PRE-SERVICE TEACHERS LEARN TO DIFFERENTIATE THE CURRICULUM FOR THEIR STUDENTS

By: Theresa Monaco, Christie Macey, Mario Prado, and Michelle Martinez

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- Monaco, T. (Ed.) 2nd Edition (2002) Biographical Directory of Leaders in Gifted Education. Royal Fireworks Press, Unionville, N.Y.
- Teachers Identify and Support At-Risk Gifted Students
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  By Theresa Monaco, Danna Eichenold, Victoria Casper, Claudia V. Gonzales, Susan Jackson, Maria Earle, Eva Marie Bisaillon

Abstract

- The final assignment for the online course was to develop a unit to include all students in their differentiated unit including the gifted. The authors selected the grade level and curriculum content of their choice. The Texas Essential Knowledge and Skills or TEKS are the curriculum content for each grade. Authors were required to use the TEKS for content (Math, Music, etc) and asked to determine their student's learning style (visual, auditory, or haptic) for related fun activities. The following authors were selected based on content accuracy, and use of innovative technology.

About the Author: Christie Macey

- My name is Christie and I am an art education major. I am currently student teaching in Friendswood ISD at their Jr High. After 6 weeks I will student teach in Elementary.

  My freshman year in highschool, we were required to write in a journal some future goals. Mine were to get married, have a family, own a house and car, and become an art teacher (Instead of writing mine out, I drew and colored it!)

  I am married 7 years, have a 3 year old daughter, a house and car, and will be graduating in May

Differentiated Unit Plan for Secondary Art

by Christie Macey

Master Study

Focus on Value, Color, and Paint

- Knowledge and skills.
- (1) Perception. The student develops and organizes ideas from the environment. The student is expected to:
- (A) illustrate ideas from direct observation, imagination, personal experience, and school and community events; and
- (B) compare and contrast the use of art elements and principles, using vocabulary accurately.
- (2) Creative expression/performance. The student expresses ideas through original artworks, using a variety of media with appropriate skill. The student is expected to:
- (A) create artworks based on direct observations, personal experience, and imagination;
- (C) produce drawings, paintings, prints, sculptures, ceramics, fiberart, photographic imagery, and electronic media-generated art, using a variety of art materials and tools in traditional and experimental ways.
- (3) Historical/cultural heritage. The student demonstrates an understanding of art history and culture as records of human achievement. The student is expected to:
- (B) analyze selected artworks to determine cultural contexts; and

Objective

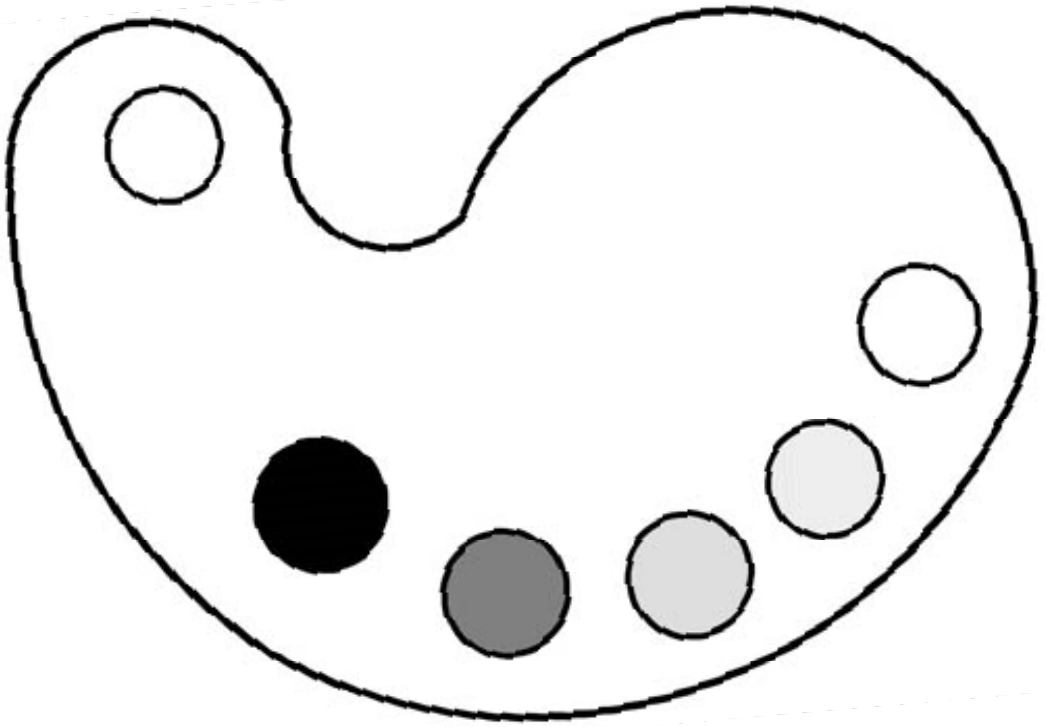
- Students are to study a master artist
- Students are to recreate a painting from their artist
- Students study value by creating pencil drawing
- Students study color and blending using colored pencils
- Students study color through painting
- Students research their artist and the painting and present their final products with the information they learned

