Quality Curriculum in a Differentiated Classroom: What Does it Look Like?

Marcia Imbeau
University of Arkansas, Fayetteville
mimbeau@uark.edu

Differentiated Instruction

Is rooted in quality curriculum.

Clarity about Curriculum Essentials
(is the compass for teaching for understanding)

The Big Picture

High Quality Curriculum

High Quality Differentiation

When you think about good curriculum, what are the necessary ingredients?

- Make a list of your ideas…..share with someone sitting next to you….
High Quality Curriculum & Instruction

- fresh and surprising
- seems real (is real) to the student
- coherent (organized, unified, sensible) to the student
- rich, deals with profound ideas (concept-based)
- stretches the student (rigorous)
- calls on students to use what they learn in interesting and important ways
- involves the student in setting goals for their learning and assessing progress toward those goals

Key Ideas

<table>
<thead>
<tr>
<th>Excerpt #1</th>
<th>Excerpt #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>The curriculum is rich and deals with profound ideas (concept-based).</td>
<td></td>
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<tr>
<td>The curriculum stretches the student (rigorous).</td>
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<tr>
<td>The curriculum is mentally and affectively engaging to the learner.</td>
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<tr>
<td>The curriculum connects with students' lives and world.</td>
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</tbody>
</table>
**Pre-assessment:**
2 weeks prior to the unit

**Know:** biodiversity, organisms, ecosystem, homeostasis

**Understand:**
- Ecosystems are dynamic
- Ecosystems change over time
- Scientific explanations are based on logical thinking; are subject to the rules of evidence; are open to rational critique

**Do:**
- Investigate relationships between ecosystem dynamics and human activity

**Readiness:** biodiversity, inquiry

**Interest:** inventory on ecosystems currently threatened for natural or man-made reasons

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**Curriculum Excerpt #1**

**Whole Group Lesson:**
Focus on **key concepts** (living systems in nature; change over time; principles of homeostasis and biodiversity; energy in/energy out)

**Hook:**
- News clip on Chesapeake Bay problems
- Heterogeneous groups use a Kagan® structure to generate scientific questions they have as a result of the news clip
- In whole group with teacher as facilitator, the class creates a class list of questions with a focus on researchable questions and experimental questions

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**Overarching questions generated in whole group discussion:**

- What evidence do we have to prove that living systems in nature change over time?
- What evidence do we have to prove that living systems in nature seek balance (homeostasis)?

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**Group:**
- Examine environmental policies related to preservation of the Chesapeake Bay
- Examine current conditions in the Bay to determine if the current policies are sufficient given present and future conditions and threats to this ecosystem
- Create a list of recommendations for policy revisions, deletions, and additions.
- Prepare your list of recommendations for submission to the Chesapeake Bay Foundation for review.

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**Group:**
- Using several newspaper and journal articles on the Chesapeake Bay ecosystem, research plants and animals. Find evidence to prove that living systems change over time. Organize your findings in a data retrieval chart (provided).
- Meet with the teacher to discuss your findings. Do you have sufficient evidence?
- Use newspaper and journal articles and the video provided to find evidence that living systems in nature seek balance (homeostasis).
- Meet with the teacher to discuss your findings. Do you have sufficient evidence?
- Review your findings and determine what unanswered questions still exist. Create a set of interview questions in preparation for an interview with a naturalist from the Chesapeake Bay Foundation.
Whole group debriefing with teacher as facilitator:

- What scientific research questions should we be asking about ecosystems, biodiversity, and homeostasis?
- Where can we find answers that would constitute sufficient evidence?

Regroup students according to interest inventory data to apply the questions generated in whole group debriefing.

Whole group debriefing: Mini-Socratic Seminar (5 questions)

Individual Evaluation: (1) Selected response   (2) Performance task

Curriculum Excerpt #1

Whole group lesson: Teacher lectures on content standards

Individual task: Student reads the book chapter and responds to the odd numbered questions at the end of each section

Pairs task: Students select partners to research the Chesapeake Bay ecosystem to identify plants, animals, and threats to the Bay. Each pair completes a worksheet from the textbook series.

