

Going
OUTSIDE THE LINES
to Differentiate Instruction for
Elementary Grades

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Song Lyrics to:

“Beat of a Different Marcher”

By Debbie Silver & Monte Selby

Bobby marches to the beat of his different drummers
Jeffery does his reading, but he can't do numbers
Shawna's up and talkin' 90 miles an hour, again
Can't find his book or pencil, that would be Ben
Hyperactive, dyslexic, class clown, non-reader
Upper class, no class, off-task, bottom feeder
Little Arty's a challenge; Martin's a dream
We've seen them all, they all need to be seen.



All children in reach when we find their rhythm --
The step, the dance, the song within them
That's a better journey, but so much harder
Too extraordinary, but so much smarter
To drum to the beat of each different marcher.

Sandy's in the slow group, a proven low achiever
She's the small quiet one, not a class leader
Crayons in her hand, she can draw what she knows best
But no room for pictures on the standardized test.
Ballerina, bricklayer, biochemist, ball player
Diesel driver, drum major, diva-destined, dragon slayer --
Some kids have a chance, with a different choice
To show what they know, they must have a voice.

All children in reach when we find their rhythm --
The step, the dance, the song within them
That's a better journey, but so much harder
Too extraordinary, but so much smarter
To drum to the beat of each different marcher.

Introspective, oversized, minimized, criticized
Round holes, square lives, not much room for compromise.
There's a new song not yet written
For each and every child, will we listen?

All children in reach when we find their rhythm --
The step, the dance, the song within them
That's a better journey, but so much harder
Too extraordinary, but so much smarter
To drum to the beat of each different marcher.
Let's all dance to the beat of each different marcher!

(reprinted with permission of Streetsinger Music Company)

Essential Eight

Name- _____

The purpose of this “get acquainted” activity is to start thinking about the different areas of intelligence. Participants are to mix freely and try to get seven different people to sign the blanks (each participant may sign her/his own sheet once). In order to record a name in the blank, the person signing must actually perform the task (not just say that she/he can do it).

Find Someone Who Can:

_____ recite a poem from memory.

_____ finish this numerical sequence: 16, 2, 14, 4, 12, 6, 10 ____, and explain the logic behind it.

_____ within 30 seconds name 4 ways to sort rocks into categories.

_____ recall at least one dream from the last 3 weeks.

_____ with hands on head stand on one foot with eyes closed for at least 8 seconds.

_____ hum the first line of *Silent Night* on key.

_____ name 6 strengths or talents he/she has in less than 30 seconds.

_____ name five very close friends in less than 20 seconds.

Checklists for Assessing "How Students Are Smart"

Adapted by Debbie Silver

from *Multiple Intelligences in the Classroom* by Thomas Armstrong

Name of Student- _____

Check all the items that apply:

Linguistic Intelligence (Word Smart)

- 1. Is a good reader.
- 2. Enjoys word games.
- 3. Is a good joke teller/ storyteller.
- 4. Has a good vocabulary for age.
- 5. Enjoys listening activities.
- 6. Likes to write stories and/or poems
- 7. Communicates with others in a highly verbal way.
- 8. Appreciates rhymes, puns, and/or nonsense words.
- 9. Has a good memory for words, stories, details.

Other linguistic strengths:

Logical-Mathematical Intelligence (Number Smart)

- 1. Asks a lot of questions about how things work.
- 2. Has a good sense of cause and effect.
- 3. Finds math games interesting.
- 4. Can see and repeat patterns easily.
- 5. Enjoys working puzzles and brain teasers.
- 6. Understands computer programming.
- 7. Is a logical thinker.
- 8. Can estimate things involving numbers with relative ease.
- 9. Can work math concepts in head.

