

UbD and PYP: complementary planning frameworks

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Abstract

This article investigates commonalities and differences between two planning frameworks: Understanding by Design and the International Baccalaureate Primary Years Programme. The authors discuss the major features of each framework and compare their approaches to curriculum, assessment and instructional planning. Readers are invited to participate in an on-line forum for ongoing discussions about the conceptual and practical connections between UbD and PYP.

Educators throughout the world work in schools and districts that have adopted the International Baccalaureate Primary Years Programme (PYP) (2000) or Understanding by Design (UbD) (Wiggins and McTighe 1998) to promote student inquiry and meaningful learning. Both the PYP and UbD provide frameworks for planning curriculum, assessment and instruction, built around a 'backward design' construct. Indeed, they are complementary, but not identical. This article explores the major features of PYP and UbD and highlights key similarities and differences in terms of their goals and approaches to content, assessment and instruction.

The goals of Understanding by Design (UbD)

The goals of Understanding by Design (UbD) are reflected in its title:

1. UNDERSTANDING – A primary goal of education is the development and deepening of student understanding to enable transfer of learning. Evidence of student understanding is revealed when students apply (*ie* transfer) knowledge and skills within authentic contexts.
2. DESIGN – Effective curriculum planning reflects a three-stage design process called 'backward design'. By planning with the 'ends' of understanding and transfer in mind, teachers are better able to prioritise their instruction around important ideas while avoiding the problems of 'textbook coverage' and 'activity-oriented' teaching.

The goals of PYP

The PYP is an international, trans-disciplinary programme that views structured inquiry as the leading vehicle for learning. The emphasis on trans-disciplinary thinking seeks learning across disciplines but with disciplinary lenses. The programme focuses on the total growth of the developing child, seeking to touch

hearts as well as minds, encompassing social, physical, emotional and cultural needs in addition to academic welfare.

The PYP intends that students demonstrate the 'learner profile', which includes the descriptors, inquirers, knowledgeable, thinkers, communicators, principled, open-minded, caring, risk-takers, balanced, and reflective. These terms may at first glance seem to have little to do specifically with internationalism, but the IB (2000:3) suggests that they characterise the types of internationally-minded students that are to be nurtured in IB schools. For a working definition of internationalism, readers are referred to Bartlett and Tangye (2007).

Using UbD in curriculum planning

The UbD framework consists of three stages presented in a design template:

Stage 1: clarifying desired results

Stage 2: determining acceptable evidence

Stage 3: developing the learning plan

Planning with Understanding by Design generally begins by considering established goals, such as content standards or learning outcomes. In Stage 1, designers begin by identifying the 'big idea' – those core concepts, principles, theories, and processes contained in established goals that students should come to understand. When planning units, teachers are asked to state the big ideas as enduring understanding; *ie* 'what do we want students to understand and be able to use several years from now, after they may have forgotten the details?' These 'big ideas' are key to understanding the content and making knowledge transferable.

Planners also create or select essential questions based on the targeted understandings. Essential questions serve to 'uncover' the content, provoke thinking, spark connections, and promote the transfer of ideas from one setting to others. Essential questions are inherently open-ended, yielding no single straightforward answer. For example, what makes writing worth reading? (Reading and writing); whose 'story' is it? (History and social studies); if practice makes perfect, what makes perfect practice? (Music and athletics). Essential questions are typically posted in the classroom and used throughout the unit (or year) to keep the students focused on important ideas.

Next, teachers consider the necessary assessment evidence based on the desired results (Stage 2) and finally, the learning plan (Stage 3), including daily lesson plans. It is important to note that while there is a logic to backward design, the actual process is in fact iterative in nature.

The UbD template helps planners check for alignment across the stages, resulting in greater curricular coherence. While originally developed for unit

planning, the UbD backward design process has proven equally effective for course (year-long) and programme (multi-year) planning.

Using PYP in curriculum planning

The IB provides a structured unit planner to assist teachers in collaboratively planning for inquiry. The PYP planner is designed around eight open-ended questions, including ‘What is our purpose?’; ‘What do we want to learn?’; ‘How might we know what we have learned?’; ‘How best might we learn?’; ‘What resources need to be gathered?’; ‘To what extent did we achieve our purpose?’; ‘To what extent did we include the elements of the PYP?’; and ‘What student-initiated inquiries arose from the learning?’ (International Baccalaureate Organization, 2007: 1-4). The last three sections are completed as a reflection after the inquiry unit concludes, in preparation for the next school year.