Individual task: Students choose any ecosystem of their choice and research the ecosystem using a checklist of sub-topics provided by the teacher.

Whole group: Each student presents a 5-minute overview of the plants, animals, and threats to their selected ecosystem.

Individual task: Unit test (selected response) with an essay question on threats to a selected ecosystem.

Meaningful Connections
Developing Student Understanding: Ascending Intellectual Demand

If we were to graph the level of intellectual development across a unit of study would it:

- Require incremental increases in sophistication of thought?
- Modify the organization of concepts and application of skills through gradual adjustments in challenge?
- Follow a logical sequence of challenges that make sense to the learner?
- Facilitate student progression toward expertise in the discipline?

If so, it might look like this...

Using AID in Curriculum Design

Rules for the Road

- High quality differentiation has its foundation in quality curriculum.
- Quality curriculum requires student understanding and student engagement.
- Understanding comes from student interaction with conceptually-based, rigorous curriculum that gradually increases in sophistication.
- Student engagement is derived from curriculum that connects to the heart and mind of a learner.
**The Common Sense of Differentiation**

Ensuring an environment that actively supports students in the work of learning,

Absolute clarity about the learning destination,

Persistently knowing where students are in relation to the destination all along the way,

Adjusting teaching to make sure each student arrives at the destination (and, when possible, moves beyond it).

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**Providing High Quality Curriculum**

Teachers who understand the centrality of high quality curriculum in differentiation know that students can only become powerful learners if what they are asked to learn is powerful.

*Providing high quality curriculum looks, sounds, and feels like:*

--teaching for understanding (emphasizing the concepts/principles/essential understandings of a discipline)
--teaching for transfer (making sure students use what they learn in authentic contexts)
--insisting on and supporting consistent growth in high level thought
--guiding high quality discussions to explore important ideas
--ensuring that students examine varied perspectives and the relative merits of those perspectives
--helping students connect the important ideas of content with their own lives and experiences
--vigorously supporting students in developing the skills and attitudes necessary to do quality work
--starting with what the most able students need and supporting all students in success with that level of curriculum

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**Planet MI Task**

<table>
<thead>
<tr>
<th>V/L</th>
<th>L/M</th>
<th>M/R</th>
<th>B/K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write a story about your planet</td>
<td>Make a chart that compares your planet to Earth</td>
<td>Make up a song about your planet</td>
<td>Make up or adapt a game about your planet (Saturn ring-toss, etc.)</td>
</tr>
</tbody>
</table>

**QUALITY CURRICULUM: THE SHORT VERSION**

Engagement + Understanding = Success
However we conceive it, every lesson plan should be, at its heart, a motivational plan. Young learners are motivated and engaged by a variety of conditions. Among those are:

- novelty
- cultural significance
- personal relevance or passion
- emotional connection
- product focus
- choice
- the potential to make a contribution or link with something greater than self

Tomlinson • 2003 • Fulfilling The Promise...

Planning a Focused Curriculum Means Clarity About What Students Should ...

- KNOW
  - Facts
  - Vocabulary
  - Definitions

- UNDERSTAND
  - Principles/generalizations
  - Big ideas of the discipline

- BE ABLE TO DO
  - Processes
  - Skills

Teachers Must Distinguish Between:

Worth Being Familiar With

Important to Know and Do

Enduring Understandings

KNOW

Facts, names, dates, places, information

- There are 50 states in the US
- Napoleon Bonaparte
- 1066
- The Continental Divide
- The multiplication tables
UNDERSTAND

Essential truths that give meaning to the topic
Stated as a full sentence
Begin with, “I want students to understand THAT…” (not HOW… or WHY… or WHAT)

- Multiplication is another way to do addition.
- People migrate to meet basic needs.
- All cultures contain the same elements.
- Entropy and enthalpy are competing forces in the natural world.
- Voice reflects the author.