Beginning of Differentiation

- Artists are grouped according to style, subject matter, or genre.
- Students choose artist based on personal interest. If students wish to pursue an artist not listed, they may research and present one to the teacher.
- Students research and collect images for paintings they'd like to study. Painting is selected with the approval from the teacher, based on appropriate level for student.

Differentiation Through Research

- Students will have multiple avenues for researching their artists.
  - A online binder with websites, articles, and images
  - Picture books
  - Biographies
  - Videos



Differentiation Through Instruction

- Instruction will be given in multiple forms
  - Verbally
  - Visually/Demonstrations
  - Written

Support Through Process

- The process will be supported and structured with use of…
  - Timelines
  - Rubrics
  - Teacher/student conferences

Evaluations

- Grading is based upon personal goals and achievements.
- Students are graded against themselves and their own progress, not against one another.
- Rubrics, assessment of how students utilized their time, quality of products will all be considered when grading.

About the Author: Michelle Martinez

- I am a senior Mathematics major and am currently student teaching at Northbrook High School in Spring Branch ISD. I will be teaching in a Geometry class at Northbrook some of which are academic level and others are Pre-AP

Ratios and Proportions

Differentiated Unit

Michelle Martinez

Objectives

The students will be able to:

- Define ratios and proportions
- Write and simplify ratios
- Solve problems using proportions

TEKS

(6.3)Patterns, relationships, and algebraic thinking. The student solves problems involving proportional relationships. The student is expected to:

(A) use ratios to describe proportional situations;

(B) represent ratios and percents with concrete models, fractions, and decimals; and

(C) use ratios to make predictions in proportional situations.

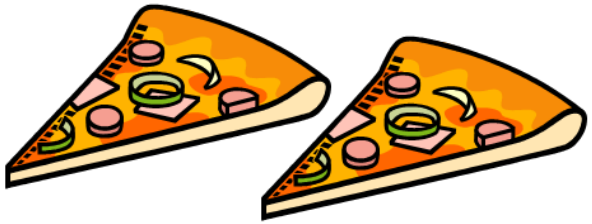
From http://ritter.tea.state.tx.us/teks/111toc.htm

Concept Statement

Ratios are commonly used by people involving measurement, conversions, rates, time, and money. It is important for students to develop proportional reasoning skills so that they can make smart decisions.

Pre-assessments to learn students prior knowledge

Students should be able to understand fractions as well as compare fractions and perform operations on them. In the engagement activity at the beginning of the unit, I will assess students prior knowledge of these concepts by introducing the topic using examples in life that they have experience with.



Introduction

As the students enter the classroom, they will be seated in pairs. Each pair will get three cards which will have a picture on it of people and pizza slices. Their task is to order the cards from who will get the least amount of pizza per person to who will get the greatest amount of pizza per person. While they are ordering the cards, they should be discussing their reasons.

Tasks

- Define ratios and proportions
- Simplify and compare ratios
- Give examples and non-examples or proportional relationships
- Solve problems using proportions

Process

- Provide opportunities for students to develop concept of ratio and proportion through examples they can understand
- Give students opportunity to come up with their own ratios and proportions
- Create meaningful problems at various levels for students to be involved with.
- Ask scaffolding questions so that students can form their own knowledge on the topic

Product

- Students will select problems from various topics that use ratios and proportions. Examples of topics would be cooking and measurement, planning a trip and calculating costs, art projects that involve scale models
- Students will have opportunities to present their final products using different forms of representation but all will include certain requirements

Differentiation by Readiness

- The pre-assessments will help me get a sense of what the students already know and how quickly they work.
- Tiered activities will be implemented by having similar problems but will vary in the level of difficulty
- Students who are ready for advanced applications or an abstract generalization will be exposed to it as they are ready.

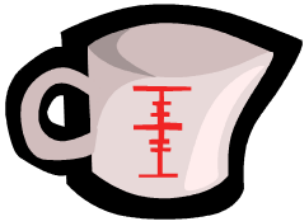
Differentiation by Interest

- Multiple topics of interest will be mentioned in the class such as cooking, traveling, sharing, shopping, and art, film and photograpy.
- Reading materials will be available as an extra resource about how ratios and proportions can be used in these different areas.




