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Quiz More, Test Less

Helen Gordon DNP, CNM Associate Professor and Success Coach NC Central University



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Objectives

At the completion of this session, participants will be able to:

- 1. Articulate the difference between formative and summative assessment as it relates to testing strategies.
- 2. Identify and implement a formative assessment strategy that can be implement in a nursing course.
- 3. Use formative assessment to determine where student gaps exist and faculty can modify and adjust teaching to build and enhance on student understanding of new knowledge.

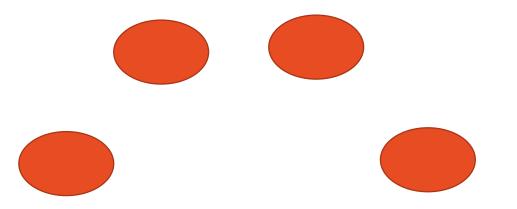


Core principals of memory

Working memory and long-term memory

Working memory-the part of memory that has to do with what you are immediately and consciously processing in your mind (Cowen, 2001).

- Working memory can only hold 4 "chunks" of information at a time. Example, think about a juggler.
- If you divert the working memory (say in attempting to multi-task, the body diverts the energy that would have been used for focus, and you forget).





The four items "stay in the air" or present because you keep adding energykept alive through "rehearsal" like reputation, writing it down, eyes closed visualizing and event.

Think of typical lecture in nursing

How many different concepts could be typically presented in one 3 hour lecture?

Case study: in one 3 hour adult health lecture (Spring 2023) on neurological disorders and nursing care, there were **8 separate topics** presented in one lecture:

- 1. Stroke
- 2. TIA
- 3. Spinal cord injuries
- 4. Seizures
- 5. Brain tumors-benign and malignant
- 6. Meningitis
- 7. Aneurysms
- 8. Cranial nerves-how would the patient present if the nerve was damaged?



In each of these areas students were expected to know:

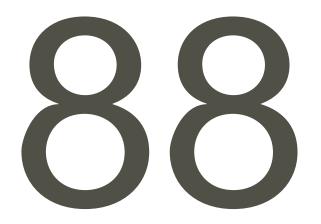
- Risk factors
- Presenting symptoms
- Pathophysiology
- How condition is assessed
- Diagnostic tools (example: CAT scan, MRI, blood test)
- Medical diagnoses and standard treatment
- Nursing care in acute phase
- Nursing care in chronic phase
- Common pharmacology in the treatment
- Patient family education
- Discharge challenges and patient referral sources



Source: Adult Health 2, lecture notes, Spring 2023, NC Central University

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The initial 8 topics now have 11 subtopics for each



discrete pieces of information to be mastered by the students



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Why as nurse educators do we do this?





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Here is the BAD news....we will never be able to teach students everything!!!

We can teach them where and how to find the answers, How to build on what they know, How to LINK information, How to use their time to learn to their maximum benefit.



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Back to student learning before we test.....



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Gordon's Rules of Teaching

- 1. If the concept is important enough to test, then there will be time spent on the material in class. END OF STORY. (I will never be called a "random tester."
- 2. I NEVER assign large amounts of reading. I do not test the concept if I have not taught it..because it was assigned does not mean you will read it or understand it.
- 3. I am the leader of this journey. I am the expert and my job it to take you to the next step of safety and competence. I embrace my role and I know I am good at it.
- 4. If you think there is too much content; then it is my job "to thin the heard" so to speak. (Think what does the practicing RN must know?)
- 5. I rarely use guest speakers; because I cannot control the material and complexity of what they present. I always stay and take notes. (I am a control freak, I make no apologies).



Rules, Part 2

6. It is also my job to teach students how to effectively utilize their time, prepare for clinical, make the most of the simulation lab and how to take test questions apart to find solutions and how to approach the material for mastery. If you need help, SPEAK UP. I flunked the mind reading course!

7. I BELIEVE in practice questions and lots of them are the major way to determine your recall and understating.

8. We are partners on this journey. I am leading you through this forest because I am the expert...but you must "saddle up and ride with me."

9. I am deeply committed to your learning, not your grades...your learning. I respect that your grades are your yardstick of mastery. Mine is: **CAN YOU RECALL and PERFORM in clinical situations after you graduate.** That said, if fall below 85% on any quiz, test, I want to see you during office hours.



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Last but not least...the is the big "momma" of my rules for me...

10. I never FLIP classrooms. I have interactive classrooms. We do a ton of fun and interactive/interesting things in the classroom.



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Students cannot yet, see the way out.