BE ABLE TO DO

Skills (basic skills, skills of the discipline, skills of independence, social skills, skills of production)
Verbs or phrases (not the whole activity)

- Analyze
- Solve a problem to find perimeter
- Write a well supported argument
- Evaluate work according to specific criteria
- Contribute to the success of a group or team
- Use graphics to represent data appropriately

Knowledge/Understanding/Be Able to Do

Study the following items. Talk with a partner (or work in a small group) and determine if each of the items represents something that would go in the knowledge, the understanding, or the skill column of curriculum planning.

1. The physical geography of a region directly impacts the development of the civilization that settles in that particular region.
2. Christopher Columbus discovered America in 1492.
3. Locate places on a map using a geographic grid including latitude and longitude.
4. Fair play is an essential part of all sports.
5. The United States of America is divided into specific regions, each of which has unique geographic features and natural resources.
6. Scientists record the results of their experiments in a careful and detailed manner.
7. Count to one hundred in units of ten.
8. Analyze the causes of the American Revolution.
9. Describe the rising action in a dramatic story.
10. Writers use a variety of literary elements to inform, persuade, describe, and entertain readers.
11. Write descriptive text that describes people, places, and events.
12. Good writers use the skills of logical organization and strong voice to convey a message to the reader.
13. You can find the decimal for 3/8 by using equivalent fractions.

Concept-Based Teaching

Concept:
“A concept serves as an integrating lens” and encourages the transfer of ideas within and across the disciplines “as students search for patterns and connections in the creation of new knowledge.”

Examples: Change, Culture, Systems, Interdependence, Organization

1 Lynn Erickson – Concept-Based Curriculum and Instruction, 2002
Concepts

Some concepts...
- span across several subject areas
- represent significant ideas, phenomena, intellectual process, or persistent problems
- are timeless
- can be represented through different examples, with all examples having the same attributes
- and universal

For example, the concepts of patterns, interdependence, symmetry, system, and power can be examined in a variety of subjects or even serve as concepts for a unit that integrates several subjects.

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Essential Questions
- 1-2 provocative questions that will frame the unit, and foster inquiry, understanding, and transfer of learning
- It might be helpful to start with, “Students will understand that….”

Understandings
- 1-2 full-sentence Insights, principles, big ideas, “a-has” that you want students to walk away with, no matter what!

Knowledge
- Categories of facts, vocabulary/terms, concepts, how-to’s, information that is “memorize-able”.

Skills
- Thinking skills, skills of the discipline, organizational skills. Remember to list only skills that will be assessed, not just any and all skills used in lesson activities. Skills start with a verb.

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Let’s Watch a Curriculum of Connections Lesson

As you watch the video, see if you can determine what the teacher wants students make connections about? What are essential questions that are a focus of the lesson?

From The Parallel of Curriculum Model
### Butterflies, a study in Living Things

#### “Before” (in need of revision!)

<table>
<thead>
<tr>
<th>Essential Questions</th>
<th>Understandings</th>
</tr>
</thead>
</table>
| • What is a butterfly?  
  • How does larva become a butterfly? | • The life cycle of a butterfly is egg, larva, pupa, and adult.  
  • Butterflies experience metamorphosis. |

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Skills</th>
</tr>
</thead>
</table>
| • Butterfly, moth, larva, pupa, metamorphosis | • Do an experiment.  
  • Watch butterflies.  
  • Record observations in notebook. |

### We Care for the Earth, a study in Going Green

#### “Before” (in need of revision!)

<table>
<thead>
<tr>
<th>Essential Questions</th>
<th>Understandings</th>
</tr>
</thead>
</table>
| • How can I help the Earth?  
  • What’s good to recycle?  
  • What does it mean to “go green”? | • Understand how to help the Earth.  
  • Helping the Earth is a choice.  
  • Some products are bad for the Earth. |

