

# THE HEALTH SCIENCE Educator

Tips, ideas and opinions for Health Science Education



February 2020

**WE'RE BACK!**



A free publication for professionals who choose to make a difference in the classroom.

*You inspire the future of healthcare!*

**Intelligence plus character-**

**That is the goal of true education.**

*Dr. Martin Luther King Jr.*

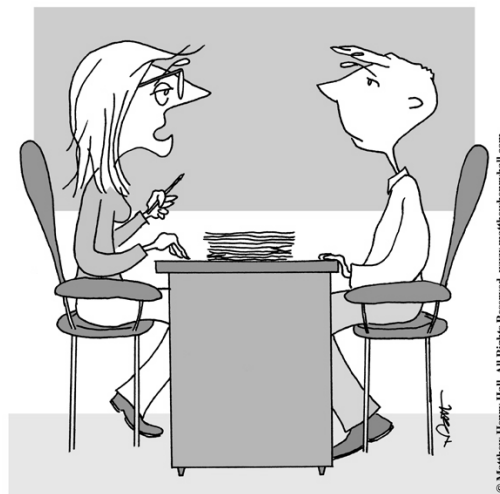
## ★ EDUCATION NEWS: **LEARNING STYLES**

For decades, educators have been told that they must adapt their teaching to the specific learning styles of individual students. Is that true? What does the research tell us?

In 2008, Harold Pashler at the University of California, San Diego, and his team set out to test the hypothesis that learners have distinct styles in which they learn best. What they found is that “at present, there is no adequate evidence base to justify incorporating learning-styles assessments into general education practice” (Pashler et al. 2008)

***While students do have preferences, attempts to adapt teaching to match learning styles has no significant impact.***

<https://journals.sagepub.com/doi/full/10.1111/j.1539-6053.2009.01038.x>



**“Kinesthetic is a learning style. Auditory and visual are learning styles. Cheating is not a learning style.”**

*What's a Health Science Teacher to do?*

**Align instruction to the intended learning outcome.** The best way to learn CPR is to practice CPR – regardless of learning preference. The only way to know if students can successfully pronounce medical terms is to listen to them pronouncing the terms. Align strategies with what you want the student to know and be able to do, and to the learner’s recent performance or experience - and not on an assessment of their learning styles.

## ★ HEALTHCARE NEWS: VALUE-BASED CARE

Are your students prepared to succeed in a value-based system?

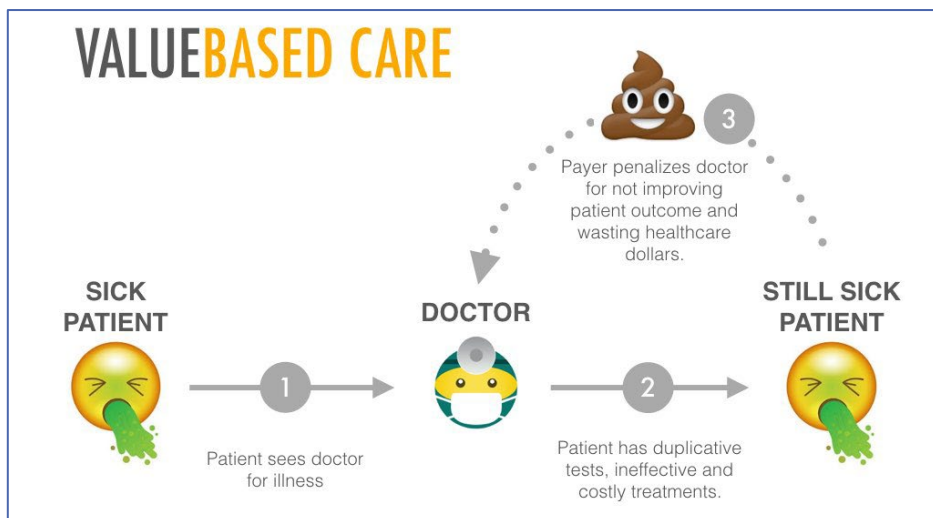
It's not an option. Not really. Today's students are entering a healthcare arena that is changing at a seemingly faster pace each passing day.

Healthcare reform legislation is raising the bar when it comes to improved quality and affordability of care. Your students will play a pivotal role in improving the quality of patient care and the patient experience.

The traditional fee-for-service payment model gives an incentive for physicians to provide more treatments because payment is dependent on the quantity of care.

A value-based payment model provides a different approach.

### QUALITY over QUANTITY



In next month's newsletter, we'll take a closer look at the role of EVERYONE in healthcare when it comes to providing value-based care.

ANSWER KEY: SUFFIX GAME

Sample	appendicitis	tonsillitis	hepatitis	-itis
1.	psychology	dermatology	physiology	-ology
2.	lymphoid	toxoid	fibroid	-oid
3.	polyuria	dysuria	hematuria	-uria
4.	alcoholism	metabolism	catabolism	-ism
5.	acidosis	tuberculosis	phagocytosis	-osis
6.	melanocyte	leukocyte	megakaryocyte	-cyte
7.	pandemic	epidemic	endemic	-demic
8.	microscope	ophthalmoscope	endoscope	-scope
9.	orthodontics	endodontics	periodontics	-dionics
10.	homothermic	hypothermic	normothermic	-thermic
11.	melanoma	hematoma	lipoma	-oma
12.	homeostasis	hemostasis	metastasis	-stasis
13.	amenorrhea	dysmenorrhea	pyorrhea	-rhea
14.	hyperglycemia	anemia	polycythemia	-emia
15.	orthopnea	dyspnea	hyperpnea	-pnea
16.	angioplasty	mammoplasty	rhinoplasty	-plasty
17.	Neuralgia	Odontalgia	Myalgia	-algia
18.	Colonoscopy	Laparoscopy	Cystoscopy	-scopy
19.	Psychogenic	Pathogenic	Spermatogenic	-genic
20.	Hemiplegia	Paraplegia	Quadriplegia	-plegia

## Playing to Learn

Students take pleasure in solving problems. When they solve a problem, their brains may reward them with a small dose of dopamine.

