, but rather requires explicit planning and a clear sense of purpose on the part of teachers and schools.
Key documents

Interdisciplinary unit planner

<table>
<thead>
<tr>
<th>Teacher(s)</th>
<th>Subject groups</th>
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<table>
<thead>
<tr>
<th>Unit title</th>
<th>MYP year</th>
<th>Unit duration</th>
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Inquiry: establishing the purpose of an interdisciplinary unit

<table>
<thead>
<tr>
<th>Purpose of integration</th>
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<table>
<thead>
<tr>
<th>Key concept(s)/related concept(s)</th>
<th>Global context</th>
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<table>
<thead>
<tr>
<th>Statement of Inquiry</th>
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<table>
<thead>
<tr>
<th>Inquiry questions</th>
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</thead>
<tbody>
<tr>
<td>Factual</td>
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<tr>
<td>Conceptual</td>
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<tr>
<td>Debatable</td>
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Interdisciplinary unit planner
Multidisciplinary

Interdisciplinary

Transdisciplinary

How are these approaches different?
Visualizing approaches

Disciplinary → Multidisciplinary → Interdisciplinary → Transdisciplinary
Defining concepts...

- **Multi**: working with multiple disciplines, maintaining boundaries
- **Inter**: working between more than one discipline, blurring boundaries (interdependent)
- **Trans**: working across and beyond disciplines, eliminating boundaries
DEFINITION - WHAT

Is interdisciplinary learning?

The process…

…by which students come to understand bodies of knowledge and modes of thinking from two or more disciplines or subject groups to create a new understanding as demonstrated through the idea of explaining a phenomenon, solving a problem, creating a product, or raising a new question in ways that would have been unlikely through a single disciplinary means.
3 attributes of interdisciplinary understanding

- Purposeful
- Integrative
- Grounded in disciplines
**Purpose:** how to adapt to climate change

**Integration:** Students create a proposal to present at a UN summit considering the multiple phases of the global warming issue

**Disciplines:** sciences and economics/political science
Example from a unit plan
“*The sound of music*”
What disciplines were necessary for the unit “The sound of music”? How was this unit grounded in disciplines?

<table>
<thead>
<tr>
<th>Physics</th>
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<tbody>
<tr>
<td><strong>They learned:</strong></td>
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<tr>
<td>- what constitutes a sound wave</td>
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<tr>
<td>- how sound changes depending on the wave’s longitude and amplitude, how sound travels through different media</td>
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<tr>
<td>- how sound resonates with different materials.</td>
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<tr>
<td>- they also learned how inquiry takes place in physics:</td>
</tr>
<tr>
<td>- generating hypotheses</td>
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<tr>
<td>- devising small-scale experiments to test them.</td>
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<table>
<thead>
<tr>
<th>Music</th>
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</thead>
<tbody>
<tr>
<td><strong>They learned:</strong></td>
</tr>
<tr>
<td>* how pitch can be used to create an appealing melody</td>
</tr>
<tr>
<td>* how volume creates dynamics and mood</td>
</tr>
<tr>
<td>* the role of motifs and variation in composition</td>
</tr>
<tr>
<td>* the power of using different kinds of instruments strategically to express intended moods.</td>
</tr>
</tbody>
</table>
What purpose did teachers pursue? Why did understanding the sound of music matter?

**Purpose:** Developing an understanding of how instruments work to create compelling musical experiences. (personal and cultural expression)

- It sensitizes students to our human capacity to create compelling artistic experiences with materials in our natural environment.
- It enables students to better appreciate instruments they encounter, as well as the people who make and play them.
- It invites students to learn more about design, problem solving and be able to reflect on their approach to learning.
How are disciplines integrated in the example of “the sound of music”?

Understanding of sound waves and elements of music in two fundamental ways:

**Physics**
- explains how musical instruments produce sound

**Music**
- explores the expressive power of new sounds

**Integration**: Provides a deeper, richer understanding of the topic. In this case, how musical instruments produce sound and how that sound can be used to create compelling musical experiences.
Interdisciplinary teaching framework
(Author: Veronica Boix Mansilla)

1. MULTIFACETED TOPICS
   What topics are worth teaching in an interdisciplinary way?

2. DISCIPLINARY UNDERSTANDINGS

3. INTEGRATIVE UNDERSTANDINGS

4. PERFORMANCES OF UNDERSTANDING

5. TARGETED ASSESSMENT
   How do we know students are understanding?

What will students do to learn?

How will disciplines come together?

What disciplinary tools will students need?

How do we know students are understanding?
Programme requirements

• At least one collaboratively planned interdisciplinary unit for each year of the programme
  • At authorisation - At least one collaboratively planned interdisciplinary unit between more than one subject group
  • At evaluation – Two collaboratively planned interdisciplinary units between more than one subject group

• All MYP subject group teachers are responsible for developing meaningful ongoing opportunities for interdisciplinary teaching and learning
• Mandatory use of the interdisciplinary unit planning process
• Mandatory report of student achievements in interdisciplinary learning to students and parents
Programme requirements

Standard B2 - Resources and support – ”The school provides dedicated time for teachers’ collaborative planning and reflection.”

Standard C1 – Collaborative planning – ”Collaborative planning and reflection facilitates interdisciplinary learning to strengthen cross-curricular skills and the deepening of disciplinary understanding.”
Each interdisciplinary unit must:

- start with a clear sense of purpose, and be grounded in the relevant disciplines
- stand alone as a significant, engaging, relevant and challenging learning experience
- enable students to demonstrate development of the interdisciplinary objectives
- give students the opportunity to demonstrate achievement and interdisciplinary understandings through specific performances
- be based on a statement of inquiry that is conceptually driven and contextually framed
- involve students in a range of learning experiences planned in response to the inquiry questions
- be planned and taught to promote positive attitudes and the development of the learner profile and approaches to learning skills.

Teachers can consider the following questions when planning an interdisciplinary unit:

- To what extent is it necessary to draw upon other disciplines for this unit?
- In what ways does integrating disciplines contribute to a deeper understanding?
- How will disciplines be integrated effectively?
- What interdisciplinary objectives will we achieve in this unit?
- How will we know that interdisciplinary understanding has been achieved?
- What constitutes adequate evidence of understanding?
- What questions and concepts will students explore? In what global context?
- What will students do to learn?
- How will students be enriched by this learning experience?
- What attributes and skills will students develop and put into practice?
To have in mind...

• Good “D” is better than bad “ID”!
• “Equal representation” of disciplines is unnecessary
• Study multiple “ID” models
• Take teacher learning and collaboration seriously
• Start small…building on your disciplinary strength in a **purposeful, disciplined and integrative** way!!