Multisensory Techniques & Mnemonics to Keep Your Lessons Effective and Fun

April 5th & 6th, 2019

Karen K. Leopold, Fellow/AOGPE

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Multisensory Techniques

To Keep Your Lessons Effective and Fun!

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Definition: Multisensory

- Involves the **continual use** of the **several senses**, to teach abstract concepts, making them concrete and accessible for memory, retrieval, usage, and transference (Birsh, 1999)

- Sensory Systems:
  - Visual (vision), **Auditory** (sound), **Tactile** (touch), **Kinesthetic** (awareness of the position and movement of the body by means of proprioceptors* in the muscles and joints), **Smell**, and **Taste**

*Proprioceptors: “a sensory receptor that received stimuli from within the body, especially one that responds to position and movement”
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Definition:
Multisensory

Amount of Sensory & Motor Connections to the Brain

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History

(Henry, 1999)

- **Plato** (427-347BC) - “Where the boy is not yet clever in writing, the masters first draw lines, and then give him the tablet and make him write as the lines direct.”

- **Horace** (65BC) - suggested having child shape pieces of pastry into the shape of letters

- **Seneca** (3BC-AD65) - teacher guides the child’s fingers as they trace the letters

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History (cont’d)

- **Marcus Fabius Quintillian** (AD35-100) - Once the pupil recognized the letters from tablet or blocks, Quintillian had the pupil write each letter with a pen following the grooves carved in a wax or ivory tablet.

- **Johann Pestalozzi** (1746-1827) - believed that one must develop the child’s sense of touch, sight, and sound since sense perceptions are crucial in the development of the child’s mind.
  
  Felt one should teach from the concrete to the abstract and the particular to the general.

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History (cont’d)

- **Marie Montessori** (1912 - *The Montessori Method*) - established the basis for teaching using a combination of visual, auditory, kinesthetic and tactile senses.
  
  Influence mostly by Sequin (1735-1835), and Itard (1775-1838), who were influence by Pestalozzi, et al.
  
  Introduced tracing sandpaper letters while saying the sounds of the letters.
History (cont’d)

- **Grace Fernald** (1943 - *Remedial Techniques in Basic School Subjects*) developed a 4-stage system of tracing a word - saying each word as traced until memorized - writing the word from memory
  - Worked with **Hellen Keller**
  - The “look-say-do” method
  - Did not involve sounding out each letter and blending the sounds together

History (cont’d)

- **Dr. Orton, Anna Gillingham, and Bessie Stillman** (1965) “‘Before the child is asked to write, there must be whatever practice is necessary in tracing, copying, and writing from memory to dictation, the last being carried out with the child’s eyes averted.’ In all instances, the child says the name of the letter as he writes it.”
  - Orton advocated using sensory pathways to reinforce weak memory patterns
  - **SOS (Simultaneous Oral Spelling)**
  - Reading and Spelling are taught together
Importance of Using a Multisensory Approach

- How a teacher presents new instruction or reinforces prior learning is the difference between learning and non-learning (Sousa, 2006, Wrighton, 2010)

- Motivates students to be actively involved and engaged (Vosniadou, 2001)
  - “Novelty and fun gets the child’s attention and keeps it during the learning process” (Wrighton, 2010)
  - “The motivational value of associating letters with interesting characters or hand motions and incorporating this into activities and games that are fun is important for promoting young children’s learning” (Summary National Reading Panel, 2000)
Importance of Using a Multisensory Approach

**Presents abstract information in a concrete way:**
- “Turning a piece of information into elaborate information, signals its importance to the brain. **Adding a picture, a gesture or body movement, or connecting it to another sense, such as smell, establishes memory.** ‘Material that is **more imaginable, or concrete instead of abstract, is better remembered.** Pictures and objects are remembered better than are words. This may be because of dual coding of both an image and a word’ (Terry, 2006, p. 296).”

