Understanding By Design and Differentiation

Session Topics
✓ Connections: UbD & DI
✓ UbD Stage 1 – Big Ideas & EQs
✓ Stage 2 – Designing & Differentiating Authentic Tasks
✓ Stage 3 – Differentiating Instruction
✓ Web-based Resources

Underlying Assumptions about UbD...
✓ Teaching and assessing for understanding enhances learning.
✓ Even good curricula can become more effective through “backward design” & design standards.
✓ Understandings are constructed in the mind of the learner.

Underlying Assumptions about Differentiation...
✓ A rich curriculum is the basis for effective differentiation.
✓ Students differ in their prior knowledge, learner profile, interests and talents.
✓ Differentiation strategies must be feasible in the classroom.

Understanding by Design
is not...
• a prescriptive program
• an instructional model
• content specific (but requires in-depth content knowledge)

A Differentiation Continuum

Where is your classroom? ...school?

How might we make our teaching more responsive without drowning in work?
Understanding By Design and Differentiation

Getting to Know Your Students:
Letter to Your Teacher

Ask students to write a letter to you describing themselves as a learner. Sample prompts:
- How do you learn best?
- What are your strengths as a learner?
- What aspects of school do you find difficult?
- What are your interests and hobbies?
- What is your most vivid memory?
- What do you want me to know that will help me help you learn best?

Getting to Know Your Students:
“Bio” on an Index Card

Ask students to answer questions on an index card. For example:
- What are your interests and hobbies?
- What is your most vivid memory?
- What do you want me to know that will help me help you learn best?

Getting to Know Your Students:
Life Map

1. Create a timeline of key events in your life to date.
___x___x___x___x___

2. Plot a “future map” — where you plan/hope to be in 5–10 years.
___O___O___O___

Getting to Know Your Students:
Letter from Parent

Ask parents to write a letter to you describing their child. Sample prompts:
- What are your child’s interests and hobbies?
- In what areas of school does your child excel?
- ... find most difficult?
- How does your child learn best (e.g., listening, observing, doing, etc.)?
- What do you want me to know that will help me help your child learn best?

Getting to Know Your Students:
Peer Nomination Form

Have students complete a Peer Nomination form. Sample prompts:
- Who would you ask to help you if you get stuck in class work or homework?
- With whom would you prefer to work in a group?
- Who are the most serious students in this class? ... the most creative?
- Who could best take charge of the class if the teacher had to leave?

Getting to Know Your Students:
Letter to Next Year’s Teacher(s)

Your principal has asked all students to write a letter to next year’s teacher to help the teacher prepare for the new class. Write a letter telling your new teacher about yourself as a learner. Be sure to tell what you find easy to learn, what is most difficult to learn, and how you learn best.
Getting to Know Your Students:

**Paired Interviews**

Have students interview a partner and introduce them to the class. Sample prompts:

- What do you like to do outside of school?
- What is your favorite subject?
- How do you learn best?
- Tell me something that most people do not know about you.

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**Student Survey**

I learn best by/when ____________________________

So when you teach me, please ____________________________

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**Getting to Know Your Students:**

**Student Survey**

I learn best by talking with other people.

So when you teach me, please

Let us work in groups and don’t make us always keep quiet!

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**Learning Metaphors**

I learn like a ____________________________

because ____________________________

So when you teach me, please ____________________________

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**Getting to Know Your Students:**

**Learning Metaphors**

I learn like a sponge because once my mind fills up I can’t hold any more

So when you teach me, please don’t give too much information at once, and give me some time to digest it.
3 Stages of Backward Design

1. Identify desired results.
2. Determine acceptable evidence.
3. Plan learning experiences & instruction.

“Backward” Design Logic

Think like an assessor, not an activity designer!

The UbD Template...

- embodies the three stages of backward design
- provides a common format for creating and sharing curricular designs

Three-Minute Pause

Meet in groups of 3 - 5 to...
- √ summarize key points.
- √ add your own thoughts.
- √ pose clarifying questions.

3 Stages of Backward Design

1. Identify desired results.
2. Determine acceptable evidence.
3. Plan learning experiences & instruction.
“Learning with understanding is more likely to promote transfer than simply memorizing information from a text or a lecture.”

- Bransford, et. Al., How People Learn, p. 224

A BIG IDEA...

- is an abstraction (e.g., a concept, theme, principle)
- is a transferrable idea
- “connects the dots”

Transferrable “big ideas”

- concept
- theme
- process
- principle

Concepts - transferrable ‘big ideas’

examples...

