

# DIFFERENTIATED INSTRUCTION

Process, Product, and Content

## Do Now

- \* Make a tower (stack) of blocks at least 4 blocks high.

## Goals

- \* SWBAT
  - \* Explain what Differentiated Instruction is
  - \* Understand the eight principles of Differentiated Instruction
  - \* Identify when, how, and why differentiation is being utilized given various scenarios

# What is Differentiated Instruction

- \* A collection of instructional techniques
- \* Addresses the heterogeneous classrooms of the 21st century

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# Un-Goals

- \* SWNBAT
- \* Implement differentiated instruction in every class you teach tomorrow because...
- \* You cannot possibly learn and master a plethora of instructional techniques in one hour!

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# Why Differentiate?

- \* Legally
  - \* The Individuals with Disability Education Act (guarantees students the right to an education in the **least restrictive environment**. (USDOE, 2004)
- \* Morally
  - \* EVERY classroom is heterogeneously mixed by ability, interest, learning style, life experience, etc.

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# Eight Principles of Differentiated Instruction

- \* Carol Ann Tomlinson (1999) identifies eight principles that guide differentiated instruction

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## Principle 1 Focus on the Essentials

- \* Differentiating instruction takes time both in and out of class
- \* Identify the concepts in the curriculum that are absolutely essential to current and future learning
- \* Decisions can be made
  - \* Individually
  - \* As a team of teachers
  - \* As a department
  - \* etc.

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## Principle 2 Recognize that Students are Different

- \* Every child in your class is unique.
- \* EVERY classroom is heterogeneously mixed by ability, interest, learning style, life experience, etc.

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## Principle 3

### Assessment and Instruction are Inseparable

- \* “One Size Fits All” assessment is out, on-going assessment is in.
- \* Instruction is modified according to the findings after assessment

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## Principle 4

### All Students Participate in Respectful Work

- \* We assume that students enter our classes of mixed ability levels
- \* We also assume that students master tasks at different paces
- \* Differentiation provides activities that respect where a student begins and provides opportunity for growth
- \* Applies to both advanced and basic learners

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## Checkpoint

- \* Please take a minute and reflect on the first 4 principles and see if you can summarize WHAT they mean and WHY they are important.
- \* Principle 1 - Focus on the essentials
- \* Principle 2 - Recognize that students are different
- \* Principle 3 - Assessment and instruction are inseparable
- \* Principle 4 - All students participate in respectful work

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# Checkpoint

- \* Please take a minute and reflect on the first 4 principles and see if you can summarize WHAT they mean and WHY they are important.
- \* Principle 5 - Teachers and students collaboration
- \* Principle 6 - Balancing group and individual norms
- \* Principle 7 - Teachers and students work together flexibly

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# Introduction to Principle 8

- \* Principle 8 is the “meat and potatoes” of differentiated instruction
- \* When choosing to differentiate, the teacher must be very thoughtful and ask:
  - \* What am I going to differentiate?
  - \* How am I going to differentiate it?
  - \* Why am I differentiating?

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# Principle 8

The Teacher Modifies Content, Process, and Product

- \* This is the “what” of differentiated instruction
- \* When choosing to differentiate the first question you should ask yourself is “Which of these three will I be differentiating?”

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# Content

- \* *Content* is what you want students to learn and the materials or mechanisms through which that is accomplished
- \* Example
  - \* You have determined that all students need to learn about the events of the battle of Gettysburg
  - \* You provide texts at appropriate reading levels for the students based on your assessment of their ability.

# Process

- \* *Process* describes the activities that are designed to make sure students use key skills
- \* Example
  - \* Students need to learn about using money to make purchases and how to make change
  - \* Teacher creates a classroom store center where students can practice buying and selling using real currency

# Product

- \* *Products* are vehicles through which students demonstrate what they have learned
- \* Example
  - \* Students have just completed a unit on pharmacology in biology class
  - \* Students must research a prescription drug of their choosing and present their findings in a research paper, television commercial, or pamphlet

## A Note on Products

- \* It is important to differentiate (no pun intended) between actual products and work created during activities
- \* According to Tomlinson (1999) a product is something that “students produce to exhibit major portions of learning” (p.43)
- \* When you differentiate smaller activities (daily or weekly), you are actually differentiating process

## The “How” and “Why” of Differentiation

- \* After choosing what to differentiate (content, process, product) the teacher must ask...How will I differentiate and why am I choosing to do so?
- \* Tomlinson states that a teacher can differentiate according to...
  - \* Readiness
  - \* Interest
  - \* Learning Style

## Readiness

- \* *Readiness* refers to the ability level of the students
- \* When differentiating according to readiness, the teacher provides every student an opportunity for growth.
- \* Example
  - \* You have determined that all students need to learn about the events of the battle of Gettysburg
  - \* You provide texts at appropriate reading levels for the students based on you assessment of their ability.
  - \* The teacher has differentiated content (what) according to readiness (how) because he/ she recognizes that their students have varied reading abilities (why).