**Manipulating linguistic information in their thoughts is often difficult for dyslexic students**
- Especially, if the information is abstract or fleeting, like the sound of a letter or a spelling generalization
- They need to see [V], hear [A], say the letter name/sound [K] and move the letters or forms the letters during each task [K/T]
- Some students need to feel [K] and see their mouth forming the letters [V]
Importance of Using a Multisensory Approach

- Improves short and long-term memory, as well as retrieval:
  - When teaching in a sensorial, novel, playful, and meaningful way, the brain accepts the information and establishes it into short term/working memory and then stores it in long term memory for future retrieval (Rudy, 2008). (Wrighton, 2010)
  - “Playfully rehearsing new or old information is essential for memory. The more elaborate the practice, the stronger the neural connections are for remembering what is taught (Sousa, 2006; Terry, 2006).” (Wrighton, 2010)

What’s Your Goal & How Much Is Too Much?

Goal - “Go as fast as you can, but as slow as you must!”
  - You must always know why you are doing something in a lesson
    - It is important to make a concept concrete, memorable, easy to retrieve, and usable on a daily basis using VAKT activities

How much?
  - Being diagnostic and prescriptive allows you to know how much repetition is needed and how concrete you need to make the information
  - For students who are severely impaired, your activities should intensively implement as many VAKT components as possible
    - Visual and Auditory drills should involve a Kinesthetic/Tactile component
  - Less impaired students, who have an easier time processing information and retrieving it quickly, may not always need to have as much VAKT (i.e., using keywords, less TCCC, less repetitions)
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References
(Slides 2-19)


References
(Slides 9-15)


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Realia* (not a comprehensive list)

- **Counters**: for segmenting sentences, words, onset and rime, phonemes; blending, manipulating, and substituting sounds
  - Unifix cubes, bingo chips with wand, colored glass or stones, coins, tiles (wood, ceramic, cardboard), blocks (wood, plastic, paper, foam)
- **Mirrors**: for auditory discrimination (watching how ones mouth forms various speech sounds)
- **Writing materials**: pencil, pens, markers, crayons, gel boards, color chalk on black paper
- **Writing surfaces**: popsicle sticks, paper (colored & plain), shaving cream, salt, rice, sand, sandpaper, screens, bumpy cardboard, dry-erase boards, index cards, scratch boards, paper on plastic needlepoint mesh

*Realia* (ˈrē-ə-lē) “objects and material from everyday life, esp. when used as teaching aids.” (New Oxford American Dictionary)
Realia*
(not a comprehensive list)

- **Magnets**: letters, kinds of syllables, spelling generalizations & rules (use magnetic tape)
- **Posters and signs** especially those with pictures or mnemonics
- **Virtual realia**: iPads/tablets, computer, smart-boards
- **Game boards and materials**: dice, spinners, index cards, moving pieces, game boards: purchased, homemade, computer made

### Auditory Discrimination Activity

- Teacher says word
- Student repeats word
- Student puts a chip in the cup above the correct vowel sound

**NOTE**: Some students may need to finger spell or use counters to isolate the vowel sound.
Finger Writing

- When using a finger for either skywriting or tracing/writing, the student should use 2 fingers, which will create more Kinesthetic/Tactile feedback to the brain than using just 1 finger (it involves more motor movement).

- Remember that the student must always say each letter as he writes it; thus providing Auditory feedback.

- Skywriting or writing on a surface that leaves no visual impression will provide only kinesthetic feedback; there is no visual feedback because there is no image to see after writing.

