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Educators Academy

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**WHEA
EXPLORATIONS
IN
TEACHING AND LEARNING**

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EDITOR'S NOTE

Ulemu Luhanga, MSc, MEd, PhD
Co-Director
Woodruff Health Educators Academy (WHEA)

One of the program deliverables for the WHEA Teaching Fellowship is a Small Teaching Report. Fellows are asked to pick a topic/concept that was covered during the program and use the Experiential Learning Cycle to 'test' out a small but powerful modification to their teaching design or practices. This newsletter represents a compilation of reports from the 2021-22 WHEA Teaching Fellows.



DIRECTOR'S REFLECTIONS

Taryn Taylor, MD, MEd
Co-Director
WHEA Teaching Fellowship

The WHEA Teaching Fellowship was developed to support the professional development of individuals who are passionate about teaching and learning.

While we could not have predicted it, remote, hybrid, and HyFlex teaching is here to stay. So why not optimize use of these models to provide learners with multiple forms of content delivery, learning environments, and knowledge assessment resources? This is exactly what many of our Teaching Fellows have done! Over the course of the program, Fellows have shared their experiences and strategies and we have all learned a great deal from one another. We are excited to showcase this cohort of emerging education leaders and applaud their accomplishments to date.

NOTE: Our fellows use the mnemonic "Hook 'em, Teach 'em, Assess 'em" to chunk and apply Gagne's Nine Events of Instruction model. This mnemonic was developed by Richard Ramonell, MD during his time as a learner in the EUSOM GME's Medical Education Track.



Written by Abeer Aboouyabis, MD
 Assistant Professor
 Hematology/Medical Oncology
 Emory University School of Medicine

CONTEXT:

In my didactic sessions about inpatient management of sickle cell pain crisis I target all healthcare providers (HCPs) involved in the inpatient clinical care of sickle cell disease (SCD) patients: nurses, advanced practice providers, hospitalists, fellows and residents. My didactic sessions aim to provide a standardized approach to inpatient management of sickle cell pain crisis within Emory healthcare. I usually give those sessions in classrooms or virtually.

SELECTED TEACHING & LEARNING TOPIC:

I applied Gagne's 9 stepwise approach to my didactic session.

Hook 'em, Teach 'em, Assess 'em:

Hook 'em- I added an 'Objectives Slide' in the beginning of the session. Then I started each section of inpatient management of SCD with pertinent myths trying to capture learners' attention to common pitfalls in current practices.

Teach 'em- I used PowerPoint, making an effort to keep slides concise and informative. At the beginning of each section I presented a case with multiple choice questions (MCQs) related to management options in an attempt to assess learners' foundational knowledge (from Fink's Taxonomy). Afterwards, I presented evidence-based data to facilitate the development of critical and practical thinking skills among learners that would guide them to the application of appropriate care management standards.

Assess 'em- At the end of each section we went back to the initial case presentation, answered the same MCQs and compared responses before and after the 'Teach'em' part.

LESSONS LEARNED:

- Learners focus better when the objectives are clearly outlined in the beginning
 - Repeating the objectives slide between sections also helps re-focus learners attention
- Engaging learners by asking their input on how they would approach certain clinical situations/ scenarios is very effective in providing them with self-assessment of their baseline knowledge on the topic as well as deficits which motivates them to be more engaged in the thought process that leads eventually to the learning point.

IMPLICATIONS FOR FUTURE PRACTICE:

- I intend to incorporate polling more into my teaching sessions. Poll Everywhere is a very useful method:
 - Polling during lectures to assess learners' baseline knowledge on the spot and engage them in the learning process.
 - Polling at the end to get feedback from learners to improve my teaching process
- At the end of each session I intend to add a feedback tool incorporating the 3:2:1 method (name 3 things learned from this session, 2 things you plan to implement and one thing you would like to be included/elaborated upon in future sessions)



Written by Alhamza Al-Bayati, MD
 Assistant Professor
 Department of Internal Medicine & Geriatrics
 Emory University School of Medicine

CONTEXT:

My learners are neurology residents and medical students rotating on stroke wards during their inpatient or elective neurology rotations. Typically, most teaching activities throughout inpatient neurology rotation are encountered during rounds while going over patients' clinical and imaging data as well as at bedside obtaining further history and going over pertinent physical exam findings. Historically and nationally, neurologists-in-training have not had structured neuro-intervention education during their medical school or neurology training exposure. The main objective is to shed light on neuro-interventional aspect of

neurology by introducing the learners to this field early in their neurology training and education.

SELECTED TEACHING & LEARNING TOPIC:

Using Gagne's model of Hook 'em, Teach 'em and Assess 'em, the primary aim is to augment learners knowledge of neurovascular anatomy, physiology, and pathophysiology. In addition, secondary foci included the importance of time sensitive workflow, multi-and intra-disciplinary collaboration among teams, emphasizing the importance of weighing the risks/benefits, and understanding the indications and limitations of neuro-interventional procedures. Subsequently, getting learners to consider this subspecialty as the learners determine their own career path.

On the granular level during our daily rounds, all learners were "hooked" by our in-depth analysis of all cerebrovascular cases, particularly those that warrant some sort of mechanical interventional evaluation. Learners were taught the basic anatomical application of their patients' presenting symptoms, potential underlying pathological processes along with their optimal evaluation, and finally the current guidelines on how to tackle them. After finishing bedside rounds, learners spent additional time in the cath lab going over their patients' angiographic imaging, getting to point out the pertinent findings that they learned earlier and getting introduced to the technical approach of how to acquire these images and apply applicable treatments.

LESSONS LEARNED:

It's all about first impression!
Spending extra attention to develop learners' curiosity prior to diving into the overwhelming details will elevate their interest and enhance early learning skills given their active engagement from the get go.

IMPLICATIONS FOR FUTURE PRACTICE/TEACHING TIPS

Continue to plant the seeds and assess all learner interests then further develop those with keen passion by dedicating extra time to implement more focused education. Never stop optimizing your techniques by critically investigating the feedback received from your learners or co-educators then swiftly modify your approach accordingly.



Written by Ruba Al-Ramadhani, MD
Associate Professor
Department of Neurology
Emory University School of Medicine

CONTEXT:

My learners were the pediatric neurology residents to whom I was tasked to build a clinical epilepsy rotation based on their level of training. I implemented 30-minute electroencephalogram (EEG) teaching rounds for all trainees on the inpatient neurology consult team (including pediatric neurology residents, adult neurology resident, pediatric residents, and medical students). Rounds were held both virtually and in-person given the two different locations covered by the trainees. Teaching sessions were interactive and allowed the learners to give immediate feedback and able to answer questions.

APPLYING TEACHING & LEARNING TOPIC TO YOUR CONTEXT:

Aligning learning needs and outcomes.

LESSONS LEARNED:

Technology is growing and plays a crucial role in any curriculum development and implementation. We faced challenges in choosing the right medium that can accommodate sharing EEG as well as the electronic medical record system during the educational rounds.

Building and developing a curriculum goals and objectives that can fit learners in different stages of their training can be challenging. I have tried to implement self-identification strategy where each learner was expected to bring one interesting /challenging EEG for their level of education to discuss in every teaching rounds. Learners were expected to provide feedback at the end of each teaching session which allowed modification of the objective and outcomes based on the learners needs.

IMPLICATIONS FOR FUTURE PRACTICE & TEACHING TIPS:

I plan to continue interactive teaching/learning sessions with my trainees and provide instant feedback to improve their learning experiences as well as better improve my skills as an educator.



Written by Vaidehi Avadhani, MD
 Assistant Professor
 Department of Pathology & Laboratory Medicine
 Emory University School of Medicine

CONTEXT:

With the onset of COVID-19, our regular teaching modes of one-on-one signout and in-person conferences for graduate trainees had to be drastically modified. I started looking for other methods especially online teaching methods where it could be both synchronous and non-synchronous. The CANVAS format was very suitable for transitioning from our regular modes to digital/online mode. I started designing a Cytopathology and Gastrointestinal Pathology CANVAS course for School of Medicine- intended for graduate trainees and ancillary staff involved in our laboratory.

SELECTED TEACHING & LEARNING TOPIC:

- Aligning learner needs and outcomes
 - Application of SMART Goals and Blooms Taxonomy
- Gagne’s principles of instruction design

LESSONS LEARNED:

During my in-person teaching sessions, I rarely used “defined” objectives. After getting accustomed to Bloom’s revised taxonomy, I structured my online course aligning the needs of the learner and defined the outcomes more specifically. With Gagne’s principles I was able to divide up the content and approach the construction of the course in a very methodical way giving me clarity of thought and approach.