# Interest

- \* *Interest* refers to the interests of the students
- \* When students have the opportunity to draw on prior knowledge and interest, comprehension and retention are increased
- \* Example
  - \* Students have just completed a unit on pharmacology in biology class
  - \* Students must research a prescription drug of their choosing and present their findings in a research paper, television commercial, or pamphlet
  - \* The teacher is modifying product (what) according to interest (how) AND readiness (how) because he/she realizes that students are more likely to retain information when researching topics of interest to them (why)

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# Learning Style

- \* *Learning Style* refers to the seven types of learners proposed by Howard Gardner (1993)
- \* When differentiating according to learning style, the teacher is attempting to address the varied ways in which their students acquire information
- \* Example
  - \* Students need to learn about using money to make purchases and how to make change
  - \* Teacher creates a classroom store center where students can practice buying and selling using real currency
  - \* The teacher is modifying process (what) according to learning style (how) in addressing the *bodily kinesthetic* and *interpersonal* learning styles because they realize that a large portion of this particular class fit those learning profiles (why)

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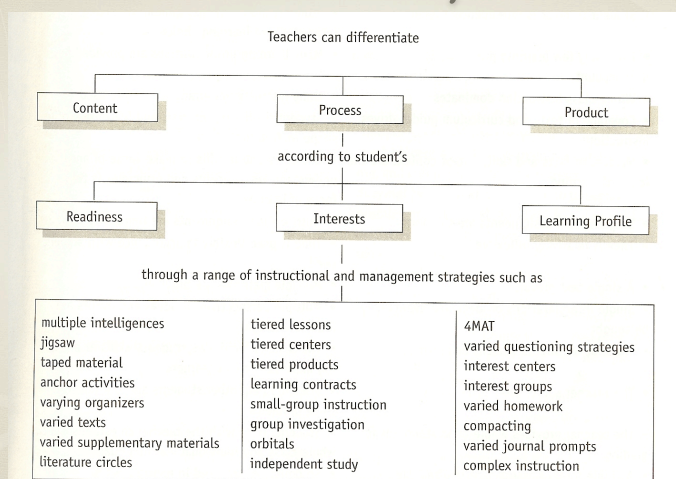
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# Summary



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## Activity

- \* Read your group's scenario
- \* Identify
  - \* What is being differentiated?
  - \* How it is being differentiated?
  - \* Why it is being differentiated?
- \* There may be more than one right answer!

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## Things to Note

- \* Tomlinson (1999) notes that “substantial change is a slow process that must be initiated, implemented, and institutionalized. It almost inevitably requires 5 to 10 years” (p.110)
- \* Differentiation is hard work only because self reflection is hard (American Idol Syndrome). You may utilize many of the instructional techniques already!
- \* Differentiation is not the latest and greatest flashy buzzword in educational thought...it is a philosophy of self reflection.
- \* Begin Slowly - Just Begin!

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## Differentiation is... Differentiation isn't...

- \* Differentiation isn't...
  - \* Using the end of chapter assessment from the assessment masters handbook
  - \* Unless you have thought critically about its educational value and identified how it will address the readiness, interests, and/or learning profiles of your students

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# Personal Experience

## Algebra I (10-12)

- \* Modified Compacting
  - \* process by readiness
- \* Peer Tutoring Day two
  - \* process by learning style (interpersonal learners)
- \* Small group tutoring with teacher
  - \* process by learning style (Visual/Kinesthetic learners)
- \* Cell Phone WebQuest anchor activity
  - \* product by learning style (intrapersonal and visual) and interest (kind of?)

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# Personal Reflections

- \* You need to live in a world of grey to differentiate properly.
- \* Differentiation is not always appropriate
  - \* Pre-Calculus honors is already differentiated by readiness
- \* Starting with low level vs. high level

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# Questions and Reflections

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**Scenario 1**

Ms. Smith has just taught a mini-lesson to her second graders on the comprehension strategy of making text-to-self connections (connecting reading to personal experience). She is now working with a lower level group of readers as they practice using this strategy. The students are using texts which are appropriate for their reading level.