Other logical-mathematical strengths:

Visual-Spatial Intelligence (Picture Smart)

- 1. Reports clear, visual images (or dreams).
- 2. Can envision objects from more than one perspective.
- 3. Daydreams more than peers.
- 4. Likes to draw and/or create art projects.
- 5. Has a good eye for detail and color.
- 6. Is good at spatial games like chess and Tetris.
- 7. Likes movies, slides, or other visual presentations.
- 8. Can move between 2-dimensional and 3 dimensional representations with ease.
- 9. Can read and/or create maps.

Other visual-spatial strengths:

Bodily-Kinesthetic Intelligence (Body Smart)

- 1. Is very coordinated.
- 2. Exceptionally mobile: moves, twitches, fidgets, taps when seated for long.
- 3. Enjoys working with clay, fingerpaint, and other tactile media.
- 4. Can mimic others' gestures, posture, and movements
- 5. Must touch anything new or interesting.
- 6. Loves to take things apart and put them back together.
- 7. Uses dramatic body movements for self-expression.
- 8. Enjoys running, hopping, climbing, wrestling, or similar activities.
- 9. Exhibits fine motor control (crafts, painting, etc.).

Other bodily-kinesthetic strengths:

Musical Intelligence (Music Smart)

- 1. Can detect music that is off-key, off-beat, or disturbing in some way.
- 2. Remembers melodies of songs.
- 3. Taps rhythmically as he/she works or plays.
- 4. Sensitive to environmental noise (rain on the windows, etc.).
- 5. Plays a musical instrument and/or sings in a choir.
- 6. Has a good singing voice.
- 7. Responds favorably when music is played.
- 8. Sings songs that he/she has learned.
- 9. Unconsciously hums much of the time.

Other musical strengths:

Interpersonal Communications Intelligence (People Smart)

- 1. Establishes meaningful peer relationships.
- 2. Seems to be a natural leader.
- 3. Empathizes with others.
- 4. Likes to play with others.
- 5. Shows good teamwork skills.
- 6. Others seek this student's company.
- 7. Has two or more close friends.
- 8. Frequently acts as a mediator and/or peace maker.
- 9. Enjoys teaching others.

Other interpersonal communication strengths:

Intra-personal Awareness Intelligence (Self Smart)

- 1. Displays a sense of strong will.
- 2. Enjoys playing or working alone.
- 3. Has high self-esteem.
- 4. Has a good sense of self-direction.
- 5. Does not mind being different from others.
- 6. Has a realistic view of his/her strengths and weaknesses.
- 7. Is able to deal effectively with successes and failures.
- 8. Has an interest or talent that is not readily shared with others.
- 9. Seems to “march to the beat of a different drummer.”

Other intra-personal awareness strengths

Naturalistic Intelligence (Nature Smart)

- 1. Likes to identify and classify living and nonliving things in nature.
- 2. Cares for pets or animals.
- 3. Understands repeating patterns in nature and the universe.
- 4. Seems more “in tune with nature” than peers.
- 5. Would rather be outside than inside.
- 6. Has a demonstrated appreciation for a part of the natural world (i.e. dinosaurs, clouds, rocks, etc.)
- 7. Likes to garden and/or appreciates plants.
- 8. Understands and appreciates the environment.
- 9. Loves to collect things from nature.

Other naturalistic strengths

Logical Analytical/Linguistic

Science Fact Sense

_____ = Number of _____

Example: 93 = Number of M M from the E to the S
93 = Number of Million Miles from the Earth to the Sun

- a. 4 = Number of S in a Y
- b. 7 = Number of C in the R
- c. 206 = Number of B in the AS
- d. 8 = N of L on a S
- e. 3 = Number of B P on an I
- f. 4 = Number of C in the H H
- g. 3 = Number of A in a WM
- h. 9 = Number of P in S S
- j. 6 = Number of S on a S

Make up your own:

Topic: _____

Cartesian Diver

Introduction:

The Cartesian Diver was made popular in the 1800's by the philosopher Rene Descartes. It is commonly found in science classrooms or perhaps you have seen the *Diving Tony* toy distributed in boxes of Frosted Flakes. The Cartesian diver offers an eloquent demonstration of the most unique property of a gas, its compressibility.