IMPLICATIONS FOR FUTURE PRACTICE / TEACHING TIPS:

After experiencing this method of applying Bloom’s taxonomy to define learners’ objectives and outcomes and applying the Gagne’s nine steps methodically to modify my teaching method, I feel these concepts have given me tools to approach teaching in a very methodical and structured way helping to achieve better outcomes. I plan to consistently use these methods in all my education endeavors.



Written by Andrea Crowell, MD
 Assistant Professor
 Psychiatry and Behavioral Sciences
 Emory University School of Medicine

CONTEXT:

A didactic lecture given to PGY2 and PGY3 residents in psychiatry who are early in their psychotherapy training. I have given this lecture for a few years now, initially in person, then via Zoom, then in person again. Explicitly, the goal of this teaching lesson is to demonstrate through modeling and guided discussion how to think about psychotherapy material. When given in person, this learning exercise had high learner engagement and was rated highly in post-class surveys. When given via Zoom, engagement was low and was not as well rated by the residents.

SELECTED TEACHING & LEARNING TOPIC:

Gagne's Principles of Instructional Design was applied to this lesson in an effort to understand how to gain consistent positive results and high engagement with this topic. The "Hook 'em, Teach 'em, and Assess 'em" model had not been applied in the initial design and earlier deliveries of this lecture. When in person, this lesson is delivered without Powerpoint and is conducted as a semi-structured guided group discussion. Residents are given a brief clinical vignette and then offer their thoughts, feelings, and questions to the material. These reactions build upon each other as each resident contributes and as the discussion progresses, the residents recognize the emergence of a clinical theme, hypotheses about the patient's underlying difficulties, and psychotherapy treatment strategies. Given the informal discussion-based nature of the usual delivery of this lesson, learner engagement and performance was not expected to vary as much as it did when we moved to zoom-based didactics. How can this be explained?

I suspect that the biggest difference in response to this lesson when given in person vs over zoom lies in Gagne's "Hook 'em" principles. In person, the less structured format is not typical of our didactic program and is unexpected by the residents. The objectives were not stated in specific and measurable ways and prior knowledge was assumed but not formally referenced at the outset of the discussion. Despite the lack of clear and specific objectives, group discussion when in person was nevertheless successful in guiding learners to the intended objectives, likely in part due to the high engagement of the

learners. In retrospect, when all lectures (and even clinical work) are delivered via Zoom, the less-structured, discussion-based format of this lesson is much less attention-grabbing compared to in person delivery. Without high engagement from the beginning, the lack of clearly stated objectives and lack of context in terms of explicit referencing of prior knowledge increases the mental work of the learner and decreases participation, which impedes the emergence of lesson objectives during group discussion.

LESSONS LEARNED:

The physical learning environment affects the way that learners respond to presented material, even when delivery of the material is not impeded by the environment. Early learner interest and engagement from a good hook may obscure some deficits in the design of the lesson. Similarly, more intentional lesson design can help learners maintain attention in more challenging environments.

TEACHING TIP:

When the environment of a lesson changes significantly, the lesson should be redesigned with the new environment in mind, as previous strategies for attaining and maintaining learner attention may not transfer effectively to the new learning environment.



Written by Swapan Dholakia, MD
 Assistant Professor
 Neurology
 Emory University School of Medicine

CONTEXT:

I am a lecturer for a didactic course for sleep medicine fellows each year. My lecture consisted of a power point presentation but did not have a formal structure to it and only presented information on the topic to the sleep fellows.

SELECTED TEACHING & LEARNING TOPIC:

Principles of Instructional Design:
 Gagne's Nine Events of Instruction.
 This year, instead of the allocated 1 hour to deliver my lecture, I divided the talk into 2 sessions, 1 hour each. The first session was used to gain the

the learners' attention and informing them of the objectives, as well as presenting the lecture content (hook 'em and teach 'em).

The second lecture was designed in the form of a series of questions leading to further discussion, assessment of knowledge, providing feedback and enhancing retention (teach 'em and assess 'em).

LESSONS LEARNED:

This project taught me the importance of following a systematic process while designing my instruction. Gagne's events of instruction provided a solid framework upon which I was able to anchor and develop my lecture.

IMPLICATIONS FOR FUTURE PRACTICE / TEACHING TIPS:

I teach a diverse group of learners in a formal classroom setting as well as bedside teaching in my clinics. In the future, I plan on applying Gagne's events of instruction in both these settings.



Written by Michael Fiedorek MD
 Assistant Professor
 Emory University School of Medicine
 Anesthesiology

CONTEXT:

I am teaching four pediatric anesthesiology fellows point-of-care ultrasound (POCUS) as part of their pediatric anesthesiology training experience. The setting is multifaceted and includes classroom, simulation lab, and clinical learning.

SELECTED TEACHING & LEARNING TOPIC:

The assessment of learners' ability to diagnose rare pathology was the focus of my experiential learning cycle. I realized that the current practice of teaching from stock images of rare pathology only allowed for assessment

of the learner's ability to recognize those or similar stock images. This practice severely limited our ability to assess the learner's competence to make clinically accurate point-of-care assessments as stock images are most often pristine, exaggerated examples of more subtle findings.

LESSONS LEARNED:

We thus changed our way of teaching rare pathology (by compiling a large data file of rare pathologic findings that each learner had obtained during practice scan sessions) and are now better able to assess the learners' abilities by using these images instead of stock images.

IMPLICATIONS FOR FUTURE PRACTICE

Our reflection on our assessment method unexpectedly led to a change in our teaching approach. I believe that all aspects of teaching are interrelated and greatly affect components that might not seem connected. Thus, careful reflection on one area of teaching might lead to improvements in another. With regard to assessment, the modes of material presentation may heavily influence what can be fairly expected and thus assessed.



*Written by Theresa Goodman PhD, MSN, NP-C
Program Director Primary Care Nurse
Practitioner Residency
Atlanta VA Health Care System*

CONTEXT:

As Director of the Primary Care Nurse Practitioner Program, one of my roles is to facilitate several of the didactic modules within the program. The intended learners are newly graduated Nurse Practitioners (NPs) who are in the NP residency program at Atlanta VA. This group consists of a diverse group (novice to expert nurses, dissimilar generations, and different learning needs) of adult learners. The setting was originally planned to be in a face-to-face environment, but due to unforeseen circumstances, it was a hybrid setting (instructor-virtual and residents-classroom).

SELECTED TEACHING & LEARNING TOPIC:

I applied Gagne's hook' em, teach' em, and assess' em strategies to my didactic module on "Sexually Transmitted Infections (STI) in Primary Care". The small teaching modification incorporated was a virtual game to assess for prior knowledge and improve residents' engagement. The use of virtual games have been shown to boost engagement, provide immediate feedback, and encourage emotional and social connections.

HOOK 'EM

I modified a game called 'Jeopardy' to assess STI background knowledge and engage them. This game consists of different answers and categories regarding STIs in the primary care setting. The three categories covered were 'also known as', 'what is this', and 'teach/test'. The game had five rows that ranged in points 100 -500. Although the game was similar to the television game, I created a slight change to foster collaboration and teamwork. The resident selected the category and point amount and could answer the question without help to receive all the points. If the resident were unsure, he or she could ask a classmate and that learner could share the points.

TEACH 'EM

I presented a two-hour presentation on different STIs that were common in the primary care setting. The presentation covered common STIs, assessment strategies, diagnostic tests, treatment options as well as education and planning. I also presented three case

studies that were analyzed and discussed as a group.

ASSESS 'EM

The residents completed two surveys. One survey was specific to the Jeopardy game and was completed immediately after the game ended. The survey results showed the residents' first impressions were fun, exciting, and enjoyable. They were asked to list things they liked about the use of this game. Their answers were teamwork, interactive, collaborative, and non-stressful. They were asked to list things they disliked. Their answers showed the game was too short, and one resident stated, "It was not a team approach." Everyone agreed that they would like to see more interactive games in their learning.

LESSONS LEARNED:

1. My observational learning showed that students were engaged, working together to help each other answer questions. Also, they were laughing and talking with each other.
2. The use of the virtual game enabled students to assess their knowledge deficit. This helped them engage in the presentation and find answers to the questions they missed during the game.
3. Adult Learners would love to see more interactive games in their learning environment.

IMPLICATIONS FOR FUTURE PRACTICE

I recommend the use of interactive games with multigenerational adults, to enhance learning, foster engagement, and build effective teams. Although developing the game may be time consuming and challenging, the outcome is well worth the effort. With few or no modifications, the game can be used with other cohorts. We owe it to our learners to ensure they are receiving the best training possible and to reach all level of learners. My teaching tip is, explore beyond your comfort zone.