- Writing on a surface like sand, rice, shaving cream, carpet, an iPad, crayon on paper over a screen, etc., will leave an impression and provide Visual feedback to the student.
**Writing on Screen Mat**

- Can use plastic craft-screen, needlepoint canvas, or plastic screening
- Provides good Tactile/Kinesthetic feedback

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**Trace, Copy, Cover, Closed**

- Used when teaching anything that has to be memorized or for correction
- Every time the student writes a word, he says each letter as he writes it
- Sequence:
  - Trace over model 3x
  - Copy word 3x
  - Cover words up and write word from memory 3x
  - Closes/averts eyes and writes word from memory

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Trace, Copy, Cover, Closed

Phonics/Spelling Generalizations

- As the student writes each letter, he says the letter’s name followed by a keyword or rule
- Ex: “au says /au/ in the beginning or the middle”

“Touch and Say”

- When the student makes an error reading either a word in isolation or in connected text.
- The teacher says, “Touch and Say” [A]
- The student then touches the first letter [V/K/T] and says its sound [V/K]; he does the same for each subsequent letter.
- Finally, the student blends all the sounds together [V/A/K], while moving his finger under the word [K/T] to decode the word correctly.
- Usually, as the student focuses his attention on each letter and sound, he can self-correct his error.
- If he cannot self-correct, then other correction procedures should be used as needed.
**Finger Decoding & Spelling**

- **Decoding** - student puts up a finger, on his non-writing hand, for each letter seen. Starting with the thumb, each phoneme is said as a finger is extended and then blended together to say the word. For the left-handed student, the right hand is turned palm down and the thumb is extended first so blending proceeds left to right.

- **Spelling** - word is echoed as the student catches the word in his non-writing hand, and puts up one finger at a time, saying the phoneme for each letter:
  - Word is then written using S.O.S.
  - When writing, some student can use the hand they are stabilizing their paper with to finger spell. Right-handed students will then count from pinky to thumb, palm down, L-R. Left-handed students count from thumb to pinky, L-R.

**Arm Tapping for Blending**

If the student cannot blend the letter sounds together to read a CVC word, this technique is helpful. The student sees the word printed/typed on a drill card; you can write the vowel in a different color from the consonants if needed.

**Technique:**
- The student extends his non-writing arm and says the first consonant’s sound while tapping his shoulder.
- The vowel’s sound is said aloud while tapping the elbow joint.
- The last consonant’s sound is said aloud while tapping above the wrist.
- Finally, the student puts his hand on his shoulder and while sliding down his arm, he blends each sound as he touches each area on his arm. If he cannot blend the word together, then he returns to his shoulder and slides down his arm, blending the sounds faster and faster.
Simultaneous Oral Spelling

The Gillingham Manual*

- Tutor says the word
  1. Student repeats the word [A/K]
  2. Student segments the sounds and names the letters in word (segmentation can be dropped as soon as the student is ready) [A/K]
  3. Student writes word saying each letter as he writes the word [V/A/K/T]
  4. Student reads what he wrote [A/K]

- The student always tells his hand what to do!

Hand Motions

Short Vowel Hand Cues

- **a** - apple - /ã/
  - Hold invisible apple in hand to bite
- **i** - itchy - /i/
  - Scratch back of hand with 1 finger
- **o** - olive - /ō/
  - Make an olive shaped o with thumb & rest of fingers to pop into mouth
- **u** - upper - /ū/
  - Shape hand’s web space in shape of a u & push up
- **e** - eddy - /ē/
  - With index finger write an e & circle around like an eddy in the water

Hand Motions (cont’d)

- Finger Decoding and Spelling
- Different types of syllables or syllable divisions
- Remembering definitions: digraph, blend, baseword, compound word, syllable, etc.
- Many students who need this kinesthetic/tactile feedback will develop their own hand motions for specific concepts
Mnemonic Devices

- Help student **remember and retrieve information**, especially if the information is abstract.
- Words for decoding/spelling generalizations should be in the **order of frequency of occurrence**, or **location in a word/syllable**.
- Keywords should be concrete, familiar, and **transparent** so the student can easily recognize the connection.
- Spelling rule mnemonics should be **short and concise**.

