

Integrating Concepts of Learning, Curriculum, and Technology for Students with a Hearing Loss

Wednesday, April 22, 2009 1:45 p.m. to 2:15 p.m.

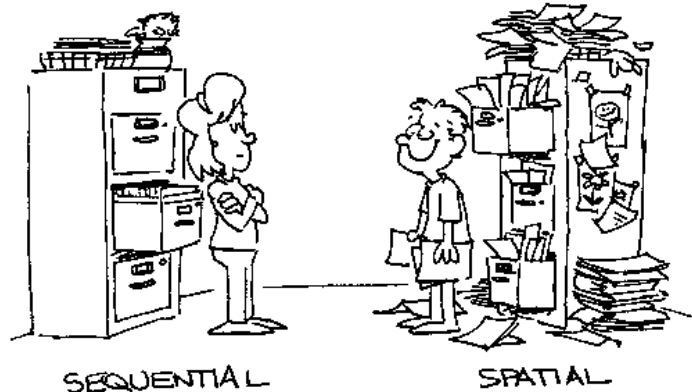
This document is online at <http://www.marybeckmann.com>

1. Learning styles – how we learn

- a. None are absolute, no one style is exclusive
 - i. Visual verbal, visual non-verbal – visual learners use their eyes to learn, aka picture learners and print learners, written learners need words instead of pictures and visual learners need pictures instead of words)
 - ii. Auditory (use hearing to learn)
 - iii. Kinesthetic learner (touch, experience)
 - iv. Tactile learner (learns best by touching, feeling)
- b. Surveys to determine learning style
 - i. <http://www.vark-learn.com/english/page.asp?p=questionnaire>
 - ii. http://www.metamath.com/multiple/multiple_choice_questions.html

2. Concepts of learning – how we absorb material

- a. Visual Spatial - right hemisphere, thinks in pictures rather than words to learn, imaginative, difficult time repeating instructions, they put things together in unique ways, they need to understand **the big picture** and **see an end product, process without understanding**, need **more time** to process than visual auditory sequential learners, **despise routine and repetitive tasks**, these learners don't know how they got to the finished project or goal
- b. Auditory Sequential - left hemisphere, analytical, **think with words**, not pictures, the majority of learners are auditory sequential, linear – step by step, learn well with **instructions**, relates well to **time**, follows **oral directions**, can **repeat instructions**



- c. A quiz to determine concept of learning
http://www.ucanlearn.net/more_articles.php?ID=18

- Do you think mainly in pictures instead of words?
- Do you know things without being able to explain how or why?
- Do you solve problems in unusual ways?

- Do you have a vivid imagination?
- Do you remember what you see and forget what you hear?
- Are you terrible at spelling?
- Can you visualize objects from different perspectives?
- Are you organizationally impaired?
- Do you often lose track of time?
- Would you rather read a map than ask for a verbal direction?
- Do you remember how to get to places you only visited once?
- Is your handwriting slow and is it difficult for others to read?
- Can you feel what others are feeling?
- Are you musically, artistically or mechanically inclined?
- Do you know more than others think you know?
- Do you hate speaking in front of groups?
- Did you feel smarter as you got older?
- Are you addicted to your computer?

Answering yes to 10 of the above questions means the person is likely to be a visual-spatial learner. From Linda Silverman, in her book *Upside-Down Brilliance*

http://www.ucanlearn.net/more_articles.php?ID=18

3. It **would** be overwhelming for a teacher to attend to every individual student learning style - it would involve adapting text books, the school day, methods of teaching, tests, quizzes, lectures, methods of delivery, activities, projects, etc.

But it **would not be impossible or overwhelming** for teachers to accommodate two concepts of learning.

4. **Look at the highlighted words in item #2 above.**

In a technology class we give instructions, a time frame, ask students to repeat directions. The general educational world does so as well - the majority of the day is sequential "...the textbooks are sequential; the workbooks are sequential; the teaching methods are sequential; and most of the teachers are sequential learners and generally the way we teach is the way we learn best. Time is important in school - being on time, turning in work on time, finishing activities in a timely fashion, and moving on to new activities in a set schedule" In other words we accommodate mainly the sequential learner in education.