Written by J. Sonya Haw, MD
 Assistant Professor of Medicine
 Emory University School of Medicine

CONTEXT:

Learners: Internal Medicine and Family Medicine residents (PGY1-3)
 Setting: In-person classroom lectures

SELECTED TEACHING & LEARNING TOPIC:

Universal Design for Learning
 Gagne's 9 events for Instruction

Medical education on transgender care is scarce at all levels of learning and is only recently beginning to be incorporated into undergraduate medical education at. For current Internal Medicine and Family Medicine residents, however, the degree of exposure to transgender patients and

care is highly varied, unpredictable, and largely insufficient. This lack of proper education and clinical exposure exacerbates the problem of access for transgender patients seeking basic gender-affirming care. In an effort to improve knowledge in gender-affirming care in a systematic way, didactic lectures targeted to residents of all levels were added in both Internal Medicine and Family Medicine residency programs.

While the format of these lectures was a traditional in-person classroom, I was able to use the strategies of Universal Design for Learning and Gagne's 9 Events for Instruction (Hook 'em, Teach 'em, Assess 'em) to optimize learning during the short time I had to teach a very broad topic.

HOOK 'EM

To gain attention of my learners and increase in-person engagement at the beginning of the lecture, I posed an informal question asking the audience about their own prior experiences with transgender patient care. I allowed learners to further share their self-reflection of these experiences. This in-person polling and self-reflection also better informed me of the diversity of prior knowledge and experiences of the learners and allowed me to appropriately adapt my content. After providing learning objectives, I began the lecture with a case scenario with audience participation on how to address a new patient coming to clinic to start their medical transition. These strategies allowed several opportunities for the learners to engage and demonstrated the importance of a learner-centric approach.

TEACH 'EM

While using a traditional PowerPoint presentation, I was still able to leverage

several multimedia outlets. Given the importance of representation of transgender individuals' lived experiences for this type of lecture, I used quotes from social media platforms (i.e., Instagram) and direct quotes from focus group data. I also incorporated current examples of transgender individuals in popular culture as visual cues throughout the lecture.

To improve cultural competency in providing gender-affirming ways to speak with transgender patients, I gave examples of appropriate and inappropriate questions to ask transgender patients. And to allow learners to practice these skills, I asked them to demonstrate how they would address a transgender patient, practicing the actual language they would use.

To enhance comprehension and retention, I used several summary slides throughout the presentation, breaking up the lecture to core topical areas I wanted to ensure the learners were exposed to cultural competency of transgender care, basics of hormonal therapy, and current research on hormone therapy and cardiovascular and metabolic outcomes. These summary slides gave learners repetition of the big picture 'take home' points from each of these topical areas and enabled them to start the initial scaffold for their own knowledge on transgender care.

ASSESS 'EM

To create an efficient form of assessment and feedback during this lecture, I created a survey at the end of

the lecture using a QR code to be completed immediately after the lecture and during the Q&A session. I attempted to make this as short and easy as possible to maximize response rates and used a version of the "3-2-1" strategy, asking learners to list 3 things they learned, 2 things they found interesting or plan to incorporate into practice, and 1 question they had. I also assessed their degree of comfort taking care of transgender patients after this didactic lesson with a simple Likert-style question. The response rates were still poor- with less than 25% of the audience completing these surveys. However, the surveys that were completed were very rich in data. I was able to modify and improve the lecture based on these responses, using more strategies for audience engagement and providing more concrete examples (e.g., ways to use gender-neutral pronouns).

LESSONS LEARNED:

I learned that there are many creative ways to engage the audience and strategically teach for improved comprehension and retention through a traditional didactic lecture format. And doing so was easy and more enjoyable for both me and the learners. I will need to continue to work on improving evaluation and feedback rates.

IMPLICATIONS FOR FUTURE PRACTICE

I have continued to use the Universal Design for Learning and take into consideration several of Gagne's 9 Events for Instruction for other traditional lecture presentations on different topics. While it takes a bit more preparation time to incorporate these strategies, I think the end-product is more meaningful and fulfilling for both the teacher and learner.



Written by Heather Hipp, MD
 Assistant Professor
 Gynecology / Obstetrics
 Emory University School of Medicine

CONTEXT:

My learners are a mix of Gynecology and Obstetrics residents and fellows in the Reproductive Endocrinology and Infertility (REI) division. The typical learning setting is outpatient clinic, which tends to be relatively busy with scheduled patients, making it helpful to purposefully “carve” out time to teach.

SELECTED TEACHING & LEARNING TOPIC:

For the residents, their rotation on REI is usually only one block during their four years of residency. My goal was to do a better job of assessment of initial learning needs of these reproductive

endocrine topics and outcomes. I had previously tried to assess this indirectly but decided to approach it more purposefully by asking the residents what they wanted to leave their rotation with, in terms of a knowledge base, especially in regard to their future career path. I then formulated their teaching didactics during their six weeks to better target gaps in knowledge.

LESSONS LEARNED:

My notions about what residents may want to get out of their rotation wasn't exactly aligned with their thoughts. It's important to stay flexible with each trainee, especially since there are so many potential future career tracks and interests.

IMPLICATIONS FOR FUTURE PRACTICE:

I plan to continue this moving forward for the residents on their rotation, but also apply it more broadly for other mentees. It is sometimes difficult to think about a 6-month or 12-month learning plan when there is a firehose of other information and tasks, but I think it can help keep learners motivated in thinking about ultimate goals of their training to purposefully delineate knowledge gaps and learning goals



Written by Candace Hobson, MD
 Assistant Professor
 Otolaryngology
 Emory University School of Medicine

CONTEXT:

My learners are PGY1-5 otolaryngology residents. I interact with and teach residents in an outpatient otolaryngology clinic, the operating room and in a classroom setting.

SELECTED TEACHING & LEARNING TOPIC:

I performed a needs assessment and applied the Hook 'Em, Teach 'Em, Assess 'Em model. I first assessed the needs of my learners (residents) based on observations of their knowledge while working with them in a clinical setting. Based on this, I designed a lecture using the hook 'em, teach 'em, assess 'em approach. In order to hook

the residents in my lecture, I utilized Poll Everywhere to generate interest and discussion about the topic at hand. By using Poll Everywhere, I engaged the residents early in the lecture, allowing all residents to participate without singling out a particular resident or making anyone feel uncomfortable about not knowing an answer. During the teach 'em portion of the lecture, I presented the topics using PowerPoint format, keeping the slides concise, and continuing to engage the residents with discussion and a mid-lecture poll. I've previously presented cases or multiple choice questions at the end of a lecture, but have found these to be a bit too easy for most of the residents. In the clinical setting, however, residents seem to have a bit more trouble with this particular topic. I hope that I've presented the topic in a way this year that the residents are able to apply this classroom knowledge to the clinical setting.

LESSONS LEARNED:

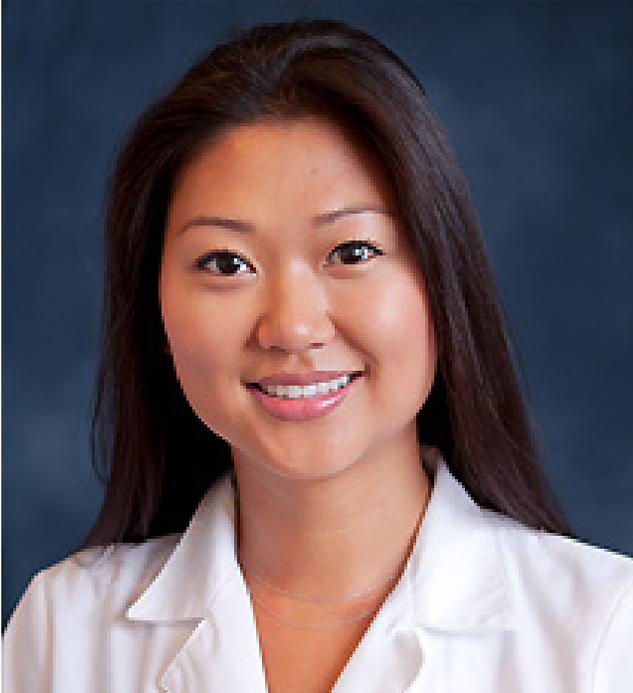
Integrating technology and polling helps to engage the entire classroom, not just a few learners.

IMPLICATIONS FOR FUTURE PRACTICE:

I will continue to use polling or other interactive tools when teaching in a classroom (or Zoom) setting. I would like to choose a different way to assess learning – perhaps small group discussions or debriefing by having the residents summarize the main points of the lecture.