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Skills</th>
</tr>
</thead>
</table>
| • organic, recycle, pollution, “green”  
  • Ways our school helps the Earth. | • Learn how to recycle.  
  • Create a poster about how to help the Earth.  
  • Think about how the Earth can be helped. |

### Butterflies, a study in How Living Things Change Through Cycles

#### “After” (possible makeover)

<table>
<thead>
<tr>
<th>Essential Questions</th>
<th>Understandings</th>
</tr>
</thead>
</table>
| • How do living things change?  
  • What’s predictable about how living things change? | • All living things go through some changes, but not all living things change in the same ways.  
  • All living things experience change in cycles. |

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Skills</th>
</tr>
</thead>
</table>
| • Stages of the life cycle of a butterfly (butterfly, larva, pupa, metamorphosis) | • Make, organize, and record observations.  
  • Observe, compare, and describe the changes in the structure and behavior of butterflies over time. |

### We Care for the Earth, a study in Responsibility & Conservation

#### “After” (possible makeover)

<table>
<thead>
<tr>
<th>Essential Questions</th>
<th>Understandings</th>
</tr>
</thead>
</table>
| • Who’s responsible for taking care of the Earth? (Won’t the Earth take care of itself?)  
  • What can we do with “waste”?  
  • What can we do to prevent it? | • Everyone is responsible for taking care of the Earth.  
  • Conserving natural resources helps maintain the balance of nature, improve the quality of life, and preserve the Earth for future generations.  
  • We can find ways to take care of the Earth at home, at school, and in our community. |

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Skills</th>
</tr>
</thead>
</table>
| • Terms: conservation, natural resources, recycling, pollution, “green” | • Explain why taking care of the Earth is important.  
  • Analyze problems and develop solutions for prevent and handling “waste”.  
  • Create a personal action plan for helping to take care of the Earth. |
### Persuasive Writing, a study in Convincing

#### “Before” (in need of revision!)

<table>
<thead>
<tr>
<th>Essential Questions</th>
<th>Understandings</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is persuasive writing?</td>
<td>Students will understand how persuasive writing is different from narrative writing.</td>
</tr>
<tr>
<td>What’s a good persuasive writing topic?</td>
<td>Students will understand that good persuasive writing makes sense.</td>
</tr>
<tr>
<td></td>
<td>Students will understand characteristics of persuading.</td>
</tr>
</tbody>
</table>

#### Knowledge
- **persuasive**
  - The difference between persuasive and narrative writing
  - Topics that make for good persuasive writing

#### Skills
- Be persuasive in writing.
- Choose a topic.
- Revise work.

### Persuasion, a study in making a strong argument

#### “After” (possible makeover)

<table>
<thead>
<tr>
<th>Essential Questions</th>
<th>Understandings</th>
</tr>
</thead>
<tbody>
<tr>
<td>What makes for a good argument?</td>
<td>Effective persuasion builds a logical case with credible supporting evidence.</td>
</tr>
<tr>
<td>How can I get people to do what I want them to do, or think the way I want them to think?</td>
<td>Effective persuasion anticipates people’s objections in order to motivate a change in their thinking or behavior.</td>
</tr>
</tbody>
</table>

#### Knowledge
- Ways to organize a persuasive argument
- Traits of logical evidence and arguments

#### Skills
- Identify and research an issue of personal or social importance.
- Analyze characteristics of “good” and “bad” arguments around an issue
- Apply persuasive techniques to writing.

### Scale, a study in Drawing a Map

#### “Before” (in need of revision!)

<table>
<thead>
<tr>
<th>Essential Questions</th>
<th>Understandings</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is scale?</td>
<td>What scale is and how to use it</td>
</tr>
<tr>
<td>How can I use scale to draw a map?</td>
<td>You need scale to draw a map that is accurate.</td>
</tr>
</tbody>
</table>