Materials:

- One 2-liter plastic bottle with cap
- One glass eyedropper

Procedure:

- 1) Fill the bottle with water.
- 2) Fill a glass with water.
- 3) Draw water into the dropper until it is 2/3 full.
- 4) Place the dropper into the glass of water. If it sinks, adjust the water level until the dropper floats.
- 5) Place the dropper into the 2-liter bottle and screw the cap tightly in place.

Activity:

Hold the bottle in one hand and squeeze. What do you observe? Release the pressure with your hand and observe again.

Questions:

Why does the dropper sink when you apply pressure to the bottle?

As you squeeze the bottle the pressure inside increases. Liquids are not compressible but gases are. Therefore, the air in the dropper compresses and allows more water to flow into the dropper. This increases the weight of the dropper. As the weight increases, the density increases until it becomes greater than the density of water. Objects that have a density greater than water will sink.

Why are gases compressible and liquids not?

In gases the molecules are very far apart compared to their size. In other words, gases are mostly empty space. When put under increased pressure, the gas molecules can move closer together and the gas will occupy less volume.

On the other hands, in liquids the molecules are already crowded very close together. Since there is no empty space between the molecules, an increase in pressure cannot cause a decrease in volume.

Remote Control Cartesian Diver

By Dr. Bill Deese, Louisiana Tech University

You can amaze your students by operating your Cartesian Diver by "remote control." Start with the standard Cartesian Diver set-up. Drill a hole in the bottle top just large enough to accommodate a piece of aquarium tubing. Use another bottle (any size, but smaller is usually more convenient). Drill a hole in its cap also large enough to accommodate the aquarium tubing. Fill the second bottle with water and insert a piece of aquarium tubing 3 or more feet long inside each bottle.

By squeezing the small bottle, you will increase the pressure in it. The increased pressure in the small bottle will result in an identical increase in pressure in the large bottle, thus sending the Cartesian Diver to the bottom of the large bottle by a "remote control" device.

Some sneaky teachers we know even hide the "remote control" so that they can seemingly command the Cartesian Diver to dive by voice control alone. We highly recommend this procedure! It really causes the students to think about what is happening.

This activity demonstrates the principle that pressure is the same throughout a fluid.

These Are Barfs:



These Are NOT Barfs:



Which of These Are Barfs?



Critical Thinking and the Magic Tube

By William Deese
Louisiana Tech University

Description: A large cylinder with cords protruding from four holes is shown to the audience. When each cord is pulled, sometimes surprising results are obtained. The audience is challenged to explain how the magic tube is constructed.

Materials: 2-foot section of 2-inch PVC pipe
(2) 2-inch caps for the PVC pipe
7-foot section of 1/4-inch cord
(1) 1-inch metal ring

Construction:

- 1) Drill a 1/4 inch hole in the tube 3 inches from one end. Rotate the tube 180 degrees and drill another hole exactly opposite to the first one.
- 2) Drill two holes at the other end in analogous positions.
- 3) Cut the cord into 4-foot and 3-foot lengths.
- 4) Thread the 4-foot cord through a hole, through the metal ring, and out the hole on the opposite side.
- 5) Tie knots near each end of the cord.
- 6) Position the ring in line with the holes at the other end of the tube and thread the 3-foot cord through both holes and the ring.
- 7) Tie knots about 3 inches from each end of the second cord.
- 8) Pull one end of the long cord out and cut about 12 inches off. Tie knots about 3 inches from each end.

Procedure:

- 1) Display the magic tube to your audience and pull one of the Cords. Then pull the end exactly opposite the first one you pulled.
- 2) Now pull one of the cords at the other end and observe.
- 3) Continue to pull various ends of the cords while your audience tries to figure out how the magic tube works.
- 4) If your audience is a class, ask them to design their own tubes. There may be more than one design that works.

Hazards: Be careful when drilling the holes in the PVC pipe.