TEACHING TIPS:

Engage the learner throughout the lecture with discussion, polling or other interactive approaches. Break the topic down into bite-size pieces. Sprinkle “hooks” throughout the lecture to maintain the learners’ interest.



Written by *H. Joon Kim, MD*
Associate Professor
Ophthalmology
Emory University School of Medicine

CONTEXT:

Learners: PGY2-4 ophthalmology residents
Setting: In-person injectables training

SELECTED TEACHING & LEARNING TOPIC:

Background:
During their residency, ophthalmology residents are trained to perform aesthetic injections of neurotoxin (e.g. Botox) and fillers (e.g. Juvederm, Restylane). In the past, this has been done annually in a single hands-on skills session for all 18 residents with 3 instructors. With each resident injecting 2-3 patients per session, this

resulted in 3 instructors helping to perform injections on 40-45 patients. Additionally, there was lack of interest from many of the residents and this skill was not prioritized in the overall curriculum. Hence, the lack of dedicated time usually led to the skills training occurring after-hours, often ending around 10-11 pm. This scenario presented obvious barriers to both teaching and learning, including:

- Inappropriate teacher-to-student ratio
- Lack of foundational knowledge going into the skills session
- Inadequate time
 - Inability to individualize teaching to different PGY levels
 - Lack of adequate supervision during the injection
 - Unable to give constructive feedback
 - Feeling overwhelmed (by the teachers and the learners)
- Loss of interest in the learner during downtime
- Lack of rapport between the residents and the patients
- Fatigue

As a result, I revamped the entire program by incorporating the **7 principles of teaching and learning**.

1. **Prior knowledge:** I first gave the residents an opportunity to showcase their existing knowledge and attitude towards cosmetic procedures by having them present a sample case – either a family member or a celebrity and their treatment plan. Given that cosmetic procedures can sometimes be trivialized and considered frivolous by the residents, it was important to understand their mindset regarding this topic to align our goals and agree on the significance of this in their training.
2. **Concept map:** Immediately following the case presentations, a formal lecture on the fundamental elements of neurotoxins and

fillers was given. Various injection techniques and patterns were also illustrated. The residents then observed my technique in the clinical setting.

3. **Motivation:** A discussion regarding the applicability of this topic to every resident was included into the lecture. Since no one is spared from the process of aging (!), methods of rejuvenation are certainly of interest to most people, at least in theory, if not in practice.

4. **Mastery:** The hands-on skills session was changed to one-on-one during their rotation on our service and the residents chose their patients (often a spouse or friend). Peyton's 4 steps of demonstration, deconstruction, comprehension and execution were incorporated into each session.

5. **Practice:** Throughout their month-long rotation, the residents could schedule these one-on-one skills sessions and received feedback throughout. Every resident gained comfort and showed improvement in their skills.

6. **Teaching-Learning environment:** Changing the format to a one-on-one session and being able to tailor to their level of training was key in keeping them engaged and the sessions being successful. Also, being able to practice multiple times during the month made them much more comfortable with the injections. Lastly, being able to choose their patients and having someone they trusted also created a safe space for them to practice.

7. **Self-directed learning:** The residents are encouraged to continue performing these injections in the resident-run

clinics at Grady and hopefully, will incorporate it into their practice where applicable!

LESSONS LEARNED:

I think this really emphasized what most of us already know - It's not just what you're teaching, but how you teach it is just as important!

IMPLICATIONS FOR FUTURE PRACTICE:

I believe applying these 7 principles of teaching and learning to any curriculum will lead to a successful outcome. I think many of us already utilize these principles, but seeing them outlined into actionable items certainly facilitate their use.

TEACHING TIPS:

Foremost, I think understanding (and redirecting when necessary) the learner's frame of mind and viewpoint regarding certain topics are important in aligning goals and expectations. It is much easier to teach when the students are motivated to learn.



Written by Deepika Koganti, MD
 Assistant Professor of Surgery
 Emory University School of Medicine

CONTEXT:

My learners are third year medical students who are starting their surgery rotations. Depending on the time of year, the rotation may be their first experience in a clinical setting or their first exposure to a surgical field. I give them a lecture each rotation that focuses on certain diagnoses, work-up, and basic management of surgical topics. At the end of the rotation, I am also responsible for giving oral exams to the students as well. Both the lecture and exams are done virtually through Zoom.

SELECTED TEACHING & LEARNING TOPIC:

I applied Gagne's 9 Events to my lecture. For the "Hook 'em," I discussed that this session will focus on

diagnoses that they will see throughout their surgery rotation, and they need to be able to manage them no matter what specialty they decide on. Moreover, this information will also show up on their exam! For the "Teach 'em," I used case scenarios to teach them the thought process of working up a patient and how to come up with differential diagnoses instead of a lecture format. I did the "Assess 'em" portion briefly during the lecture but also at the end of the rotation during the oral exams.

LESSONS LEARNED:

I learned that teaching virtually can be very challenging. Doing the case-based teaching requires a significant amount of participation. I found that getting the students to answer questions so that I can understand their thought process could be difficult at times and made me want to revert more to lecture-based teaching than cases. However, I did find that students having their videos on made them much more interactive. Also, when one student asked a question, other ones tended to speak up as well.

IMPLICATIONS FOR FUTURE PRACTICE:

In the past, my sessions had been lectures, and I spoke the entire time. While the case-based session is more challenging, especially virtually, I found that students had significantly more positive feedback and even reached out to see if they could do more case sessions with me. It was helpful to let the students know that the cases I was presenting and questions I was asking them to answer are clinically relevant but also something to know for their oral exams (which always motivates students!). Overall, I think both the students and myself enjoy the case-based learning much more. However, I still need to work on more strategies to get all of the students actively involved in the virtual classroom.



*Written by Jimi Malik, MD
Assistant Professor
Family & Preventive Medicine
Emory University School of Medicine*

CONTEXT:

The target audience for the learning sessions done this year were ICU fellows and residents across various specialties (surgery, neuro, anesthesiology, and internal medicine)

SELECTED TEACHING & LEARNING TOPIC:

The learning was focused on how to handle questions or statements that seem “impossible” or unanswerable. Teaching was based on Gagne’s model of instructional design (hook ’em, teach ’em, assess ’em). First, we would role-play an impossible statement elicited earlier from the group (hook). Next, we

would then dissect the interaction as a group and discuss strategies to facilitate these statements (teach). Finally, we would role-play another impossible statement from the group, followed by a group discussion of strategies used (assess).

LESSONS LEARNED:

The most obvious realization was that the hour goes very fast! After discussing further with learners and faculty, the idea of breaking the teaching topic up over 2-3 sessions during the year seemed like a nice way to address the issue. Another challenge that has come up is balancing the in-person learners with virtual learners. Keeping both sides engaged and part of the conversation, as well as ensuring both sides can participate in role-play is key. It certainly allows me to sharpen my skills on being a good facilitator!

IMPLICATIONS FOR FUTURE PRACTICE:

By eliciting formal, documented pre and post feedback from the learners, we can fine-tune the lectures and look for common themes that may help drive future learning topics. If other faculty were teaching these sessions, the facilitation of the lectures would need to be simple and minimalistic to allow for a nice balance of autonomy and standardization. Finally, there is potential for implementing this learning experience to medical students who participate on a one-week rotation in Palliative Care. The learning can be delivered not only by faculty, but by Palliative Care fellows as well, allowing further learning at all levels through leading the facilitation.



Written by Sarah Markley Webster, MD
 Assistant Professor
 Emory University School of Medicine

CONTEXT:

As part of the Internal Medicine rotation for third year medical students, the medical students and I sit down twice weekly for “didactics” or teaching sessions on topics they will not otherwise have during their dedicated formal teaching afternoons at the medical school. These sessions are held as a small group with Emory 3rd year medical students, plus any Morehouse medical students or Emory PA students who would also like to join. They take place in one of the conference rooms, usually round table style, and are meant to be a low-stress environment, where students can ask questions that they might not otherwise feel comfortable asking their teams or attendings. At the

first session, students are provided a list of topics that they can rank in order of preference (and blank spaces to add topics if so desired). Historically, we have reviewed these topics using a handout and interactive discussion involving formulating a differential diagnosis and appropriate treatment modalities for these topics.

SELECTED TEACHING & LEARNING TOPIC:

I applied the Strategies for Enhancing Teaching and Learning to change the didactic from passive learning (ie. talking AT the students) to active learning (involving the students in the teaching). I used particularly the “Hook ‘em, Teach ‘em, Assess ‘em” strategy.