Students also take pleasure in competition. A chance to compete encourages extra effort and motivates the student to try harder.

### Problem-Solving = Rewarding Competition = Motivating

Most Health Science teachers agree that game-based learning strategies involving problem-solving and competition can be great learning tools. Check out these tips for increasing the opportunity for playing to learn in your classroom.



#### Tips for Teachers:

1. You can turn just about any activity into a game. Divide the class into teams. Recognize the fastest, or the team with the highest combined score, or the team that answers the most questions.
2. Make sure your game is not too easy and not too difficult. Students will only work hard if they think there is a chance for them to win. If not, they'll give up!
3. Allow students to work in teams whenever possible.
4. Focus on intrinsic rewards. Occasionally you may want to use tangible rewards, but for the most part, use praise and recognition for students who win classroom games.

#### Next Page: Suffixes: Clever Combos

Have students work in pairs. Give them 10 minutes to guess as many suffixes as they can. Recognize the team that writes down the most correct answers.

Name \_\_\_\_\_

Date \_\_\_\_\_

# SUFFIXES: CLEVER COMBOS

Listed below are groups of three unrelated word parts. Can you find a suffix that fits after each term in the group?

Sample	<i>appendic</i>	<i>tonsill</i>	<i>hepat</i>	<i>-itis</i>
1.	psych	dermat	physi	
2.	lymph	tox	fibr	
3.	poly	dys	hemat	
4.	alcohol	metabol	catabol	
5.	acid	tubercul	phagocyt	
6.	melano	leuko	megakaryo	
7.	pan	epi	en	
8.	micro	ophthalmo	endo	
9.	ortho	endo	perio	
10.	homo	hypo	normo	
11.	melan	hemat	lip	
12.	homeo	hemo	meta	
13.	ameno	dysmeno	pyo	
14.	hyperglyc	an	polycyth	
15.	ortho	dys	hyper	
16.	angio	mammo	rhino	
17.	neur	odont	my	
18.	colono	laparo	cysto	
19.	psycho	patho	spermato	
20.	hemi	para	quadri	



## LEARNING SCIENCE

### Spacing

**Question:** Why do students seem to forget so much between the time they learn something and when final exam or credential testing comes around?

**Answer:** Because that's what the brain is wired to do. We forget information we don't need anymore. One way to signal the brain that "this information is a keeper" is with spacing.

**Question:** How does spacing work?

**Answer:** Spacing in education is when content is presented at intervals.

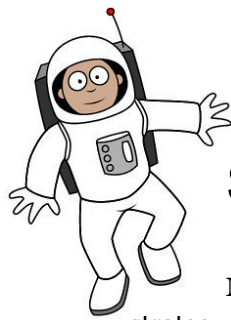
**Question:** For example?

**Answer:** Let's say you are teaching the digestive system. Rather than teach the structure on Monday, the function on Tuesday, the diseases on Wednesday...etc., MIX it up. Maybe start with a disorder – such as an ulcer. What digestive structures are involved? How does the disorder impact normal function? How is it diagnosed and treated?

Mixed up? Maybe...and it works.

**Question:** What should I tell my students?

**Answer:** Tell them to use spacing when they study. Rather than cram the night before a test, set aside 15-30 minutes every night to review. The night before the test, all it will take is another 15-30 minutes and they'll be ready to ace that test.



## SHOULD YOU SPACE OUT?

Most teachers believe that cramming for an exam is not a good strategy for learning. Cramming is an example of massed practice. It may feel productive, but the long term benefits are not there.

Compare massed practice to spaced out practice. Spaced out practice feels less productive because forgetting has begun to set in and you must work harder to recall the concepts.

Are there learning benefits to spaced out classroom instruction?

### Research Study: Microsurgery

- 38 surgical residents
- Four lessons: how to reattach tiny vessels (instruction and practice)
- ½ residents - all four lessons in a single day
- ½ residents - one week interval between each lesson



### Who did better one month after the last lesson?

The spaced lesson group significantly outperformed their colleagues in all areas:

- Elapsed time to complete surgery
- Number of hand movements
- Success at reattaching severed, pulsating aortas of live rats

*16% of the single day residents damaged the rat's vessels beyond repair!*

### Why was spaced learning and practice more effective?

- With spaced practice, relearning embeds content in long-term memory and connects it to prior learning. The process of forgetting and then relearning makes the knowledge more durable. The increased effort required to retrieve the learning after a little forgetting further strengthens the memory.
- Rapid-fire practice leans on short-term memory. As forgetting sets in, there is no opportunity to retrieve the learning and consequently, it becomes lost.

*The Health Science Educator*, published by CreativEd Services in collaboration with NCHSE, is a free monthly newsletter for health science professionals at the middle school, high school and collegiate levels.



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***We'd love to hear from you!*** Send us an email and share your experience with using the ideas in this newsletter or let us know what you would like to see in future issues.