Testing



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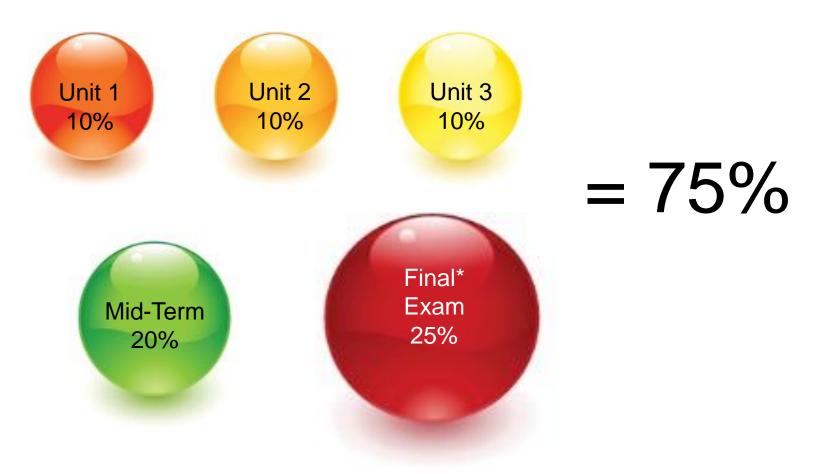
"I test to identify the gaps in learning"

(H. Gordon, 2006-2023)



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Model A: Typical course model of testing in a 12-14 week semester





*Final exam is comprehensive, might include new concepts that have not been tested before.

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We know this model

Positives for faculty

- Efficient for faculty time
- Streamlines the testing process into large chunks...with a summative final.
- We know this model. It feels familiar to us.

Negatives for students

- Saturates student with large amounts of content,
- Does not build in repetition due to the speed that content needs to be mastered
- Increases student anxiety
- Does not assure or check mastery.



Another alternative

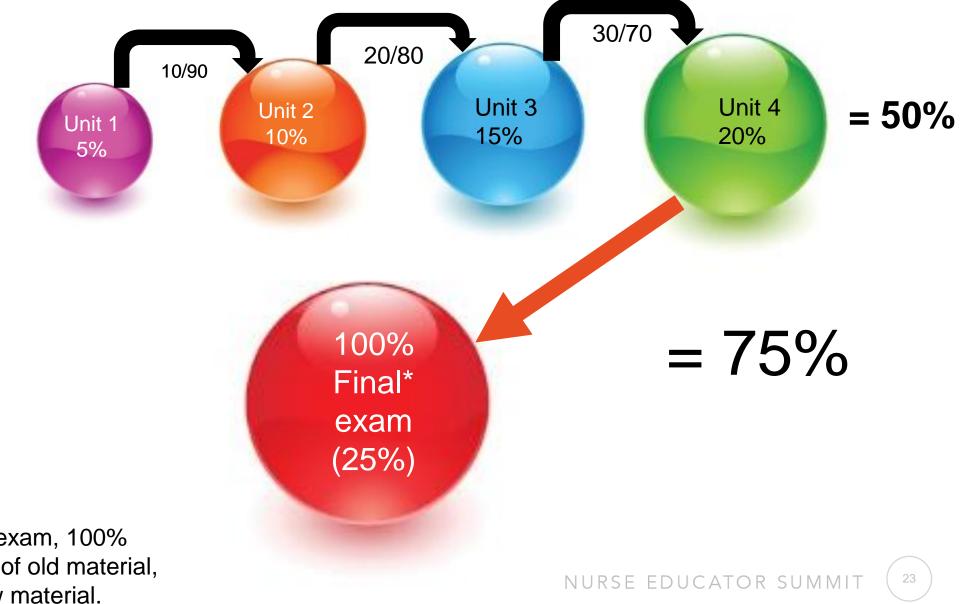




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Model B: Progressive weight + repeat of weak content areas





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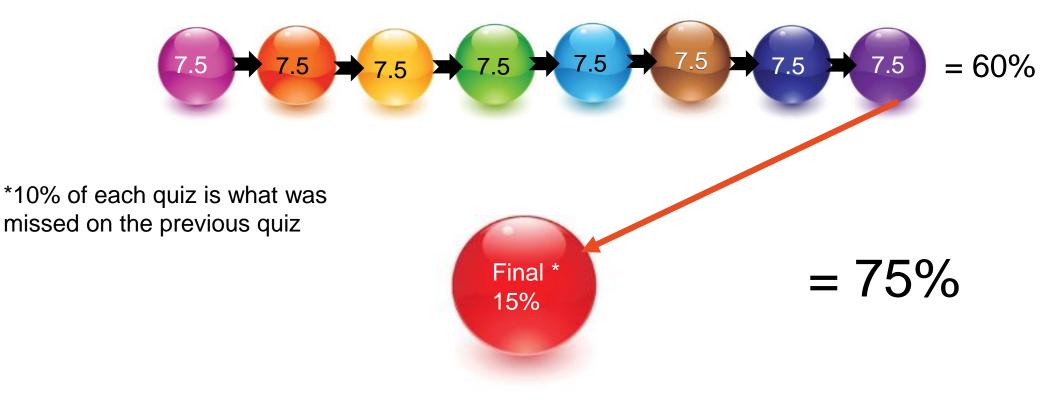
*Final exam, 100% repeat of old material, no new material.