- adaptation
- change
- energy
- exploration
- freedom
- interaction
- justice
- migration
- patterns
- power
- symbol
- systems

A Study Of/In ________

The rainforest = A study of a complex ecosystem

World War I = A study of unintended consequences

A Study Of/In ________

Decimals, Fractions, Percents = A study of equivalence

Weight training = A study of proper technique
A Study Of/In ________

Frog and Toad are Friends = A study in relationships

The Catcher in the Rye = A study of author’s style

A Study Of/In ________

Insects = A study in structure and function

Native Americans = A study of identity and survival

If the textbook contains the answers, then what were the questions?

open-ended: no “single” answer; arguable; require reasoning
doorway: lead to ‘big ideas’ and core processes
essential: spark inquiry and raise other questions
recur: can (and should) be revisited

adaptation

‘Big Idea’ Understanding:
Living organisms adapt to enable them to survive in harsh or changing environments.

Essential Question:
In what ways do living organisms adapt to survive in harsh environments?

world literature

‘Big Idea’ Understanding:
Great literature from various cultures explores enduring themes and reveals recurrent aspects of the human condition.

Essential Question:
How can stories from other places and times be about me?
predictive statistics

‘Big Idea’ Understanding:
Statistical analysis and display often reveal patterns in data, enabling us to make predictions with degrees of confidence.

Essential Question:
Can you predict the future? What will happen next? How sure are you?

artistic expression

‘Big Idea’ Understanding:
Available tools and technologies influence the ways in which artists express their ideas.

Essential Question:
Where do artists get their ideas? What factors influence artistic expression?

friendship

‘Big Idea’ Understanding:
True friendship is revealed during hard times, not happy times.

Essential Question:
Who is a ‘true friend’ and how will you know?

verbal & non-verbal communication

‘Big Idea’ Understanding:
• Humans process both verbal and non-verbal messages simultaneously.
• Your communication becomes more effective when verbal and non-verbal messages are aligned.

Essential Question:
What makes a great speaker great? How do great speakers use non-verbals?

Essential Questions

When and how should we differentiate within the UbD framework?

“Color Key” to differentiation in backward design

Should be Differentiated

May need some Differentiation

Should rarely be Differentiated
Differentiation in UbD - Stage 1

Established Goals (e.g., Content Standards)

Essential Questions

Knowledge

Skills

Understandings

However:
Open-ended questions allow for diverse responses.

Sample Essential Questions:

- What is a number?
- Can everything be measured? ...quantified?
- What are the limits of mathematical modeling?

Sample Essential Questions:

- How do we know what really happened in the past?
- Whose “story” is it?
- Is history inevitably biased?

Sample Essential Questions:

- How do effective writers hook and hold their readers?
- What makes a book “great”?
- How do good readers figure out the author’s meaning when they don’t know all the words?

Sample Essential Questions:

- What is “wellness?”
- How do you hit with greater power without losing control?
- How can feedback help you improve?
Differentiation in UbD - Stage 1

Established Goals (e.g., Content Standards)

Understandings

Essential Questions

Pre- and on-going assessments may reveal skill or knowledge gaps needing instructional interventions, and suggest needed enrichment experiences for the advanced learners.

Established Goals (e.g., Content Standards)

However: Open-ended questions allow for diverse responses.

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Think “Photo Album” versus “Snapshot”

Sound assessment requires multiple sources of evidence, collected over time.

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Gather evidence from a Range of Assessments

✔ authentic tasks and projects
✔ academic exam questions, prompts, and problems
✔ quizzes and test items
✔ informal checks for understanding
✔ student self-assessments

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Match the Assessment Evidence with the Learning Goals

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The UBD Planning Template

Cover Stage 1

What do the assessments suggest the goals must be?

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3 Stages of Backward Design

1. Identify desired results.

2. Determine acceptable evidence.

3. Plan learning experiences & instruction.

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### Stage 2 – UbD Template

**You Are What You Eat:**
Create a picture book to teach 1st graders about “healthful” eating.

**Camp Menu:**
Design a 3-day menu for meals and snacks for a weekend camping trip. Explain why your menu plan is both healthy and tasty.

- Quiz on the food groups and their nutritional benefits.
- Skill check: interpreting nutrition information on food labels.
- Test on health problems caused by poor eating.

### Stage 1 – UbD Template

Students will use a knowledge of nutrition to plan appropriate diets for themselves and others.