After students ranked their topics, they were instructed to bring to the next session a patient with the topic we were going to discuss (in this case, inpatient diabetes). The hope was that using a real patient they were caring for would serve as the “hook” to get them engaged with this topic. During the session, we then pulled up the patient’s chart, while the student gave us a brief overview of the patient’s past medical history and reason for admission. We then broke down the patient’s history with regards to diabetes further, such as “He said he has Type 2 Diabetes, diagnosed at age 25 and he’s a thin guy, what kinds of things are you thinking about when you hear this?” Using their specific patients significantly increased the engagement of the students and promoted asking questions that they had been too hesitant to ask their teams. We then assessed their knowledge by reviewing other cases of patients with diabetes to see how the students thought about the cases and developed plans.

LESSONS LEARNED:

The biggest thing I learned was that this method of teaching takes longer than the standard one-hour didactic. With the one-hour didactic taught at the students, the instructor is in control of the overall flow and speed of the session. With these interactive sessions, the students, and also the cases they brought, control the pace – easier patients make for a faster session, but more complex patients can lead to diving deep into diabetes care and management and ultimately resulted in different groups of students getting different knowledge about diabetes, but knowledge that was more geared towards what they wanted to know AND what they needed to know for their patients. However, the students were significantly more engaged and significantly more enthusiastic about this type of teaching, with many of them asking to continue the session at the next didactic (which had previously never been requested!).

IMPLICATIONS FOR FUTURE PRACTICE

Having patient cases that review the topics you want to review could be useful, but negates the enthusiasm and engagement that the students have in bringing their own patients. Perhaps at the beginning of each session, polling the learners to see if there are particular areas of diabetes they want to focus on (i.e., diagnosis,

management, when to use “SSI” vs scheduled insulin, etc.) could help tailor the discussion so that it is easier to remain within the one hour time allotment. You could alternately have the students come prepared with any questions they have about the case already written out so that you can focus on ensuring that those questions are answered as part of the discussion.



Written by Meredith Maxwell, MD
 Assistant Professor
 Family & Preventive Medicine
 Emory University School of Medicine

CONTEXT:

My intended learners will be Emory Palliative Care and Hospice fellows. For this project, I anticipate the learning setting will be largely virtual and asynchronous.

SELECTED TEACHING & LEARNING TOPIC:

I am applying the theory of backwards design in creating an outpatient palliative care curriculum. Fellowship programs like ours follow guidance from the ACGME in terms of the knowledge and skills fellows should master by the end of their training. Learning outcomes specific to the

practice of outpatient palliative care have not yet been defined. I used backwards design in my project by first focusing on what these learning outcomes should be. I reflected on my own experience as an attending fresh out of fellowship and those of faculty in a similar position. From these reflections, I generated a list of learning outcomes using Bloom's taxonomy. To validate these outcomes, I will be sending these learning objectives for review in the form of a survey. The survey will be sent to faculty in our Palliative Care Center in addition to those at other teaching institutions. My plan is to prioritize the learning outcomes according to the feedback collected from my survey.

LESSONS LEARNED:

One of my personal objectives in creating this curriculum is to ensure it is high yield. Though I knew it was important, before this process I was not sure how I would get there. I have found that the theory of backwards design has helped me think through this problem as early on in the process as possible and thus focus my time and energy on outcomes that matter most. Time for both faculty and learners is precious, and I am grateful to have a process that maximizes efficiency for all involved parties. One example of this was a helpful suggestion from a teaching mentor of mine after sharing my list of objectives. She recommended organizing learning outcomes into logical categories, which I expect will result in a more organized and user-friendly final product.

I was surprised to find that this model also helps in obtaining feedback and buy-in from my peers early on in my project. Especially in a field whose boundaries and goals are very much still in flux, it's

important to me that the project reflects the experiences and wisdom of multiple faculty members. Though I can't guarantee it, I am hopeful also that obtaining buy-in early on may also encourage faculty to engage in both creation and use of the end product.

IMPLICATIONS FOR FUTURE PRACTICE / TEACHING TIPS:

This model has shown me a new way of looking at creation of learning materials. Previously, I had jumped into collecting and presenting information based more on the information I happen to come across than what was most important to know. I am now more thoughtful about my goals for teaching before I begin, which I think will ensure my teaching will be higher-yield. I expect to carry this process into essentially all the teaching I do for the foreseeable future. I would strongly encourage someone considering applying this model to do so without hesitation.



*Written by James McLeod, DNP, CRNA
Instructor
Nell Hodgson Woodruff School of Nursing
Emory University*

CONTEXT:

As a senior clinical instructor in the Emory University Nell Hodgson Woodruff School of Nursing, I teach courses that include advanced physiology and anesthesia pharmacology. The learners are student registered nurse anesthetists that attend class in person.

SELECTED TEACHING & LEARNING TOPICS:

- Constructive Alignment
- Backward Design
- Bloom's Taxonomy

APPLICATION:

My overarching goal was to create well-designed lectures that maximize the learning of complex material while balancing cognitive load. Using the principle of constructive alignment, I incorporated the following strategies into my advanced physiology course:

- establishing learner objectives based on Bloom's taxonomy as the initial step in planning lectures,
- developing lectures and learning activities based on the objectives,
- constructing formal assessment strategies that aligned with the objectives and learning activities, and
- creating a test bank that matched each question with its content domain, objective, and item analysis.

LESSONS LEARNED:

The class was more prepared and engaged when they had the opportunity to review the objectives and a draft presentation prior to class. The class and I would return to the objectives at the conclusion of each lecture to clarify any "muddy" points. According to feedback, the objectives helped the learners navigate large amounts of complex material and provided a guide for exam preparation.

As a new educator, I appreciated the systematic approach by starting with the objectives and working backwards to align with content and assessment. I was able to focus my preparation by identifying extraneous information that unnecessarily added to the cognitive load of the learners. I also found that exam questions performed better, and I experienced less "challenges" from the learners.

**IMPLICATIONS FOR FUTURE
PRACTICE / TEACHING TIPS:**

- Continue the process of constructive alignment and explore varying teaching and assessment strategies to push for higher levels of cognitive skills.
- Look for opportunities to align the content outline with other classes in which complementary subject matter is presented concurrently.
- Seek real time student feedback.



Written by Julie Mitchell, DO
 Assistant Professor
 Family & Preventive Medicine
 Emory University School of Medicine

CONTEXT:

Each fall, I have given a lecture to Emory's PA and Genetic Counseling students together as a large group on various topics within the ethics of palliative care and the end of life. While last year's lecture was given virtually due to the COVID19 pandemic, this year we were able to return to the classroom for a typical in person session.

SELECTED TEACHING & LEARNING TOPIC:

I aimed to incorporate Gagne's Nine Events of Instruction into my lecture this year.

Hook 'em: To integrate these elements of instructional design, I initiated each lecture sub-section topic by asking a general question related to the topic to encourage interaction and gain attention of the learners, assess learner's previous understanding or knowledge of the topic, and prepare them for the objectives of the upcoming talk. For example, at the beginning of the lecture section entitled "Physician Assisted Dying," I asked participants: "Who has thought about their potential role in PAD within the healthcare field?" "Has anyone had experience with PAD?" "Does this topic raise questions, concerns, or feelings for you?"

Teach 'em: I then presented the content while providing learning guidance by discussing case studies of PAD in the media, both past and present. In doing this, my hope was to elicit application of presented concepts to real life events that students may recall or resonate with.

Assess 'em: I then assessed performance and integration of the material by referring again to the questions I posed at the beginning of the section as a way to reframe learners' thinking on the subject: "Have your thoughts about PAD and your potential role as a healthcare professional changed in any way after hearing this information?" With this technique, I hoped to encourage critical thinking immediately following delivery of the new information as a way to improve retention by applying it to their previous knowledge.

LESSONS LEARNED:

I found that this approach greatly improved participation during the lecture. It also helped me to assess understanding of the material in real time as students responded

to follow up questions with a new outlook after learning the new information

IMPLICATIONS FOR FUTURE PRACTICE / TEACHING TIPS:

I do plan to apply this framework to all lectures I give in the future – it is an easy way to ensure content is delivered effectively. By using a similar technique for initial engagement (hook ‘em) and assessment (assess ‘em), there was some bias created, as those who responded tended to be the same people. If I had used different methods for initial engagement and assessment, I may have captured a wider audience by engaging different learning styles. This is something I will keep in mind for future use.

While I think many people follow these general principles without realizing it, I strongly feel that intentional application of Gagne’s steps helped me to better understand my own teaching style. I recommend other instructors consider applying this framework to their context to improve their instruction as it did mine.