Reference: A hand-out by Bruce Hogue, Dustan Middle School

3rd Grade Sound – Essential Ideas

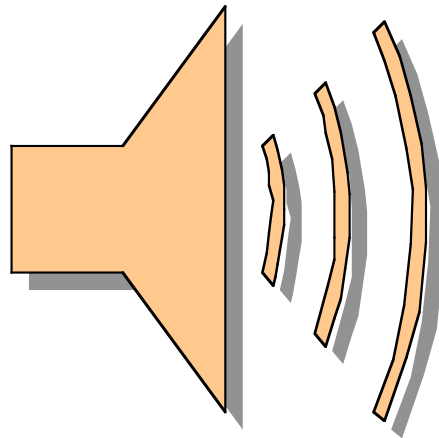
Major Ideas

My Notes

Sounds are produced by vibrating objects and vibrating columns of air.	
Pitch and volume are two characteristics of sound. They are different from each other.	
Pitch refers to how high (like a whistle) or how low (like a tuba) the sound is.	
The faster the vibration, the higher the pitch will be. The slower the vibration, the lower the pitch will be.	
Changing the length, tension, or thickness of a string affects the frequency of vibration, and therefore, the pitch of the sound.	

GALLERY WALK -- Sound

1. Name an instrument that can make both high-pitched and low-pitched sounds. Tell what must be done to change the pitch produced by the instrument.
2. Name something that makes a very loud sound. Explain why it is able to produce so much volume.
3. Name something that can only make a very soft sound. Explain why it is unable to produce a louder sound.
4. Name something that can make a very low pitch with a lot of volume.
5. Name a sound that you consider noise. Explain why you don't like it.
6. Invent an instrument that will make a very high-pitched sound and tell how you will design it.



GALLERY WALK -- Sound

Invent an instrument that will make a very high-pitched sound and tell how you will design it.

1. **A uka-tar. It will be like a small guitar, but made of metal with only a tiny air hole. The strings will be so thin and short that they have to move very vast and make only high sounds.**
2. **A Flistle. We will get a tiny metal tube and flatten one in for blowing. The tube will be short and have several holes. The air moving through the tube will vibrate fast and make a shrill sound.**
3. *A bongum. We'll start with a little metal bowl. We will cover it with a piece of thin stretchy rubber. We'll make it real tight so that when you pound on it the rubber will move fast and make a high sound.*
4. **A Cylinblow. We are going to fill a graduated cylinder almost full of water and then blow across the top. The small amount of air will vibrate fast and make a high-pitched sound.**
5. **HEELSHRILLS. WE ARE GOING TO PUT SHOES WITH RUBBER HEELS ON SEVERAL KIDS AND HAVE THEM DRAG THEM ACROSS SQUARES OF FLOOR TILES. THE FRICTION MAKES THE AIR VIBRATE QUICKLY, AND THE SOUND IS SQUEAKY.**
6. **A squeeny. Take a teeny metal tube square that is held up with a piece of leather. Hit the square with a tiny rod made of metal. The metal will vibrate very fast and make a really high-pitched sound.**

Ways to Manage Your Differentiated Classroom (from Betty Hollas, 2005)

- **Build relationships with students.**
- **Open pathways for students to construct meaning from the content you teach.**
- **Structure students' interactions with one another.**
- **Encourage students to interact with the information they are learning in ways that challenge, engage, and actively involve them.**



Diffierentiating Instruction

CONTENT:

1. **Use reading materials at varying readability levels.**
2. **Put text materials on tape.**
3. **Use spelling and/or vocabulary lists at readiness levels of students.**
4. **Present ideas through both auditory and visual means.**
5. **Use reading buddies.**
6. **Meet with small groups to re-teach an idea or skill for struggling learners or to extend the thinking or skills of advanced learners.**

PROCESS:

- 1. Use tiered activities through which all learners work with the same important understandings and skills but proceed with different levels of support.**
- 2. Provide interest centers that encourage students to explore subsets of the class topic or particular interest to them.**
- 3. Develop personal agendas to be completed either during a specified agenda time or as students complete work early.**
- 4. Offer manipulatives or other hands-on supports for students who need them.**
- 5. Vary the length of time a student may take to complete a task in order to provide additional support for a struggling learner or to encourage an advanced learner to pursue a topic in greater depth.**

PRODUCT:

Different Ways to Find Out What Students Understand

Make a chart or diagram	Do a demonstration	Create a dance
Write a letter to the editor	Make a scrapbook	Design a Web Quest
Conduct a discussion	Participate in a debate	Create a puppet show
Create an advertisement	Make an editorial video	Keep a journal log
Write an essay	Design a structure	Create a report
Participate in a simulation	Develop a collection	Make a plan
Create a poem	Write and do a rap	Make a mural
Do a photo essay	Design a game	Create a new product
Create an invention	Present a news report	Do an experiment
Teach someone else	Judge an event	Make a model
Write an analogy	Conduct an interview	Develop a rubric
Participate in a mock trial	Create cartoons	Write a book
Design and teach a class	Create a flow chart	Make a learning center
Devise a new recipe	Give a performance	Draw a blueprint
Write a monologue	Defend a theory	Do a self-assessment
Illustrate a math concept	Create a brochure	Solve a mystery
Do a multimedia presentation	Develop an exhibit	Critique a book
Write a diary from the perspective of someone else	Set up a system of checks and balances	Do a Gallery Walk (Carousel Walk)

How to Differentiate Instruction

From <www.teach-nology.com/tutorials/teaching/differentiate/planning/>

Examples of Differentiated Instruction

The following web sites prepared by ASCD will give you an example of differentiated instruction in a high school setting and in an elementary setting.

Elementary School Setting:

<http://www.ascd.org/pdi/demo/diffinstr/l1esex.html>

How to Plan For Differentiate Instruction

After having read what the research has to offer on differentiated instruction, specifically, brain-based research on learning, learning styles and multiple intelligences, and authentic assessment, you are now ready to plan.

Step 1- Know Your Students

Determine the ability level of your students.

This can be done by surveying past records of student performance to determine capabilities, prior learning, past experiences with learning, etc.

Survey student interests.

It is also important to get to know your students informally. This can be done by an interest inventory, an interview/conference, or asking students to respond to an open-ended questionnaire with key questions about their learning preferences (depending on the age group).

Is behavior management a problem?

This is key when planning for activities that require less structure. However, it is still important to determine learning styles and preferences for students who may have a hard time controlling their behaviors. Sometimes knowing preferences can help to motivate students to attend to any tasks that are presented.

Step 2- Have a Repertoire of Teaching Strategies

Because "one size does not fit all," it is imperative that a variety of teaching strategies be used in a differentiated classroom. Among many teaching strategies that can be considered, there are four worth mentioning: direct instruction, inquiry-based learning, cooperative learning, and information processing models.

Direct Instruction

This is the most widely used and most traditional teaching strategy. It is teacher centered and can be used to cover a great amount of material in the amount of time teachers have to cover what students need to learn. It is structured and is based on mastery learning. More information can be found on:

<http://www.teach-nology.com/teachers/methods/models/>

Inquiry-based Learning

Inquiry-based learning has become very popular in teaching today. It is based on the scientific method and works very well in developing critical thinking and problem solving skills. It is student centered and requires students to conduct investigations independent of the teacher, unless otherwise directed or guided through the process of discovery. For more information, go to:

<http://www.teach-nology.com/currenttrends/inquiry/>

Cooperative Learning

Probably one of the most misunderstood strategies for teaching is "cooperative learning." Yet, if employed properly, cooperative learning can produce extraordinary results in learning outcomes. It is based on grouping small teams of students heterogeneously according to ability, interest, background, etc. However, one of the most important features of cooperative learning is to pick the best strategy that will be used to assign the task for students to accomplish. The more popular strategies include JigsawII, STAD-Student Teams, or Group Investigation. For more information, go to:

http://www.teach-nology.com/currenttrends/cooperative_learning/

Information Processing Strategies

Teaching students "how to" process information is a key factor in teaching students how to strategically organize, store, retrieve, and apply information presented. Such strategies include, but are not limited to, memorization, KWL, reciprocal teaching, graphic organizing, scaffolding, or webbing. More information on this topic can be found at:

http://www.teach-nology.com/teachers/methods/info_processing/

Step 3- Identify a Variety of Instructional Activities

Engaging students in the learning process using activities that motivate and challenge students to remain on task is probably one of the most frustrating events in the teaching learning process. But if you know your students' profiles, you have a better chance at keeping them on task to completion of any given assignment or activity. In a

differentiated classroom, activities are suited to the needs of students according to the mixed ability levels, interests, backgrounds, etc. For example, if you have English language learners in your class, you need to provide activities that are bilingual in nature or that provide the necessary resources for students to complete the activity with success. Good activities require students to develop and apply knowledge in ways that make sense to them and that they find meaningful and relevant. Ideas for activities can be found at:

http://www.teach-nology.com/teachers/lesson_plans/

Step 4- Identify Ways to Assess or Evaluate Student Progress

Once again, we cannot assume that "one size fits all." As a result, varying means of student assessment is necessary if students are to be given every opportunity to demonstrate authentic learning. Authentic assessment has been around for a long time and is now taking the limelight as we attempt to measure students' progress in a fair and equitable way. A variety of assessment techniques can include portfolios, rubrics, performance-based assessment, and knowledge mapping. For more information on this topic go to:

http://www.teach-nology.com/currenttrends/alternative_assessment/

How to Differentiate Instruction

The Bottom Line

Differentiated instruction is about using teaching strategies that connect with individual student's learning strategies. The ultimate goal is to provide a learning environment that will maximize the potential for student success. The important thing to remember is to hold on to the effective teaching strategies that lead students to positive learning outcomes and to make adjustments when necessary. It's about being flexible and open to change. It's also about taking risks and trying teaching and learning strategies that you would have otherwise ignored. It's about managing instructional time in a way that meets the standards and also provides motivating, challenging, and meaningful experiences for school age students who are socialized to receive and process information in ways that require differentiation of experience. These are very exciting times for the teaching profession, we are faced with a generation of learners who are challenging us to think about how we deliver instruction.



How To Begin Differentiated Instruction

(Carol Ann Tomlinson. Differentiation of Instruction in the Elementary Grades. ERIC Digest . Retrieved from www.ericdigests.org/2001-2/elementary.html)

- Frequently reflect on the match between your classroom and the philosophy of teaching and learning you want to practice. Look for matches and mismatches, and use both to guide you.
- Create a mental image of what you want your classroom to look like, and use it to help plan and assess changes.
- Prepare students and parents for a differentiated classroom so that they are your partners in making it a good fit for everyone. Be sure to talk often with students about the classroom – why it is the way it is, how it is working, and what everyone can do to help.
- Begin to change at a pace that pushes you a little bit beyond your comfort zone – neither totally duplicating past practice nor trying change everything overnight. You might begin with just one subject, just one time of the day, or just one curricular element (content, process, product, or learning environment).
- Think carefully about management routines – for example, giving directions, making sure students know how to move about the room, and making sure students know where to put work when they finish it.
- Teach the routines to students carefully, monitor the effectiveness of the routines, discuss results with students, and fine tune together.
- Take time off from change to regain your energy and to assess how things are going.
- Build a support system of other educators. Let administrators know how they can support you. Ask specialists (e.g. in gifted education, special education, second language instruction) to co-teach with you from time to time so you have a second pair of hands and eyes. Form study groups on differentiation with like-minded peers. Plan and share differentiated materials with colleagues.
- Enjoy your own growth. One of the great joys of teaching is recognizing that the teacher always has more to learn than the students and that learning is no less empowering for adults than for students.