From <http://www.gifteddevelopment.com/Articles/vsl/v100.pdf>

Important to note that a special need, deaf i.e., does not dictate how the individual learns – the special need may hinder or sway one style over the other, but it does not dictate.

An article on learning styles, auditory learning style, and deaf children is at:
http://www.handsandvoices.org/articles/parent_pro_collab/V10-1_learners.htm

5. Why use technology at the elementary level?

- Technology offers differentiated instruction
- Technology gives students immediate feedback
- Technology provides hands-on manipulatives
- Students learn at their own pace when using technology
- Technology provides more avenues to learn curriculum content – CD software, Internet, i.e.
- The technology tool that a student has a chance to use and experience today, will most likely be necessary and at times mandatory in their future
- Every day is a new adventure when using technology and technology is fun
- Technology can simulate real-life experiences
- Many technology tools work in conjunction with the constructivism theory – build new knowledge from previous knowledge

6. Look at item #10 below. Notice that using pictures or graphs would be considered a **preferred** method of learning for visual spatial learners. Using pictures and graphs may be somewhat bothersome for other learners, but not distracting.

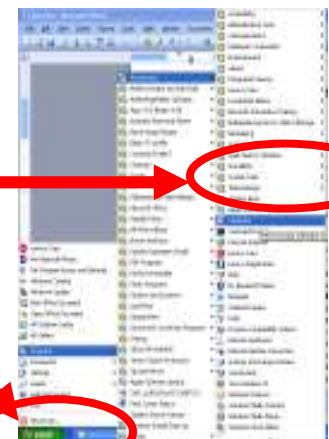
So to accommodate all learners in a technology class, and adapt curriculum and technology, incorporate pictures and graphs as well as written content whenever possible. It makes teaching and learning fun, integrates curriculum, and although not centered on learning styles, it does include some learning styles naturally.

7. A lesson in keyboarding that accommodates concepts of learning: BBC website
<http://www.bbc.co.uk/schools/typing/>

- Click on non-flash version - words only
- Click on worksheets for a handout
- Click on lesson 1 for auditory and picture version

8. Lesson in Using the Keyboard as a Calculator

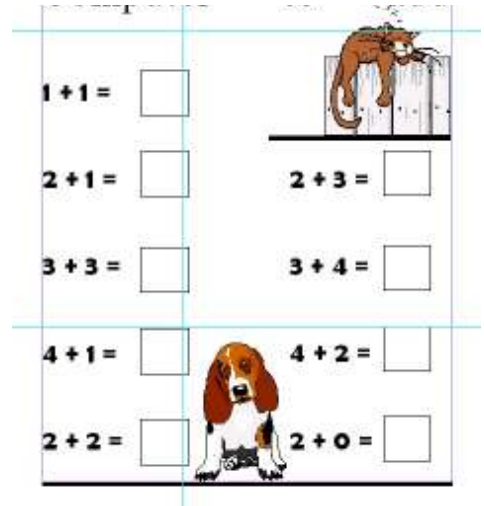
1. Go to 'Start' 'Programs' 'Accessories'
2. select 'Calculator'



3. When the **'Calculator'** opens look at the number keys on your keyboard that are in a group on the right side - these are called the **'keypad'**
4. Tap the number key to make sure it is locked in place – this allows you to use the number key pad – ask your teacher to help you if you cannot find this key
5. Type **1, 2, 3, 4, 5, 6, 7, 8, 9** using the numbers keys in this area

Directions would continue from here and include division, subtraction, and multiplication

Handouts would be given to each student, similar to the exercise sheet at the right and item #9 below. Content should be more advanced for older students of course - eliminate 'cute' pictures, and include subtraction, multiplication, and division exercises.