#### Knowledge
- Where to find scale on a map
- What scale means

#### Skills
- Make a map.
- Identify the scale of a map.
- Ratio

### Scale Drawings, a study in Relative Size

#### “After” (possible makeover)

<table>
<thead>
<tr>
<th>Essential Question</th>
<th>Understanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>How can the size or distance of something be represented? How accurate does it need to be?</td>
<td>Scale helps communicate size and distance accurately and efficiently. It’s used when the “real” size isn’t possible or necessary.</td>
</tr>
</tbody>
</table>

#### Knowledge
- Scale: the relative size of something
- Scale drawing: a drawing of an object in which all parts are drawn to the same scale

#### Skills
- Draft a plan for a scale drawing.
- Make a scale drawing of a place.
- Measure to the nearest foot.
### The Midwest, a study in Geography

**Essential Questions**
- Where is the Midwest?
- How many states are in the Midwest?
- Who lives in the Midwest?

**Understanding**
- The Midwest is in the upper midsection of the U.S.
- Different kinds of people live in the Midwest.
- The Midwest has many resources.

**Knowledge**
- The capitals of all the Midwestern states
- The names and abbreviations of all Midwestern states
- Major rivers of the Midwest

**Skills**
- Complete a map of the Midwest.
- Take a virtual tour of the Midwest.
- Make a poster to convince someone to move to the Midwest.

### The Midwest, a study in Regions

**Essential Questions**
- What makes the Midwest a region?
- How are Midwesterners similar to and unique from people who live in other U.S. regions?

**Understanding**
- The Midwest is distinct from other regions in both naturally-occurring and human-made ways.
- We can learn to appreciate people who live in different place in the U.S. (e.g., the Midwest) by studying the similarities and differences between regions.

**Knowledge**
- Characteristics of the Midwest region (and other U.S. regions)
- Attributes of the culture and economy of the Midwest

**Skills**
- Describe and compare the physical, cultural, and economic characteristics of the Midwest.
- Analyze how the physical characteristics of a region affect human behavior.

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### From Differentiation at Work, K-5

**Principles, Lessons, and Strategies**
by Lane Narvaez and Kay Brimijoin, Corwin Press, 2010

**Examples of Teacher’s at Work (p. 25)**

**Original Understands (5th grade Measurement)**
- Measuring objects accurately is an important math skill that is used in many other areas of our lives.
- Estimating the length of objects is an important math skill and helps you when you measure objects. Estimating is important not only in measuring but in other areas in mathematics.

**Revised Understands (Linda - 5th grade Measurement)**
- Accurate estimation relies on knowledge of all units of measurement.
- Using the correct measurement tool can save time and improve accuracy.
- Labels attach meaning to numbers and must be used to when solving problems and designing projects (blueprints, models, scale, measuring length).

Measurement helps us understand and describe our world.
Examples of Teacher's at Work (p. 32)

Original Understands (Donna – 4/5th grade Unit on African-American Inventors and Inventions)
- History may not be as written and what may cause that to be a result.
- Inventions have positive and negative effects.
- Each culture needs to be recognized; people identify themselves within a form of a culture or more than one culture.
- Attributes can create a system/framework/group.
- Taking perspectives allows one to be more informed.

Examples of Teacher's at Work (p. 33)

Revised Understands (Donna – 4/5th grade Unit on African-American Inventors and Inventions)
- Diversity may exist in innumerable forms.
- In order to be a producer of knowledge, one must be a consumer of knowledge.
- Courage plays a major part in the lives of African American inventors.
- History may not be as it is written.
- Inventions may have positive and negative effects on cultures and inventors.
- Taking a different perspective allows us to test our assumptions and belief systems.
- Biases, few and power distort history.

In Other Words: KUDs Matter Because

- They create clear learning goals
  - Allow us to align goals, assessments, teaching, and learning tasks
  - They allow us to incorporate standards AND make meaning for students
  - They give us a basis for differentiation.
  - Who needs which K’s & D’s
  - How do we ensure that every student gets meaningful access to the U’s
  - They tell us what strugglers should invest in
  - They give us a platform for extending for advanced students

Creating common learning goals

- We have to know where we want all students to end up before we can think intelligently about how we want them to get there!