Six interdisciplinary themes provide a framework for the exploration of knowledge. These are akin to and inspired by what Boyer (1995: 81) called ‘core commonalities’. Teachers and students are guided by these themes as they plan and study. According to the *Schools Guide to the Primary Years Programme* (2002: 6) ‘students explore subject areas through these themes, often in ways that transcend conventional subject boundaries. In the process, they develop an understanding of important concepts, acquire essential skills and knowledge, develop particular attitudes and learn to take socially acceptable action’.

At the end of a PYP unit, an important question looms large: ‘Now that we know this, what will we do?’ This is addressed in part by the call to socially responsible student action in section eight of the PYP planner. During the planning process, schools also seek to be attentive to a scope and sequence for each of six subjects – these are school-devised with the use of PYP model documents but they can reflect state or national standards if necessary.

UbD: approach to assessment

In Stage 2, UbD asks educators to ‘think like assessors’, not activity designers. Teachers consider what types of evidence they will need to determine the degree to which students are developing the knowledge, skills and understandings targeted in Stage 1. Wiggins and McTighe (1998) propose that evidence of understanding is revealed through ‘authentic’ transfer tasks involving one or more of six facets of understanding: explanation, interpretation, application, shifting perspectives, displaying empathy, and exhibiting self-knowledge (reflection and metacognition). Other evidence of learning is obtained through a variety of assessment methods including quizzes, tests, observations, and work samples.

When planning in Stage 2, teachers should consider:

- closely aligning the assessment evidence with the desired results of Stage 1 (validity);
- collecting sufficient evidence of the important goals (reliability);
- establishing an authentic context for performance tasks of understanding/transfer; and
- how feedback will be provided to students.

PYP: approach to assessment

Consideration of assessment begins with the initial ‘What is our purpose?’ section of the 2007 PYP planner, which corresponds generally with ‘Stage 1-Desired Results’ in UbD. Teachers determine a central idea, and are then prompted to complete a sub-section entitled ‘Summative Assessment Tasks’. The PYP planner section three, ‘How might we know what we learned?’ similar to UBD ‘Stage 2 – Assessment Evidence’, prompts teachers to list evidence of learning. PYP teachers focus on pre-assessment, on-going assessment, and summative assessment, using a variety of tools for each. Teacher- and student-created rubrics are common and often unique to individual settings. Students place work samples in portfolios as evidence of learning and as material for peer- and self-reflection.

UbD: the teaching and learning plan

In Stage 3 of UbD, teachers develop their plans for teaching and learning based on the desired results of Stage 1 and the assessments in Stage 2. Guided by the acronym, **WHERE TO**, designers consider a set of questions that help them plan the unit’s lessons:

- W = What prior knowledge and understanding (or misconceptions) do students have about the content?
- H = How will students know the goals and expected performances of the unit? How will we hook and hold students’ interests?
- E = How will we help students develop the targeted understandings and equip for their transfer performances?
- R = How will we help students rethink or revise their understandings?
- E = How will students self-evaluate and reflect on their learning?
- T = How will the learning be tailored for diverse students in the classroom?
- O = How will the learning be best organised and sequenced?

As designers answer these questions, they keep focused on the ‘end’ – what we want students to understand and be able to apply (transfer).

PYP: the teaching and learning plan

Teachers often 'frontload' a PYP unit by teaching requisite knowledge and skills and then they transfer partial responsibility of instructional planning to the students. This frontloading phase enables teachers to address established content standards, while the second phase honours the PYP's emphasis on student inquiry. According to Short (1997: 55) '...inquiry-based instruction involves students "asking their own questions". They immerse themselves in a topic and have time to explore in order to find questions that matter to them – they don't just research someone else's topic or question.'

Exemplary PYP classrooms feature a variety of individual projects in response to students' own original queries, in formats such as posters, PowerPoints, skits, original videos, and purposeful essays. Because of the many diverse settings around the world in which the PYP is practiced, students will encounter a wide repertoire, a 'mixed salad', of techniques drawn from numerous international teachers.

Comparing curriculum planning with UbD and PYP

Both UbD and PYP follow a 'backward design' approach to curriculum design and both provide templates to guide the planning process. Each encourages a collaborative approach to planning, whereby teachers work with a partner or a team to design units. However, the frameworks differ somewhat on their approach to curriculum 'content'. PYP calls for a trans-disciplinary approach to curriculum through the use of established themes, whereas UbD units typically develop around established standards within disciplines. Teachers using the PYP planner build the unit around a single central idea and related questions, while UbD units typically feature several enduring understandings and concomitant essential questions.