What:

How:

Why:

**Scenario 2**

Mr. Smith's science class has just finished a unit on mammals. The students are choosing a mammal to study. They will research this mammal and report their findings by choosing between writing a research paper, recording an episode of Animal Planet, or creating a Podcast.

What:

How:

Why:

**Scenario 3**

Before studying the area of a circle in Ms. X's Geometry class, students were given a pre-assessment to determine their skill level. Three of the students have demonstrated that they have already mastered this skill. In class today, the three students who have demonstrated mastery are working together on an extension activity while the rest of the class is involved in direct instruction with the teacher to learn the skill.

What:

How:

Why:

## An Example

Unfortunately, the literature on differentiating a grade 9-12 mathematics classroom is sparse. To help fill that void, an example of what a differentiated high school math classroom may look like along with a description of what is occurring has been provided below.

Mr. Smith teaches Algebra I to tenth through twelfth grade students. The students have failed Algebra I at least once and enter the class possessing a wide range of skills with regards to the curriculum. Today is the second day of a lesson where students have been learning about simplifying algebraic expressions. Before beginning the chapter, students were given a pre-assessment of skills to be presented. Today, students who have placed out of this lesson are being given the opportunity to play on-line “games” which reinforce the concept of simplifying expressions on *Study Island* which is an internet based standardized test practice program which the district has purchased. This is not only a reward but is a true skill building exercise which will help achieve the districts goals of increasing percent proficient numbers on the HSPA. Yesterday, on the first day of the lesson, these students were working on another enrichment activity in groups which was meant to challenge their understanding of the topic.

On the first day of the lesson students who did not place out of the lesson were involved in a direct instruction lesson with the teacher which was presented using PowerPoint via LCD projector. The lesson addressed the visual and interpersonal learners as it provided examples and group practice opportunities in an attractive and easy to read format. At the end of the lesson, students were assigned to write in their

exit journals about what they learned in class along with being asked to write and solve a problem of their own. Today, students who have shown, via their exit journals, that they have grasped the concept are working in groups on practice problems. Students who still are having difficulty, are working with Mr. Smith on an activity. They are given several bags of colored tokens and then asked to describe the exact amount of each type of token in the bags in words. Then they are asked to take this information and write a mathematical expression describing the total number of tokens in the bag. For example, one student may have one red, four green, and six blue tokens. As an expression describing the total number of tokens in the bag, this would be  $r + 4g + 6b$ . After performing this activity, students would be asked the key question, What did you do first? Mr. Smith would guide the students to realizing that the logical first step is to collect all of the like tokens.

The students are also half way through working on a stock market project for this unit on the tools of Algebra I. In this project, students were allowed to choose a company to “buy” stock in. They researched how to read the headings in the stock section of a newspaper and analyze the past performance of their stock. Then, they began with a initial investment of \$5,000 and pretended to invest this in their company. They create spreadsheets to follow their investment over the course of a month. At the end of the project, they assemble their findings either in a physical portfolio, a paper, or a PowerPoint presentation along with their recommendation for purchasing the stock. A high quality example and rubric for each was provided before beginning the project.

## What is going on?

As previously noted the key questions are: What are we differentiating? How are we differentiating it? Why are we differentiating? In this lesson, Mr. Smith first differentiates content (what) by readiness (how) utilizing an instructional technique called compacting. When compacting, students are given a pre-assessment on the skills which need to be mastered in a unit of study. Students who score higher than 75% in a skill are given the opportunity to place out of the direct instruction portion of the lesson and instead work on enriching activities which take the learning a step further. This technique is especially effective in Mr. Smith's class of Algebra students, all of whom have sat in a full year Algebra course at least once and have therefore have greatly differing levels of competence (why).

Mr. Smith is also differentiating process (what) by learning style (how) in his direct instruction technique and his hands on re-teaching activity. The engaging PowerPoint presentation is an effective way to address visual and auditory learners and the hands on activity addresses the bodily-kinesthetic learners. By hitting all of these three major learning styles, Mr. Smith is making sure that he has the best chance of reaching all of his students (why).

Finally, Mr. Smith is seen differentiating product (what) by interest (how) in his stock project. By giving the students the choice of company to research, he is providing them the opportunity to research something that is meaningful to them and therefore more likely to have the learning "stick" (why). Additionally, Mr. Smith is using good form in allowing students to have a choice in methods of expression by allowing them to choose to write a paper, portfolio, or PowerPoint presentation.

## Teachers can differentiate