My recipe for QUIZZING MORE and Testing less!



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Model C: "Quiz More-Test Less" Model equally weighted quizzes + low % final exam





*Final exam: No new content, a retest of concepts that were retaught or were weak.

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QMTL Model

- Students and Faculty
- Small quizzes
- Low weights
- 10-20 points each
- Previous week's content (focus in class)
- Can be done on a course management system, get analysis
- ***Pen and paper (crude analysis)
- High repetition, time for students to remediate what they missed
- Review quizzes immediately after evaluation
- Follow with more in-depth evaluation
- Reteach and repeat topics missed by cohort



Faculty advantages

- You get to know the students: how they test, strengths vs weakness in problem solving
- Allows time for remediation
- Quick feedback on what you are teaching-gaps immediately "show-up"
- Time to reteach weak topics
- Testing is formative and LOW RISK
- Good connection between course content and testing-this lowers student anxiety
- You have to THIN the content



This only works if you think the content and be committed to going DEEP on the major issues



Identify what is important from the evidence

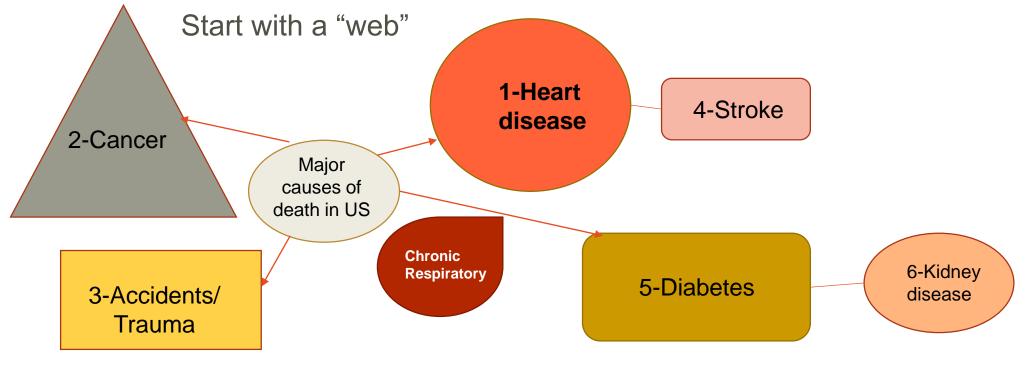
- Heart disease: 695,547
- Cancer: 605,213
- COVID-19: 416,893
- Accidents (unintentional injuries): 224,935
- Stroke (cerebrovascular diseases): 162,890
- Chronic lower respiratory diseases: 142,342
- Alzheimer's disease: 119,399
- Diabetes: 103,294
- Chronic liver disease and cirrhosis : 56,585
- Nephritis, nephrotic syndrome, and nephrosis: 54,358



Source: Center for Disease Control, 2020

1-Major issues

Rule #1: Pare down the content of the semester-teach what students will encounter in the community and clinical.





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2-Decide on 2-3 relevant issues that are connected within each major topic

Cancer: Solid tumors, blood and lymph cancers

3-Nursing relevancy

- Lifestyle issues related to the disease
- High risk factors
- Detection
- Presentation
- Assessment
- Medical treatment
- Nursing care and interventions



Counteracting overload

Have a plan for presenting new material

- gradually
- systematically
- cumulatively
- clearly
- chunked
- varyingly
- interestingly
- repeatedly

Conti, F (2016). 10 commonly made mistakes in vocabulary instruction. Retrieved from https://gianfrancoconti.wordpress.com/2016/02/06/10-commonly-made-mistakes-in-vocabulary-instruction/



Top down-big picture learning-seeing where the learning fits in

Context



Bottom up learning: Chunking-practice and repetition

PRESENTED BY ATI NURSING Source: A mind for Numbers, Oakley

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A note about reading-the illusion of competence

"Intention to learn is helpful only if it leads to the use of good learning strategies."

(Baddeley, A, et al, Memory, Psychology Press 2009)

Mental retrieval through practice over time is far superior to reading and rereading notes. (Duke, RA, et al, 2009 and Dunlosky, J, et al, 2013)

TRANSLATE......have students spend their time doing practice questions.



Strongly recommend

Coursea-free course by Barbara Oakley, PhD. LEARNING HOW TO LEARN





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Will insert



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