6. ARTICLES:

- If children have difficulty with sequential tasks but grasp complex concepts, give them advanced work or let them work ahead – handouts work well *From* <http://www.gifteddevelopment.com/Articles/vsl/v100.pdf>
- An article that provides learning tricks, strategies, and techniques for the visual spatial learner: <http://www.visualspatial.org/Articles/memorize.pdf>

9. Using Your Keyboard Keypad and Calculator

1. Go to **'Start'** **'Programs'** **'Accessories'** and select **'Calculator'**

2. When the **'Calculator'** opens look at the number keys on your keyboard that are in a group on the right side - these are called the **'keypad'**

3. Type **1, 2, 3, 4, 5, 6, 7, 8, 9** using the numbers in this area

4. Use your mouse to click the **'C'** key to clear the numbers

5. Locate the **'+'** key on your keyboard, it is to the right of the number **'9'** on your number keypad

6. Use your fingers and the number keys on your keyboard and type **'5'** then the **'+'** sign then **'5'** again and then hit **'enter'** on your keypad

7. You should see the number **'10'** in the calculator window

8. Click the **'C'** to clear **OR** hold your **'shift'** key down and click on **'del'** on your keypad (will not work if you hit the **'del'** key that is on your

keyboard - the 'del' key is below the number '3' on your keypad

9. Look for the '/' sign above the number '8' - this is the divide key

10. Use your fingers and the number keys on your keyboard and type '8' then the '/' key then '2' and hit 'enter' on your keypad

11. You should see the number '4' in the calculator window

12. Click the 'C' to clear or 'shift' and 'del' on your keypad

13. Look for the '*' sign above the number '9' - this is your multiply key

14. Use your fingers and the number keys on your keyboard and type '4' then the '*' key then '4' again

15. You should see the number '16' in your calculator window

16. Click the 'C' to clear

17. Look for the '-' sign to the right of the '*' sign on your keypad

18. Use your fingers and the number keys on your keyboard and type '15' then the '-' key and the number '1'

19. You should see the number '14' in your calculator window

20. Click the 'C' to clear

21. Complete the following exercises (don't forget to click the 'C' key to clear between each problem:

a. $10 - 5 * 122 =$ _____

b. $99 + 1999 =$ _____

c. $8987 * 6 =$ _____

d. $55,698 / 2 =$ _____

e. $5 + 17 + 25 + 8 - 3 =$ _____

f. $25,987 * 124 =$ _____

g. $200 / 10 / 5 =$ _____

Note: *Illustrations used throughout this document are by Golon, Alexandra Shires, and B. Jones*

10.

Visual-Spatial Learner



Source: Visual Spatial Resource Center

(<https://www.education.com/partners/articles/visualspatial/>)

Topics: What are the Different Learning Styles? (<https://www.education.com/topic/different-learning-styles/>) , more... ()

The Auditory-Sequential Learner	The Visual-Spatial Learner
Thinks primarily in words	Thinks primarily in pictures
Has auditory strengths	Has visual strengths
Relates well to time	Relates well to space
Is a step-by-step learner	Is a whole-part learner
Learns by trial and error	Learns concepts all at once
Progresses sequentially from easy to difficult material	Learns complex concepts easily; Struggles with easy skills
Is an analytical thinker	Is a good synthesizer
Attends well to details	Sees the big picture; may miss details
Follows oral directions well	Reads maps well
Does well at arithmetic	Is better at math reasoning than computation
Learns phonics easily	Learns whole words easily
Can sound out spelling words	Must visualize words to spell them
Can write quickly and neatly	Much better at keyboarding than handwriting
Is well organized	Creates unique methods of organization
Can show steps of work easily	Arrives at correct solutions intuitively
Excels at rote memorization	Learns best by seeing relationships
Has good auditory short-term memory	Has good long-term visual memory

May need some repetition to reinforce learning	Learns concepts permanently; does not learn by drill and repetition
Learns well from instructions	Develops own methods of problem solving
Learns in spite of emotional reactions	Is very sensitive to teachers' attitudes
Is comfortable with one right answer	Generates unusual solutions to problems
Develops fairly evenly	Develops quite asynchronously (unevenly)
Usually maintains high grades	May have very uneven grades
Enjoys algebra and chemistry	Enjoys geometry and physics
Masters other languages in classes	Masters other languages through immersion
Is academically talented	Is creatively, technologically, mechanically, emotionally or spiritually gifted
Is an early bloomer	Is a late bloomer

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