**Most Common Long Vowel Team Sounds**

- **ai** will sail away
- **ei** see the sea
- **ay** say flies
- **ee** bee, see
- **ea** eat, sea
- **ie** pie, glee
- **oe** nine, go
- **oo** boot, no
- **uw** new, few

**Vowel Team OO**

- **What does a ghost read?**
- **A book!**

**Doubling Pattern for 1 Syllable Words**

- Word ending with a **CVC + VOWEL SUFFIX**
- **Double the final consonant**.
**Reading Activities**

**Visual Drill, Sorting, Card & Board Games**

**Visual Drill**

**Association 1**

**Visual**: The student **sees** the drill card

1. Teacher holds up drill card with grapheme [V]
2. Student says letter(s) name [A]
3. Student says keyword [A]
4. a. Student writes letter(s) [V/K/T] as
4. b. Student says sound [A]

Eventually, the student can just reply with the sound
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Sorting Activities

- 2-pocket folders
  - 2 sounds of c
  - 2 sounds of g
  - 2 sounds of ow
  - 2 sounds of ou
  - 2 sounds of oo

- 3-pocket folders
  - open, closed, silent-e syllables
  - 3 sounds of -ed
  - 3 sounds of ea
  - 3 sounds of ch
  - 3 origins: Anglo-Saxon, Latin, Greek

Card Games - Grab It -

- Use any phonetic single word drill cards with words that have been taught for decoding (50-75 cards)
- When 2 people play, each person reads only half of the words
- Write “Grab It” on 7 or more drill cards (always an odd number)
- One person puts the “Grab It” cards in various places in the card deck; another person cuts the deck
- Players alternate taking a card from the top and reading their card; they keep the card
- When a player draws a “Grab It” card, the player takes all the other person’s cards
- Game ends when all the cards have been read, or when the time expires if a time limit was set

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Card Games - Go Fish -

- Players match words “Do you have table?”
- Players can match words and picture card (picture exemplifies the word) - helps improves vocabulary
- Silent-e Go Fish
  - Players match a CVC with its corresponding VCe word - “I have pin. Do you have pine?” or “I have mate. Do you have mat?”

Home-Made Games

- Game Board and Yarn Card

Created by Dawn Nieman, Fellow/AOGPE
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Computer-Made Board Game

4-in-a-Row

Computer-Made Board Games

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Spelling Activities

Auditory Drill, Tic-Tac-Toe, Column Dictations, and Games

Auditory Drill

Associations 2 & 3

(Phoneme Dictation - yellow card deck)

Auditory: The student **hears** the sound (phoneme) and **does not see the drill card**

1. Teacher dictates phoneme [A2]
2. Student echoes phoneme [A2]
3. Student says the letter(s) name [A2], keyword, and sound
4. Student writes the letter(s) while saying its name [V/K/T]

Eventually, the student just echoes, and writes the letter(s) while saying the letter name.
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Birthday Girl
(common –ir words)

On the girl’s third birthday, she received her first skirt and shirt that she got dirty as she twirled around. The children at the party were thirsty so the girl’s mother stirred the punch. The party was under the birch and fir trees, and thirteen birds chirped a happy song.

Hurt Words
(common –ur words)

If you are hurt, have a burn, or burst blister that turns purple, go to the nurse with the fur purse. She survived someone trying to murder her so she goes to church every Thursday and Saturday. She burps and murmurs, but she never has the urge to curse during surgery.

-ir & -ur Mnemonics

More –ur Words

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More –ir Words

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Tic-Tac-Toe Spelling

Teacher gives student the paper with a blank tic-tac-toe grid

Teacher dictates words and student writes each word in a box of their own choice using SOS

When the board is filled, students or student/teacher can play game by reading the word before putting an X or O in box.
Rather than using chips to represent the Vr spelling column, the student writes the word in the proper column.

