

Onboarding to vClinicals:

The power of repetition in learning

We've been actively working now in the virtual clinical environment for a month now as a result of the pandemic! It is amazing to consider how much we have grown and how much we have learned related to virtual simulation, teaching nursing students, and our own leaps with technology and expanding our own skill set. As summer looms and many of us find we will continue to teach clinical in this virtual environment, I thought we would discuss the power of repetition and its role in learning. We will also discuss how repetition of content, and building complexity in the content, fosters sustained learning and, in our case, enhanced clinical judgment skills.

One of the questions we often hear is about repeating **vClinical** scenarios with students in subsequent courses or assigning students to the same clients throughout a course. Remember that **vClinicals** are formative tools....the students learn as they continue to practice and gain skills in clinical judgement by repeatedly visiting the emergency department or taking care of clients again. Just consider how John Duncan's needs change from when a fundamentals student first does the scenario to when the student repeats this scenario in advanced adult health. Going from hydration assessment to advanced complications associated with hypovolemia provide the students an opportunity to build on previously mastered content and add new information to their cognitive schema!

Repetition, sometimes called mental aerobics, allows our brains to learn information in a fundamentally physiological way. Not to get too technical, but you remember that neurons transmitt messages to each other with electrical impulses. For a message to be sent to the next neuron, the impulse must exceed the cell's action potential. It is believed that attending to information three times causes the action potential to be reached—essentially allowing the message to be passed on to the next cell for interpretation and organization within the brain. So, information must be heard/seen/sensed three times to be learned. But, exposure is not enough—learners must engage in material to learn and grow.

This is where the work of Brown et al. (2014)—*Making it Stick*—come in to play. Repetition and rote memorization are not enough to foster learning. Several other components are needed to enhance learning and, in our work, clinical judgment skills:

- Learning requires effort. Students need to engage with material, work hard to learn the tough information, and develop their own learning discipline to master concepts. Easy learning is not remembered and surface learning promotes knowledge, not application. Learning takes GRIT and deep learning is fostered through repetitive practice, problem solving, and priority setting. Student need to do the **vClinicals** and find them hard and engaging to learn from them. They need to get questions wrong and then correct their actions to effectively learn. Rigor is facilitated through doing **vClinicals** repeatedly with more clients, higher acuity levels, or raising the benchmark scores required.

- Learning requires spaced retrieval. In spaced practicing, through doing the **vClinical**s over and over again or through self-quizzing, students are reminded of information, have repeated exposure to clients, and build a knowledge base through repetition and repeated engagement. This is where interleaving comes in! This term may not be familiar to you—it is essentially the interruption of forgetting with opportunities to remember. When students revisit something, it reminds them of lessons learned and builds upon this foundation with new knowledge and information. Essentially doing the same **vClinical** again interrupts forgetting and allows students to frame an old lesson within the perspective of new knowledge and increased understanding of the complexity of clients and issues. Doing **vClinical**s in later courses also allows for compare and contrast exercises. Questions for students could include:
 - How does your care of a client differ after you have learned about mental health concepts?
 - How does your care mature after learning content in more advanced courses?
 - How does/could your focus of care change as your knowledge base increases?
- Learning requires reflection. Nursing instructors have long known the value of reflection and reflective journaling for their students. Debriefing and post-conferences allow students to reflect on their practice in the **vClinical**s and learn during in-depth examination of their performance and what other actions could/should have occurred. Repeated visiting of a **vClinical** allows students to consider other students’ perspectives, their own emotional and cognitive responses to the scenarios, and how new knowledge and skills impact their answers and performance. Experts refer to this as layering of information as students build their knowledge base on a strong foundation that then becomes more intricate and sophisticated as knowledge is acquired and applied.
- Learning requires calibration. This area emphasizes that learning is fostered through the act of calibration. Students need to frequently experience tests and quizzes, whether instructor or self-generated, to learn what they don’t know. An old idiom indicates that “we tend to study what we like and what we are good at.” Faculty often lament that students “don’t know what they don’t know.” Essentially, these two comments point to the need for calibration. In calibration, students learn their knowledge threshold and identify their areas of challenge. Again, participating in **vClinical**s ensures that student “bump into” information that they don’t know and use clinical judgement skills to reason through difficult situations. By repeating scenarios, students embrace scenarios with newly acquired knowledge and realize what they didn’t know previously. This helps students recognize what they are learning and identifies topics that require further study. Faculty who provide comprehensive debriefing of scenarios can assist students to calibrate their level of knowledge and then repeating the scenario helps them put new knowledge into practice. Students often comment how much they learn doing **vClinical**s and repeating student experiences with similar scenarios can assist them in continuing to calibrate their knowledge and have a better idea of “assessing what they don’t know (yet)!”
- Learning requires a Growth Mindset. Although this topic could be written about more extensively than we have time for today, the idea of mindsets focuses on the learner and how they approach learning experiences. Consider the student that never needed to study in high school as they bring these practices to college. They had not needed to develop

study skills and often did well without studying. Perhaps this student, with a *fixed mindset* approaches learning from a memorization standpoint. All knowledge is found on the class slides and handouts. No thinking is required. Knowledge is “learned” for the next test and performance is based on this level of memorization and studying. This student may succeed in some lower level or non-nursing courses but will struggle as knowledge must be thought about, synthesized, and interpreted. Higher level cognitive skills, associated with application and analysis, will be difficult for learners with a *fixed mindset*. These learners like study guides, instructors that “teach to the test,” and those that don’t require active engagement in the classroom. In contrast, students with *growth mindsets* think about what they are learning, gain new knowledge and perspectives from clinical experiences, and adapt their studying and their learning as the demands of nursing school become more rigorous. This is one of the key assets of the **vClinical**s. Students must engage and think during these scenarios. They are not able to “click through” or just follow healthcare provider prescriptions. Students with *growth mindsets* approach virtual simulations with enthusiasm and a desire to engage in the scenario repeatedly in order to learn and grow. They realize that each time they do a **vClinical** they are expanding their knowledge base and adding to their skills in clinical judgment. You may want to present the concept of mindsets to your students in post-conference. Reinforcing that revisiting a scenario allows for growth and expansion of skills, assists students to calibrate their level of knowledge, and reinforces a *growth* versus a *fixed mindset* approach to learning.

In summary, repetition in learning, specifically repetition of the same **vClinical** scenarios and learning concepts throughout a nursing program fosters learning through deep, effortful learning, allowing for spaced practice in retrieving information (interleaving), reflection and elaboration on learning, calibration of students’ knowledge levels, and support students with *growth mindsets*.

We hope these ideas assist you in designing fun and valuable vClinical experiences. We also hope this information helps you appreciate the value of the repetition inherent of vClinicals as they foster your students’ learning. If you need more ideas, see:

Bristol, T.J. & Sherrill, K.J. (2018). *NurseThink® for nurse educators success manual*. Waconia, MN: Nurse Tim, Inc.

<https://nursetim.com/bookstore/faculty-success-bundle>

Brown, P.C., Roediger, H.L., McDaniel, M.A. (2014). *Make it stick: The science of successful learning*. Cambridge, MA: Harvard University Press.

Herrman, J.W. (2020). *Creative teaching strategies for the nurse educator*. Philadelphia, PA: FA Davis.

<https://nursetim.com/bookstore/creative-teaching-strategies>