It is important to note that the PYP planner was developed for use at the primary school level (grades K-5) where cross-curricular teaching flourishes. UbD offers a more universal framework that is being used to plan curriculum from pre-K to university levels. At the secondary and collegiate levels, curriculum is more often framed around specific disciplines. Consequently, UbD units at these levels are more likely to be content specific. Of course, UbD can be used to plan interdisciplinary curriculum as long as the 'big ideas' and essential questions of the connected content areas are properly honoured.

In terms of assessment, both PYP and UbD call for a collection of evidence – a 'photo album' rather than a single 'snapshot'. UbD explicitly asks for evidence of understanding, collected via the six facets. The acronym GRASPS offers a guide for creating authentic contexts for performance tasks. PYP places a premium on collecting student work in portfolios. Both frameworks employ

criterion-based evaluation using rubrics, and encourage students to self assess and reflect against established performance standards.

Instructionally, both frameworks emphasise active learning whereby students are engaged in 'constructing meaning'. Both PYP and UbD utilise teacher-created essential/guiding questions. However, PYP is more overt about encouraging students to generate their own inquiry questions. While UbD embraces the principles and practices of differentiated instruction (Tomlinson and McTighe, 2006), PYP stresses personalised learning (through student-generated inquiries) more than UbD.

UbD provides a robust set of 'design tools' and examples to support curriculum planning. Because of the complementary nature of the two frameworks, teachers in PYP schools have found many of the UbD design tools to be very congruent with the planner.

UbD users are able to 'work smarter' through the www.ubdexchange.org website, an on-line system for collaborative designing and reviewing units of study. Thousands of UbD units are available via its searchable database so that teachers do not need to reinvent the wheel when planning commonly taught topics.

Similarly, PYP practitioners utilise the Online Curriculum Center (OCC) at www.occ.ibo.org/ibis/occ/guest/home.cfm. Users can access a sample programme of inquiry as well as scope and sequence documents. Additionally, the OCC offers culminating project (PYP exhibition) guidelines and links to research flowing from the IB Research Unit located at the University of Bath in the United Kingdom.

Both UbD and PYP stress the value of regular reviews of curriculum and assessment designs, which in the case of UbD are based on the UbD Design Standards and a Peer Review process. Both frameworks recommend that textbooks be used as resources rather than as a syllabus.

In conclusion: a call to collaboration

Although originating independently, Understanding by Design and the Primary Years Programme share many philosophical and practical elements. As evidenced by recent PYP-related conference presentations around the globe, the PYP is now taking a more active role in articulating its practice in UbD terms. Indeed, the stage is set for practitioners from both approaches to 'cross-pollinate' their classroom practices by learning from each other. It is the hope of the authors that this article will serve to herald expanded communication and collaboration among users of the two frameworks.

To that end, the authors have established an online forum at www.groups.yahoo.com/group/UBDandPYP/. All readers are invited to visit the

forum, to react to the article, suggest answers to questions posed (see below), and to raise new questions or offer new insights as to how the two approaches can inform each other. As the forum grows, the authors resolve to pass along insights to both the International Baccalaureate and the Understanding by Design leadership teams.

Questions to contemplate

- How are UbD and PYP similar in their goals of engaging students and developing understanding? What are some differences?
- What elements of either framework can strengthen the other? (For example, the PYP notion of understanding could be clarified with the six facets of understanding, while the idea of more personalised student inquiries may be of interest to UbD educators.)
- What are the advantages of framing ‘the content’ of teaching and assessing around established content standards vs allowing students interests to be more directive? What place do locally mandated content standards have in PYP? Do they need a place?
- What is the role of teacher-developed essential questions (with some ‘end’ in mind)? What is the role of student-generated questions?
- To what extent do the PYP Planner and the UbD Template support teacher thinking or restrict teacher creativity?
- How are assessments designed and used within both programmes to support student learning?
- In designing a unit, how does a writer decide ‘how many’ enduring understandings to create? Is a single central idea sufficient?
- How important is it for students to create their own questions and explore their own answers? If UbD planners create essential questions from the big ideas, is that sufficient, or should students be allowed to go in pursuit of their own questions and answers?
- Do the PYP interdisciplinary themes honor all subject areas equally (or are there some ‘force fits’)?
- To what extent can (and should) the PYP emphasis on trans-disciplinary curriculum and student-generated inquiries be applied to the curriculum for older students (beyond the primary years)?
- In UbD, content standards are considered to hold the big ideas of each discipline. What is ‘falling through the cracks’ if curriculum planning stays within traditional disciplines?
- How might teachers in both programs ‘work smarter’ and share their best ideas?

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