Differentiation by Learning Profile

- An outline of notes will be presented to students by the teacher after the introduction. Students will have organized information about the topic.
- Also in addition to the notes, manipulatives will be utilized in some of the activities that the students will do to grasp the concepts



Closing Remarks

- For students to understand ratios and proportions, they need to see how they are used in everyday life. Giving them the opportunity to work these problems is worthwhile for them and they will remember it much longer than if they were to just practice problems from a textbook.

About the Author: Mario Prado

IN REGARDS TO MY TEACHING EXPERIENCE, I HAVE PRIVATELY TAUGHT STUDENTS AT HAMILTON MS IN CY-FAIR ISD, GENTRY MS IN GOOSE CREEK ISD, AND NOLAN RYAN JH IN ALVIN ISD. MY INVESTMENT INTO MY STUDENTS' PROGRESS AND SUCCESS HAS INSPIRED ME AS A MUSIC EDUCATOR AND SHAPED MY PERSONAL BELIEFS CONCERNING MUSIC.

Exploring Music…

A Differentiated Unit

Mario A. Prado

Introduction

To introduce the unit, I will begin by examining the vocal and listening capabilities of my Kindergarten class. The lesson will consist of vocal exploration, listening to classical music, and singing a variety of songs, with and without movement, which address several key areas in becoming musically literate.

Objectives

The student will be able to identify and demonstrate understanding of the following:

- ***Steady Beat***
- ***Vocal /Instrumental Timbres***
- ***Singing/Speaking***
- ***Loud/Soft***
- ***High/Low***
- ***Fast/Slow***

Music & Concepts

- *Steady Beat: Let's Take A Walk*
- *Vocal /Instrumental Timbres: Nessun Dorma, Queen of the Night, Peter & The Wolf*
- *Singing/Speaking: Engine, Engine Number 9; Bee, Bee Bumble Bee*
- *Loud/Soft: Slavonic Dances*
- *High/Low: Snail, Snail; Rain, Rain; Bounce High, Bounce Low, Toccata and Fugue in D Minor, Frog in the Meadow*
- *Fast/Slow: Flight of the Bumblebee; Pomp & Circumstance*

Tasks

Students will:

- Sing songs which incorporate different pitches and rhythms.
- Listen to music which contains the different instrument and vocal timbres.
- Demonstrate movements corresponding to different parts of a song or piece.
- Use listening maps to analyze music.
- Listen/sing songs that tell a story.
- Identify comparatives in music.

Differentiating Process

- Offering manipulatives to students (rhythm sticks, Boomwhackers, Orff instruments)
- Varying the time the student has to complete a task. (if playing a game, giving them extra turns or repeat movements)
- Provide interest centers where students can choose the means of completing an assignment based on their preferred mode of learning (visual, auditory, kinetic).

Frog in the Meadow

Song: "Frog in the Meadow" from *Away: 155 American Folk Songs to Sing, Read, and Play*, p.7.
Concept: M-R-D
Enactive
Students will crouch to different frog-like positions with the contour of the melody.
"Mi" will be sung standing straight; "Re" will be sung with their hands on their knees, and "Do" crouched with hands touching the floor and knees bent similar to a frog. From "Do" to "Mi," the students will hop up to standing straight up. This will also demonstrate their ability to move to a steady beat.
Iconic
Using a three lined staff on the floor, students will place pictures of frogs on the ground according to their spatial relation with the melody. Students can then hop descending the staff's "Mi, Re, Do," then ascending up to "Mi" as the song dictates along with the correct rhythm and steady beat.

Will represent ti-ti's

Will represent ta's

Symbolic
Replacing the frog legs with eighth notes and the crouched frog with quarter notes, students will place correct notation on the staff. Students will then point out the measure in which the rhythm is different (mm. 5) and analyze if the pitch sequence changes within that context. Students can then identify and sign the song on solfegge and rhythm patterns, ta's and ti-ti's, with notation.

Differentiating Product

- Give students different a variety of options to show mastery of content.
- Allow students to work in small groups or independently depending on their needs.

Visual

- Create listening maps and that go along with the music
  - They will choose from two pieces of art music.
  - They will draw a map/guide that shows two different concepts covered in this unit.
  - Example: Peter & The Wolf – Students can match up instruments with their respective characters from Peter & The Wolf along a musical timeline to guide them through listening to the work.