- A balanced diet contributes to mental and physical health.
- Poor nutrition leads to various health problems.
- **What is healthful, balanced eating?**
- **What are consequences of poor eating?**

- Nutrition vocabulary
- Food groups
- Nutrition-related health problems
- Interpret nutrition info. on food labels
- Analyze & evaluate diets
- Plan a balanced diet

### Think “Photo Album” versus “Snapshot”

*Sound assessment requires multiple sources of evidence, collected over time.*

### Essential Questions

**How might we responsibly differentiate student assessments?**

### Differentiating Tasks

![Diagram showing differentiation of tasks based on structural variables, student interests, and products/performances.]

Since our class has been learning about nutrition, you have been asked to create an illustrated brochure to teach about the importance of good nutrition for healthful living. Your brochure should explain a balanced diet and show the difference between healthy and unhealthy eating. Show at least two health problems that can occur as a result of poor eating.
Differentiation in UbD - Stage 2

- **Goal**
- **Role**
- **Audience**
- **Scenario**
- **Product/Performance**
- **Standards (criteria)**

**Essential Questions**

**Performance Task**

**GRASPS**

**Goal** - explain “healthy” eating

**Role** - student teaching primary kids

**Audience** - grades K - 2

**Scenario** - “teach a lesson”

**Product/Performance** - picture book

**Performance** - oral explanation

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Differentiation in UbD - Stage 2

- **Goal** - explain “healthy” eating
- **Role** - student informing peers
- **Audience** - grades 5 - 8
- **Scenario** - “teach a lesson”
- **Product/Performance** - illustrated brochure

**Performance** - written + oral explanation

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Differentiation in UbD - Stage 2

- **Goal** - explain “healthy” eating
- **Role** - expert informing teens/adults
- **Audience** - teens and adults
- **Scenario** - informative brochure
- **Product/Performance** - written brochure w/

**Performance** - written explanation

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Stage 2 - Design Template

**You Are What You Eat:**
Create a brochure on “healthful” eating.

**Camp Menu:**
Design a 3-day menu for meals and snacks. Explain why your menu plan is both healthy and tasty.

- effectively illustrates a balanced diet
- clearly shows differences between healthy & unhealthy diets
- accurately explains two nutritionally-related health problems
- well crafted products and polished performances

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Differentiation Within Assessment

- Content Standard(s)
- Understanding(s)

**Criteria Implied**

**Performance Task**

Content Criteria

Product Criteria

- product & performance options
Differentiation in UbD

Synthesizing Activity:
Summarize the key ideas of this session as represented by the color-Coded UbD “backward design” Template.

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Differentiating for Diverse Learners

Content

Process

Product

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Differentiating Content

- Present in various modalities
- Provide texts at various reading levels
- Link content to students’ interests
- Teach both “whole to part” and “part to whole”
- Provide organizers & strategic aids
- Use flexible groupings

Differentiating Process & Product

- Use interest & talent based groupings
- Use GRASPS to tailor tasks and assignments
- Teach “tiered” lessons
- Allow student choices on products
- Use jigsaw strategy
- Allow student choices in work mode

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Part 2

Cite specific examples of how specific strategies apply to your content and level. Be prepared to discuss your selections and reasons with members of your group.

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research on Learning and Cognition

“The contemporary view of learning is that people construct new knowledge and understanding based on what they already know and believe.”

-continued
A logical extension of this view is that teachers need to pay attention to the incomplete understandings, the false beliefs, and the naïve renditions of concepts that learners bring with them.”

- Bransford, et. Al., *How People Learn*, p 10

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Diagnostic Pre-Assessments...

✓ precede instruction
✓ assess students’ prior knowledge
✓ check for misconceptions
✓ reveal interests and/or learning styles
✓ provide information to assist teacher planning and guide differentiation

Examples: pre-test, survey, skills check, K-W-L

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Factors Influencing Learning

**CLIMATE**

- comfort
- acceptance
- safety

**TASK**

- clarity
- utility/relevance
- perceived capacity to succeed

- clear goals
- known tasks
- essential ?s
- big ideas
- person/class criteria
- personal/cultural connections

- responsive teaching
- personalized support
- celebrating achievement & growth

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No teaching before pre-assessment

1. K-W-L
2. Pre-test (non graded)
   - fact/concept test
   - “transfer” test
3. Skills Check
4. Web/Concept Map
5. Misconception Check
How does UbD function like the keel of a sailboat?

- It provides stability when sailing.
- It buffers the effects of strong winds and currents.
- It helps you stay on course.

How does Differentiated Instruction function like the rudder and sails?

- It allows us to be responsive to unpredictable conditions (i.e., kids and context).
- It guides needed adjustments as we make our way.

Ideas for Action

- Think big.
- Start small.
- Go for an “early win.”