**Column Game/Dictation**

Materials:
- Game board, bingo chips/markers, game/drill cards with er, ir, ur words (words you have introduced & practiced previously), shuffled & put in a stack.
  - see mnemonic sheets for ir & ur words; er words: her, fern, germ,
    herd, nerd, jerk, perk, term, verb, clerk, perch, Bert, serve, nerve,
    over, never, after, faster, enter, fever, banker, washer

3 Column Game Rules:
- First person draws a card off the top of the stack & reads the word.
- The next person has to spell the word aloud &/or writes the word on paper, & puts a chip/marker on the appropriate box (ex: nurse = ur).
- Each person takes turns, one reading the word, & the other spelling the word.
- You can decide when the game will end
  - When have a chip in each box in the first row: er, ir, ur, ur, ur
  - When have a chip in each box in the first 2 rows, etc.
  - Or set a time limit
Other Concepts for 3-Column Game Board

> Once student(s) have memorized rules for making choices, cover up or remove second row with rules from game board.

> You can make the same type of game for:

> 1. 3 way to spell /ā/: a, ai, ay
> 2. 3 way to spell /ō/: o, oa, ow
> 3. 3 ways to spell /ī/: i, igh, y
> 4. 3 ways to spell /k/: c, k, ck (after teaching hard/soft g)
> 5. 3 ways to spell /j/: i, ge, dge (after teaching hard/soft g)
> 6. 3 ways to spell /shən/: tion, sion, cian

Syllable Column Dictation

> Materials:

> 1. Start with a list of 2-syllable words with various kinds of syllables, put each syllable on a separate card
> 2. On paper with columns, label each column with each kind of syllable you’ve taught (O, C, VCe, VV, etc.)

> Teacher dictates each syllable in random order

> Student writes each syllable using SOS and placing it in the proper column

> After dictations are completed, try to form as many words as you can from the syllables
How many words can you make?

1. relax
2. unite
3. polite
4. open
5. complete
6. invite

**Spelling 4-in-a-Row**

» Roll a die; the number on the die determines which column the player can choose a space
» Player writes the correct spelling in the blank and places her X’s or O’s on the space
» First person to get 4 in a row (horizontal, vertical, or on the diagonal) wins!
» This type of game works for any predictable spelling generalizations with 2 or more choices

- e.g., ai/ay, igh/y, oo/ow, oi/oy, ou/ow, c/k/ck, ch/cht, l/ll/g, tion/sion, cian
Spelling Game

- Games cards have words with /shan/ spelling choice missing
  - ac____
  - mis____
  - transport____
  - politi____

- This type of game works for any predictable spelling generalizations with 2 or more choices

iPad/Tablet Apps

What’s your Reason for using an app?

- Instruction
- Practice
- Calculation
- Assessment
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Instruction

- SoundLiteracy ($9.99+)
- Phonics Genius ($0.99)

Instruction

Explain Everything – make a movie to use for reading/spelling

Other similar apps are ShowMe, Educreations & Doceri
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Instruction & Practice

- Drawing/Writing
  - Drawing Pad ($1.99+)
  - Tux Painting (Free)
  - Draw-n-Show ($1.99)
  - Chalk Pad (Free)
  - Glow Coloring (Free)
- Sight Words (Alligator apps - Free)

Practice

- Sound Sorting Beginning Sounds ($0.99)
- Partners in Rhyme ($1.99)
- abc PocketPhonics ($2.99)
  - letter sounds, writing & 1st words
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Handwriting

- Letter School ($6.99)
  printing letters & numbers

- Touch and Write Cursive Letters ($2.99)

Reading

- Bob Books ($2.99)

- Decodable Early Reader PowerPoint Books (Free)
  http://wp.auburn.edu/rdggenie/home/geniebooks/bookindex/

- AppsGoneFree (especially for pre-K through 2nd)

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Assessment

- Running Record Calculator
- Stopwatch Recorder ($4.99)
- reading rate,%
- accuracy, self-correction rate,
- generates report

- Age Calculator. Net (free) - years, months, days

And When All Else Fails...
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Other Resources

- https://www.atdyslexia.com/ios-apps/
- http://www.readingrockets.org/literacyapps
- Pinterest & Searches

An old Chinese proverb states,

"Tell me and I'll forget; show me and I may remember; involve me and I'll understand."

Thank you!

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