*Written by Yolaine Nozile, RN, MSN
Clinical Instructor
Nell Hodgson Woodruff School of Nursing,
Emory University and Georgia Baptiste School
of Nursing, Mercer University*

CONTEXT:

I am the clinical instructor at Emory University Nell Hodgson Woodruff School of Nursing and Mercer University, Georgia Baptiste School of Nursing. The learners are Accelerated Bachelor Student Nurse (ABSN) in their 2nd semester in the nursing program doing partial virtual clinicals. The ABSN is an accelerated one-year nursing program for individuals who already have a bachelor's degree or higher in something else. The goal is to assess and arrange high-quality, inventive, and appealing virtual sessions.

SELECTED TEACHING & LEARNING TOPIC:

My goal was to apply teaching strategies to meet the diverse learning needs of students. I incorporated Gagné's nine events of instruction in conjunction with Bloom's Revised Taxonomy to design. In Robert Gagné's concept, my focus was on using "Assess 'em" and "Teach 'em" to help students understand various concepts. I informed students of the objectives and outcomes to help them know what they will learn during the session and to meet their learning needs. The style of instruction I did was virtual teaching; utilizing zoom to create small group discussions, videos, concept MAP, and case scenarios to engage the students.

LESSONS LEARNED:

I have learned to explore my practices and underlying benefits for the students, and I also learned the diverse ways students learn. I have learned nurturing diverse learners is a healthy learning process. This method worked well for the students and they were all willing to participate and did well in the sessions. We recorded all sessions for sharing and reflecting. Together, this combination was successful because it fit the students' learning needs, keeping them engaged at all times. I did not limit learning to the intended information but made informal, unintended learning possible. Utilizing the teaching tools helped me establish the correct approach to student education, identify the various student populations, and adapt knowledge.

IMPLICATIONS FOR FUTURE PRACTICE:

I will continue to advance my teaching style to help students accomplish their goals. I will use various visual, auditory, and kinesthetic tools in teaching. I will implement strategies to overcome barriers to motivate adult learners and give students a chance to change their mindset to receive the information correctly. I will apply knowledge and skills related to teaching, learning, and creating an optimum educational atmosphere.



Written by Jeanne Overby
Nurse Educator
Atlanta VA Health Care System

CONTEXT:

I serve as the Post Baccalaureate Registered Nurses (PB-RNR) Program Director for the Atlanta VA Health Care System. The PB-RNR Program is a 12-month structured federally funded new RN graduate nurse residency program. Nurses who participate in the PB-RNR program are in their first role as registered nurses. In the role of program director over the past five years, I have observed mostly our Millennial and now the Generation Z students become quickly disengaged when the PowerPoint and lecture teaching strategy is utilized in the face-to-face classroom setting.

SELECTED TEACHING & LEARNING TOPIC:

I will discuss why I chose the “Assess ‘em” concept of Gagne’s 9 Events of Instruction as a teaching strategy to keep this group of learners actively engaged during a face-to-face didactic session. Gagne’s “Assess’ em” is an excellent method for assessment of performance, enhancement of retention, and increased learner engagement. The concept of a “simulated escape room” was introduced as a method for assessment. The topic which I selected to utilize this concept was “Recognizing the Changing Patient Condition”. After the PowerPoint and Lecture was completed, a patient scenario was given to the nurse residents prior to the beginning of the “simulated escape room” activity. After the initial patient history and background information was given, the “simulated escape room” was initiated. The nurses had five stations which they had to navigate to ensure proper nursing care was administered to prevent further deterioration of the patient’s condition. These five stations consisted of puzzles, games and quizzes which gave the nurse residents clues as to which subsequent nursing interventions should be taken to prevent further deterioration. If the nurses did not complete each station within the designated time, their patient would unfortunately go into cardiac arrest and require advance life saving measures.

LESSONS LEARNED:

One major lesson learned was the importance of adequate space to conduct a “simulated escape room”. The use of larger size classroom is better suited for a “simulated escape room”. Unfortunately, I was limited in the amount of space available in the room which I utilized for

my simulated escape room. As a result, I had to set up different stations along a long oval shaped table. Because of lack of space, some of the suspense which is created from participating in an escape room was diminished. Despite the lack of space, I observed my nurse residents were fully engaged as they participated in this learning activity. Furthermore, based on my post activity survey results, three out of the four nurse residents strongly agreed they were more confident in their ability to recognize when their patient's condition is changing after participating in the simulated escape room activity.

IMPLICATIONS FOR FUTURE PRACTICE:

The use of the “simulated escape room” proved to be an effective tool to assess performance and to increase learner engagement. In the future, I would highly recommend utilization of this assessment tool to increase learner engagement with our Millennial and Generation Z nurses. I would also advocate for a larger space or classroom to conduct such an activity. The use of a larger space would ensure our nurses are able to fully immerse themselves in this type of learning activity. Full immersion would create a more impactful learning experience for our nurses and allow for greater comprehension.

TEACHING TIPS:

According to the most recent literature, benefits of a simulation escape room are increased confidence in independent thinking and decision-making, higher rates of retention, increased critical thinking, stronger emotional connection to the curriculum material, an opportunity for feedback and return demonstration and reinforcement of learning objectives. I strongly encourage utilization of the “simulated escape room” to assess retention of concepts and to enhance learner engagement especially for the younger generations such as the Millennials and Generation Z. This type of interactive learning activity can be easily modified based on the case scenario.



*Written by David Reinhart, DNP, MBA, RN
System Coordinator for Perioperative
Residency Program
Emory Healthcare*

CONTEXT:

The learners are BSN undergraduates at Chamberlain College School of Nursing. The setting is a combination of classroom instruction, 18 Introduction to Perioperative Nursing modules and shadowing in the perioperative setting to enhance and validate practice.

SELECTED TEACHING & LEARNING TOPIC:

When assessing the enormous plan to collaborate with Chamberlain College School of Nursing, Association of periOperative Registered Nurses (AORN), and Emory, I used Kern's six step approach of problem identification, needs assessment, goals and objectives,

education strategies, implementation and evaluation. I adopted the Gagne's 9 Events as a framework for instruction to "Hook", "Teach" and "Assess" the learners. To hook the student's interest, AORN videos on perioperative nursing were shared with the class. For example, we showed the students the AORN video, "Behind the mask".

LESSONS LEARNED:

The response to these videos were very promising. Sharing the important responsibilities of a professional OR nurse intrigued the students to ask many questions. Patient safety and the nursing process is shared in these videos validating the importance of patient advocacy during a very stressful time in their lives. BSN undergraduates utilize social media as a mainstream of communication. Sharing the videos of perioperative nursing in practice and exposing the students to the exciting procedures nursing assist with every day was a great hook. Giving the students clinical opportunities in the operating room is also a key to sparking interest.

IMPLICATIONS FOR FUTURE PRACTICE:

In the near future, creating a video of the students during their clinical exposure, types of cases they helped with and interviews of them sharing their excitement would be a strong recommendation.



Written by Sara Rizk, MD
 Assistant Residency Program Director
 Gynecology / Obstetrics
 Emory University School of Medicine

CONTEXT:

Goal: To create a concise and effective teaching curriculum for faculty. Every faculty member is expected to teach, however, there is no formal curriculum to provide faculty with the tools needed to accomplish that goal well. The idea is to create a concise curriculum that provides the faculty with tools to help them excel in teaching their topics.

SELECTED TEACHING & LEARNING TOPIC:

Gagne's teaching model encompasses the most complete application to accomplish this. I would create a teaching module that becomes a consistent part of onboarding for

faculty members. This would likely include a slide deck with embedded videos of examples of effective teaching methods. It would also include links to resources that can help increase engagement during teaching sessions such as Poll Everywhere and instructions on how to use them for those who are less familiar with these options. There are also many examples of gamifying topics that can be found on APGO; a resource that many may not have access to and can be shared via this module.

This onboarding module would need to apply to several different faculty and cover multiple topics which makes it something that would require feedback both from the learner of the module and those they are teaching. Follow up could be done 6 months into starting at Emory; that would be based on feedback from their learners. Based on that feedback they would be asked to complete a short module based on the aspect of teaching they have found themselves to be the least comfortable with or the teaching aspect in which they have received critical/negative feedback. This would also be a good time for us to receive feedback from the faculty in what may have been missing from the original module that could be improved for the future.

