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Understanding by Design and Backward Design

By Karen Boyes

In effective classrooms, according to Jay McTighe and Carol Ann Tomlinson, teachers consistently attend to at least for elements; whom they teach, where they teach, what they teach, and how they teach. They continue to say " if teachers lose sight of any one of the elements and cease investing effort in it, the whole fabric of their work is damaged and the quality of learning impaired."

Jay McTighe suggests that many teachers plan their topics and lessons around ‘activities' and/or ‘coverage' rather than ‘understanding.' Understanding by Design focuses on what is taught and the assessment evidence that understanding has occurred. It spotlights quality curriculum and quality instruction.

But what is understanding? Howard Gardiner's definition is "understanding is the capacity to apply facts, concepts and skills in new situation in appropriate ways." Art Costa suggests students evidence of understanding may occur when students can explain information accurately or take another person's perspective or give their interpretation, empathise or ask further questions.

Jay McTighe says " your students should be presumed innocent of understanding until proven guilty by preponderance of evidence." Such evidence includes being able to apply information, skills, key ideas & concepts to a novel situation, an authentic content, being able to explain, justify, theorise and defend.

Assessment of learning ought to take on a photo album view rather than a single snap shot. Use multiple sources than have been collect over time, to show evidence of understanding. These include authentic tasks and projects, academic tests or exams, quizzes, informal checks for understanding, student self assessments and a variety of other assessment undertakings.

Learning with understanding is more likely to promote transfer than simply memorising information from text or a lecture. (Bransford et Al)

If you want your students to explore essential questions and understand important ideas then you need to plan accordingly. Backward design is a three stage process to produce powerful lessons with long lasting, enduring understanding as opposed to activity based learning with little depth of understanding.

The concept of planning backwards is not new. NASA used a backwards planning process to get the first man on the moon and Stephen Covey, author of Seven Habits Of Highly Effective People, gives details of planning with ‘the end in mind.' The results using this backward design, in teaching, is more clearly defined goals, more appropriate assessments and more purposeful teaching.

Here are the three stages of the backward design.

Stage 1: Identify the desired results
Before planning any activities, trips or projects ask your self these questions; What should students know, understand or be able to do at the end of this topic or unit of study? What content is worthy of understanding? What "enduring" understandings are desired? What are the BIG ideas embedded within the curriculum standards, achievement objectives and key competencies?
Because there is often more content than can be covered in the time frame it is reasonable to make choices about what is important, clarifying priorities.

Stage 2: Determine acceptable evidence
How will you know the students have reached the desired outcome? What would be acceptable evidence of student understanding and proficiency. This planning method requires you to think like an assessor. Jay McTighe states, "If you plan the assessment in advance it sharpens and focuses the teaching." This is not teaching to a test, however teaching to the desired results, and enduring understandings in step one.

Stage 3: Plan learning experiences and instructions
Now is the time to plan the essential questions, activities, sequence and resources best suited to reaching the desired outcome. The goal at this stage is to make your teaching engaging and effective for your students, while always keeping the goal in mind. Questions to ask yourself at this stage include; what learning experience and instruction will promote understanding? What prerequisite knowledge or skills must be learned if understanding is to occur?

A tool to assist in this planning is ‘WHERE.'
W - where are we headed and why?
H - how will I ‘hook' my students into this topic?
E - what opportunities will there be to explore key ideas?
R - how will we provide opportunities to rethink, rehearse, refine and revise?
E - how will students evaluate their own performance?

Ideas to ‘hook' students through engaging and thought-provoking experiences includes using problems and challenges, issues or controversy, case studies, weird facts and anomalies and true life stories.

Asking essential questions is another key to this design. Ask open ended question that require more than one answer. Your questions are a doorway to the BIG ideas you are wanting to explore. The same essential questions should recur throughout your teaching and be revisited with students and question should be generative, sparking inquiry and raising more questions. It is the difference between asking "How would life be different if we couldn't measure time?" verses "How many minutes are in an hour, how many hours in a day?" The first question is more compelling and gripping to an audience. Art Costa suggests at the end of a unit of work, student should have more questions than they started with.

I believe it is our responsibility as teachers to provide students with demanding content and ask powerful questions to help students make, find and explain connections, learnings and understandings. It is well documented by Lauren B. Resnick and others that if students are held to low expectations and have not been taught to think, they accept the judgment that inborn aptitude matters most and that they have not inherited enough of that capacity and their performance remains low. It is also widely known that if students are treated as if they are intelligent, actually become so. They learn more and learn more quickly. They think of themselves as continual and powerful learners. Understanding by Design and backward design are steps towards creating these powerful learners in your classroom.

References Grant Wiggins & Jay McTighe: Understanding by Design 2004
Carol Ann Tomilson & Jay McTighe: Integrating Differentiated Instruction + Understanding by Design 2006
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