Differentiating **Product**

Auditory

- Allowing individuals to demonstrate proficiency through solo performance or groups to perform as an ensemble
- Using different instruments to play a song (Solfegge, Recorder, Marimba, Piano)
- Creating a skit or composing a song to relay information about a piece of music or composer

Differentiating **Product**

Kinetic

- Students use dance and movement to portray concepts within music
  - They will listen and respond to Slavonic Dances by Dvorak.
  - They will make up their own movements that show different concepts covered in this unit.
  - Example: For soft music, students will tip toe around the room to the beat. For loud music, students will march to the beat of the music. For silence, students will freeze in a pose.

Learning Environment

- Develop efficient and consistent classroom management procedures.
- Present music from a diverse set of cultures.
- Develop an appreciative and healthy attitude towards classical music, among other genres.
- Provide clear guidelines for independent and group work that is conducive to student's individual and social growth.
- Establishing a climate where students are able to move around when needed while others sit quietly.

TEKS – Music, Kindergarten

(K.1) Perception. The student describes and analyzes musical sound and demonstrates musical artistry. The student is expected to:

(A) identify the difference between the singing and speaking voice; and

(B) identify the timbre of adult voices and instruments.

(K.2) Creative expression/performance. The student performs a varied repertoire of music. The student is expected to:

(A) sing or play classroom instruments independently or in a group; and

(B) sing songs from diverse cultures and styles or play such songs on musical instruments.

(K.3) Historical/cultural heritage. The student relates music to history, to society, and to culture. The student is expected to:

(A) sing songs and play musical games from different cultures; and

(B) identify simple relationships between music and other subjects.

(K.4) Response/evaluation. The student responds to and evaluates music and musical performance. The student is expected to:

(A) identify steady beat in musical performances; and

(B) identify higher/lower, louder/softer, faster/slower, and same/different in musical performances.

COURSE REFERENCES

- An Effective Mathematics and Science Curriculum Option for Secondary Gifted Education, by Tandra L. Tyler-Wood; Mark Mortenson; Dawn Putney; Michael A. Cass, Roeper Review 22 no4 266-9 Je 2000
- Academic Self-Concept of Talented Students: Factor Structure and Applicability of the Internal/External Frame of Reference Model, by Frances Lee Lai Mui, Alexander Seeshing Yeung, Renae Low, & Putai Jin, Journal for the Education of the Gifted 23 no3 343-67 Spr 2000
- Talent Identification and Development in Taiwan, by Wu-Tien Wu, Roeper Review 22 no2 131-4 Ja 2000

COURSE REFERENCES

- Integrating an affective component in the curriculum for gifted and talented students, by Karen Johnson, Gifted Child Today (Waco, Tex.: 2000) 24 no4 14-18 Fall 2001
- Gifted Children in the Current Policy and Fiscal Context of Public Education: A National Snapshot and State-Level Equity Analysis of Texas, Bruce D. Baker, Educational Evaluation & Policy Analysis 23 no3 229-50 Fall 2001.
- Beliefs and Attitudes of Novice Teachers Regarding Instruction of Academically Talented Learners, Karen Megay-Nespoli, Roeper Review 23 no3 178-82 Ap 2001
- An Analysis of Multiple Intelligences Theory and Its Use with the Gifted and Talented, by Daniel Fasko, Jr., Roeper Review 23 no3 126-30 Ap 2001
- Perfectionism Differences in Gifted Middle School Students, by Del Siegle; Patricia A. Schuler, Roeper Review 23 no1 39-44 S 2000

COURSE REFERENCES

- Using Literature in Mathematics: Gifted Students' Comments, by Carolyn L. Pinchback, Gifted Child Today (Waco, Tex.: 2000) 24 no1 36-43 Wint 2001
- Mapping Out New Directions? Or Using the Same Roadmap?, by Tracy L. Riley, Gifted Child Today (Waco, Tex.: 2000) 24 no1 24-9, 60-1 Wint 2001
- STAFF DEVELOPMENT: OLD DOGS CAN LEARN NEW TRICKS, by Felicia A. Dixon; Richard Willis; John Benedict; Eugene Gossman, The Teacher Educator 36 no3 219-32 Wint 2001
- LESSONS LEARNED FROM GIFTED CHILDREN ABOUT DIFFERENTIATION, by F. Richard Olenchak, The Teacher Educator 36 no3 185-98 Wint 2001
- A LEGACY OF PROMISE: REFLECTIONS, SUGGESTIONS, AND DIRECTIONS FROM CONTEMPORARY LEADERS IN THE FIELD OF GIFTED EDUCATION, by Mary G. Rizza; Marcia Gentry, The Teacher Educator 36 no3 167-84 Wint 2001