LESSONS TO BE LEARNED:

There is likely an advantage to doing this in a class rather than completing it as a module. This would allow for ideas and experiences to be shared which would likely make the short time available for this curriculum more impactful. A flipped classroom, combining the onboarding module and in-class time, with more self-directed learning would likely create an educational strategy that the learners are

interested in therefore promoting more engagement. This would also provide the ability to create small groups and provide them with teaching scenarios so they can implement the new approaches/resources and have a chance to discuss advantages and disadvantages of these approaches based on the scenarios they are given.

more of an impact. Implementing this is far more effective in a live classroom setting than in a module designed of slide decks and embedded videos.

IMPLICATIONS FOR FUTURE PRACTICE:

Emphasis on effective teaching could be part of the Career Conference Performance Review (CCPR). Attending a teaching refresher course (half-day) would also be an available option to all faculty with consideration of required participation every two years. The onboarding module would be updated and refreshed approximately every two years by faculty experts.

It is also important to keep in mind that most people have an idea of how they feel things should be taught which may hinder their ability to change their methods. It may be worthwhile to include some information about how different generations learn and absorb information to capture the attention of faculty members who feel more seasoned and set in their ways of approaching the learner. Understanding the audience, the needs of different generations and creating a positive environment will likely yield



Written by Mildred Sattler, DNP
 Corporate Director of Nurse Retention and
 Career Development
 Emory Healthcare

CONTEXT:

- **Learners:** All clinical nurses and nurse leaders who participate in the clinical lattice program called the PLAN (Professional Lattice Advancing Nurses) at Emory Healthcare.
- **Setting:** Zoom/Virtual/Webinars

SELECTED TEACHING & LEARNING TOPIC:

TheUsing Gagne's Model, I focused on getting the clinical nurse's attention on how much they knew and understood about the current PLAN program.

- I created PLAN objectives, including performance criteria for standard performance; advancement on the

- clinical lattice program; and established instruction on who, what, where, when, and how to develop nursing professional goals professionally.
- Created a SurveyMonkey survey to see what the learners knew and understood about the pre-existing PLAN
- Presented new material via PowerPoint during face-to-face and individual meetings on purpose; the eligibility requirements; advancement, evaluation, and maintenance processes; PLAN model clarification of roles, lattice premiums, checklist and forms, electives, and tool kits; and where to turn in professional portfolios with dates of submission and compensation.
- Individual meetings with clinical nurses facilitated nurses to recall professional projects and answer questions
- I provided feedback to assist clinical nurses with confirmation, information, and analytical recommendations.
- To assess performance, a checklist for each role was created to ensure that the clinical nurse met the criteria for the clinical lattice role.
- I monitored PLAN advancements and shared with nurse leaders and all clinical nurses to enhance retention. In addition, I created tool kits and self-learning instructions for project planning, references, and templates.

LESSONS LEARNED:

- Zoom is very efficient for both time and didactic training. At the end of the educational sessions, open question and answers forums encouraged clinical nurses to ask questions geared to the PLAN program. As a result, the nurses had a better understanding of the concepts.

- I underestimated that nurses fully understood an evidence-based practice (EBP) project, so I created an EBP step-by-step guide and toolkit. Another unexpected lesson is that every learner learns subject content differently and that educators need to be mindful of generational computer skills.
- In a post-SurveyMonkey survey, I learned that nurses had a better understanding of advancing in the PLAN. In addition, hosting the PLAN webinars and making the new improvements allowed nurses to thoroughly understand the knowledge, skills, and attitudes for professional advancement.

IMPLICATIONS FOR FUTURE PRACTICE:

- In the future, all nurses will learn about the PLAN program during their orientation
- Monthly scheduled educational webinars (Zoom) are available for all clinical nurses
- Provide education to PLAN council and host monthly meetings. Educate all PLAN council members of all new improvements.



*Written by Veketa Smith, MMSc
Assistant Professor
Family & Preventive Medicine
Emory University School of Medicine*

CONTEXT:

The learners were Physician Assistant (PA) students transitioning from didactic to clinical curriculum. Throughout the didactic training, pertinent infectious disease content was integrated within each fundamental module. As a PA practicing in the field of infectious diseases and a new Assistant Professor in the PA Program, I was tasked with creating a focused and non-graded infectious diseases review module. The teaching/learning setting took place in a hybrid classroom of in-person and live streaming virtual learners. Because it was a non-graded module, I wanted to create a way to keep the learners engaged and assess the effectiveness of the teaching activities.

SELECTED TEACHING & LEARNING TOPIC:

Using Gagne’s model of instructional design, I applied the “Hook ‘em, Teach ‘em, Assess ‘em” strategy.

Hook ‘em: I highlighted why and how achieving the learning objectives in the course was immediately beneficial to the learners with examples of relevant application. In addition, I interspersed interesting patient cases from my clinical experience throughout the lectures and activities to keep them engaged.

Teach ‘em: The content was delivered via live lecture with PowerPoint slides in combination with guided case-based group activities. Each group was given a different case to work through, but all groups were to answer the same 5 questions that touched on: differential diagnosis, additional history, pathogens, diagnostic studies, and treatment plans. Halfway through the cases, new information was presented that may alter previous answers.

Assess ‘em: Each group presented their case and answers, which kept the class engaged. Immediate feedback was provided. “Entry and exit tickets” were also incorporated into the course that focused on areas of ongoing confusion and objectives achieved during the activities of the day.

LESSONS LEARNED:

I learned that it is helpful to know your audience when planning how to keep them engaged and therefore, there should be room for personalization of the “hook ‘em” strategy. In addition, I learned the value of using multiple strategies to present information and elicit performance while also assessing beyond quizzes and exams. While initially planning, I did not expect

the amount of logistics required to make interactive activities feasible when half of the learners were participating remotely.

IMPLICATIONS FOR FUTURE PRACTICE:

In the future, I will continue to implement strategies from Gagne's instructional design model. I plan to continue to utilize interactive content delivery in combination with lecture presentations. I will also continue to use creative formative assessment tools for this module and align the objectives with the entry and exit ticket activities.

When planning interactive activities for a hybrid classroom, don't forget to factor in learner locations and technology logistics. Be open to learners using additional technology beyond Zoom to communicate with their groups in the hybrid setting. If the last couple of years has taught us anything, it is that we need to be always flexible and adaptable.



Written by Marsha Stern, MD
 Assistant Professor
 Psychiatry & Behavioral Sciences
 Emory University School of Medicine

CONTEXT:

In March 2020, The Accreditation Council for Graduate Medical Education updated the Psychiatry Milestones for residents in training. These milestones provide a framework for resident mastery of different elements of physician competence and Milestones 2.0 were implemented earlier this year. One way to evaluate residents on Milestones is through written evaluations submitted by faculty upon completion of a given rotation. Our previous evaluations outlined each of the core competencies and asked faculty to assess residents on all milestones. The milestones are arranged into levels that track from one to five, with level 1 being reflective of a novice and level 5

reflective of mastery or expert within that domain. Faculty reported that they found it difficult to assess residents on every milestone and similarly had difficulty rating interns at their appropriate level. The resident evaluations were being used to assess milestones; however, they did not always provide high quality feedback for residents.

SELECTED TEACHING & LEARNING TOPIC:

Using the characteristics of quality feedback, we sought to revamp the resident evaluations so that faculty could provide more limited feedback on those milestones they feel that they could assess on their given clinical rotation. We polled faculty in different patient care settings to gauge whether they felt comfortable evaluating each milestone. Only those competencies that more than half of the faculty said they could evaluate were included in that rotation's evaluation. This markedly limited the number of milestones that were included in each evaluation. The goal is that with more streamlined evaluations, faculty will feel more likely to complete these evaluations. The language in the evaluations was also more simplified as compared to previous evaluations.

LESSONS LEARNED:

Quantitative evaluations are necessary as they relate fulfilling requirements for resident advancement and accrediting bodies. Making evaluations applicable to different clinical sites or patient care settings can help to improve the quality and quantity of these evaluations. Quantitative feedback has limitations, however, as it doesn't address specific behaviors or provide actionable feedback. It is important

to also utilize verbal feedback or qualitative feedback and we can use different models including the ADAPT model or the R2C2 models, depending on the specific contexts.



Written by Odinae Sullivan
 Program Coordinator
 Graduate Medical Education
 Emory University School of Medicine

CONTEXT:

As a program coordinator in Emory's Graduate Medical Education (GME) Office, one of my primary responsibilities is managing and teaching the function of the residency/fellowship database system, called New Innovations. Part of that job responsibility is to teach and support Emory's Residency/ Fellowship Program Coordinators (PC) on how to use New Innovations (NI) and how to manage program prerequisites and requirements using New Innovations. I also participated in GME's Onboarding Training for new Program Coordinators. Currently, this PC Onboarding training is a 2-hour long session that covers an array of topics

including ACGME Program requirements, GME and Institutional Core responsibilities, program deadlines, GME Human Resources, and lastly a 30-minute New Innovations teaching and course training.