INTERNET SITES FOR DIFFERENTIATED INSTRUCTION

TEACH-NOLOGY THE WEB PORTAL FOR EDUCATORS:

http://www.teach-nology.com/currenttrends/alternative_assessment/

CEC INFORMATION CENTER ON DISABILITIES AND GIFTED EDUCATION:

<http://ericec.org/faq/gt-nurt.html>

MULTIPLE INTELLIGENCE RESOURCES FOR TEACHERS:

<http://www.proteacher.com/040009.shtml>

TIERED CURRICULUM PROJECT

http://www.doe.state.in.us/exceptional/gt/tiered_curriculum/welcome.html

ADAPT LESSONS TO REACH ALL STUDENTS

<http://www.teachervision.fen.com/teaching-methods/special-education/3759.html>

ENHANCE LEARNING WITH TECHNOLOGY

<http://www.enhancelearning.ca>

“EXTENDING CHILDREN’S SPECIAL ABILITIES - STRATEGIES FOR PRIMARY CLASSROOMS”

<http://www.teachers.ash.org.au/researchskills/dalton.htm>

TIERED INSTRUCTION: 3 - 5 EXAMPLES

<http://wblrd.sk.ca/~bestpractice/tiered/examples2.html>

CAST DIFFERENTIATED INSTRUCTION

http://www.cast.org/publications/ncac/ncac_diffinstruc.html

LIST OF RELATED CITATIONS

“DIFFERENTIATED INSTRUCTION FOR ELEMENTARY GRADES”

PRESENTED BY DR. DEBBIE SILVER

- Armstrong, T. (1998). *Awakening Genius in the Classroom*. Alexandria, VA: Association for Supervision and Curriculum Development (ASCD).
- Campbell, L., & Campbell B. (1999). *Multiple Intelligences and Student Achievement: Success Stories From Six Schools*. Alexandria, VA: Association for Supervision and Curriculum Development (ASCD).
- Forsten, C., Grant, J., Hollas, B. & Shaffer, J. Betty Hollas, Jill Shaffer (2002). *Differentiated Instruction: Different Strategies for Different Learners*. Peterborough, NH. Staff Development for Educators.
- Gregory, G. & Chapman, C. (2002). *Differentiated Instruction: One Size Doesn't Fit All*. Thousand Oaks, CA. Corwin Press, Inc.
- Hollas, B. (2005). *Differentiating Instruction in a Whole-Group Setting*. Peterborough, NH. Staff Development for Educators.
- Jensen, E. (1998). *Teaching With the Brain in Mind*. Alexandria, VA: Association for Supervision and Curriculum Development (ASCD).
- Lazear, D. (1999). *Eight Ways of Knowing: Teaching for Multiple Intelligences*, 3rd Ed. Arlington Heights, IL: IRI/Skylight Publishing, Inc.
- Newmann, F. M., Marks, H., & Gamoran, A. (1995). “Authentic Pedagogy: Standards That Boost Student Performance.” *Issues in Restructuring Schools*, 8, 1-11.
- Piaget, J. (1974). *To Understand Is to Invent*. New York: Grossman.
- Silver, D. (1998). “Engaging Students in the Learning Cycle.” *Principal*, 77 (4), 62-64.
- Silver, D. (2005). *Drumming to the Beat of Different Marchers: Finding the Rhythm for Teaching Differentiated Learners*. Nashville, TN: Incentive Publications.
- Sylwester, R. (1995). *A Celebration of Neurons: An Educator's Guide to the Human Brain*. Alexandria, VA: Association for Supervision and Curriculum Development (ASCD).
- Tomlinson, C.A. (2001). *How to Differentiate Instruction in Mixed-Ability Classrooms*. 2nd ed. Alexandria, VA: Association for Supervision and Curriculum Development (ASCD).