The learners for this Capstone Project the program coordinators of the residency and fellowships programs, and the course objective is to engage the learners in being proficient users of the residency database system (New Innovations). In the newly revised NI training sessions, GME program coordinators will be able to:

- Generate New Innovations Data,
- Configure Program Set-up,
- Create Program Evaluations,
- Run Duty Hour Reports,
- Aggregate Semi-Annual Review data for their Program Directors (PD) and Clinical Competency Committee (CCC).
- And lastly, Utilize NI modules to complete ACGME (Accreditation Council for Graduate Medical Education) program management requirements.

SELECTED TEACHING & LEARNING TOPIC:

- Backwards Design
- ADDIE Model
- Universal Learning Design

I used the Backwards Design (Wiggin & McTighe) and the ADDIE Model for this project. The Backwards Design conceptually helped in creating the mission and objectives for the revised NI training sessions. Structurally, it was important to identify the desired results of the course training and how best to assess the knowledge base of the coordinators. Next was to determine the acceptable evidence (outcome assessment) to measure the training. And finally, was planning the

learning experience and teaching materials specific to the core responsibility of program coordinators using New Innovations.

Again, to conceptualize the idea of reviving the NI training sessions, I incorporate the ADDIE model to help analyze, design, develop, implement, and evaluate the current training processes. Blending the first two steps of the Backwards Design (Goals & Objective and Outcome Assessment) with the ADDIE model's first two steps (Analysis and Design) aided in the composition of the course material and the application in the NI processes. As part of the analysis and outcome assessment, the program coordinators were given a survey to help identify insufficient areas of training and knowledge base gaps. The feedback from the survey highlighted certain modules and tasks correlating to the lack of utilization of the residency/fellowship database system (NI).

As part of my strategy to increase the teaching and learning components of the NI workshops, I implemented the pilot training course using the Universal Design for Learning (UDL) model to construct the PowerPoint presentation. The presentation contained defined objectives, testimonials, personal examples, and case scenarios. The presentation also included concepts maps, followed by step-by-step instructions on set-up and configuration. And the closing

portion of the presentation forces of process application and data integrity. Using the 3 principles of the UDL Model (Engagement, Representation, and Action & Expression) I centered the course material around the Why, What, and How of the content being shared. In the beginning portion of the presentation, I outline the reason as to why it was important to become proficient in using New Innovations. I also highlighted the benefits of using NI to align with ACGME requirements. The second portion of the presentation was set to teach the learner what were the keys modules and frequently used features in NI. It was important to present the areas of NI that program coordinators required to utilize the most. The end of the training focused on the numerous ways data can be generated, reviewed, interpreted, and shared in NI. User-guide were all shared with the learners as well as materials and resources supporting the content. Again, ensuring continuity of knowledge and application for the learners.

LESSONS LEARNED:

There were several areas of growth and opportunity outlined in the design and implementation of the first installment of our PC NI workshop series. There were more program coordinators expressing interest in the functionality of New Innovations. The post-training feedback from the coordinators was incredibly positive. Many said that they found the training helpful, informative, and detailed. Several program coordinators also reached out post workshop to schedule additional NI training as well as program training for their other end-users (program directors and residents / fellows).

A major lesson learned is, as an instructor, do not assume that learners will succeed professionally with only 30- minutes of New Innovations training. As a future practice, it would be useful to scale the knowledge level of the program coordinators to better gauge the level of proficiency of the learners. This may be helpful to create a novice and intermediate track for training. For example, a new program coordinator will have less knowledge of the fundamentals of New Innovations than a coordinator who has 2+ years of experience.

More importantly, another lesson I have gathered is that it is crucial to host training often and intentionally. Moving forward, our department has implemented quarterly PC training. This lesson has blossomed into an eminent idea of creating a Program Coordinator Professional Development (PCPD) Task Force. The PCPD Task Force's goal is to develop a comprehensive professional development platform that will support the needs, responsibilities, and functions of Emory's program & fellowship coordinators.

IMPLICATIONS FOR FUTURE PRACTICE:

There is the expectation that with each workshop/ training session there will be improvements in the design and assessment of the learners. It is important to assess and solicit

feedback after each workshop to ensure that the objectives and goal of the training is conveyed

TEACHING TIPS:

Practice the motto, "Tell me and I forget, teach me and I remember, Involve and I learn." As an instructor, I found it helpful to put myself in the position of my learners. I approached the desired outcome of the training as if you were the learner, asking myself "if I were a program coordinator, how does this apply to what I actually do?"

Also, involve your learners in the initial phase of your training. The feedback from surveying our learners proved to be beneficial to outlining the content of their training.



Written by Cynthia Thomas, MSN, RN-BC
Nurse Educator
Atlanta VA Health Care System

CONTEXT:

I am the Program Director for the RN-Transition to Practice Program, a structured 12-month nurse residency program for new graduate registered nurses. The learners are new RN graduates who are within the first year of nursing practice and are employed at the Atlanta VA Health Care System. The Nursing Education classroom is the setting for this training.

SELECTED TEACHING & LEARNING TOPIC:

To optimize the teaching experience, I incorporated the “teach’ em” and “assess’ em” aspects of Universal Design for Learning and focused on

four of Robert Gagne’s Nine Events of Instruction which are “present the content,” “provide learning guidance,” “elicit performance (practice),” and “provide feedback.” With varied learning styles and multigenerational nurse residents, my goal was to address the learning needs of the auditory, visual, and kinesthetic learners, while implementing teaching strategies that target engagement. I provided a one-hour lecture “Adult Immunizations” and included PowerPoint, group discussion, case studies, Poll Everywhere, and video. My new teaching strategy is Poll Everywhere. Additionally, I reviewed Poll Everywhere instructional videos and practiced with my colleagues to ensure a seamless delivery to the learners. Further, to ascertain a deeper understanding of the content, I incorporated knowledge check points at different intervals in the presentation and utilized Poll Everywhere. I encouraged nurse residents to elaborate on the provided responses in Poll Everywhere, as I provided corrective feedback. With Poll Everywhere, I believe that the learners were more inclined to provide more detailed responses due to anonymity of their responses and everyone’s participation. Lastly, case studies were utilized to assess their understanding of the content. After the presentation, I disseminated to the nurse residents a survey which cited whether objectives were met, effectiveness of instructor’s content delivery, and effectiveness of teaching strategies. Most of the residents strongly agreed and agreed that the content delivery was effective.

LESSONS LEARNED:

With Poll Everywhere I incorporated a teaching strategy that increased learner engagement. The group of learners are multigenerational, and I received great

survey feedback. Several of the nurse residents stated via survey that Poll Everywhere was fun and very interactive. One nurse resident commented, “It made learning about immunizations exciting and also helped me recall the information that was presented more clearly.” After witnessing the learners’ excitement, I am excited about learning and incorporating other teaching strategies that promote group discussions and critical thinking.

IMPLICATIONS FOR FUTURE PRACTICE:

I will utilize Poll Everywhere and other teaching strategies that will engage multigenerational learners. Also, to cultivate team cohesiveness, I will encourage nurse residents to assist their peers in formulating responses when their peers are meeting challenges in providing responses in class discussions and with case studies. Utilizing interactive teaching strategies can enhance the educational experience; thus, enhanced knowledge and teamwork can lead to positive patient outcomes. Lastly, with such positive feedback, I will continue using Gagne’s Nine Events of Instruction for course design and student engagement, while facilitating learning.



Written by Rana Vadlamudi, MD
 Cardiothoracic Anesthesiologist
 Emory University School of Medicine

CONTEXT:

Goal: Establishing a baseline of transesophageal echocardiography (TEE) knowledge at the start of cardiac anesthesiology fellowship. Setting: a classroom based didactic curriculum. Trainees come into fellowship with varying levels of experience and knowledge in TEE; my goal is to create an introductory TEE curriculum so all fellows can begin the year with a minimum standard of knowledge and skill.

SELECTED TEACHING & LEARNING TOPIC:

I used Kern's six step approach to identify the need for this introductory curriculum, and on further assessment and implementation of the one-hour

introductory lecture, I realized this lecture was very limited in its scope due to limitations in time, format, and ability to interact and assess each fellow individually. However, I was able to introduce important topics in TEE education: indications, safety, and review of comprehensive TEE views. This was in many ways a pilot session (although that was not the original intent) to a larger plan I hope to implement in the upcoming academic year and ultimately, that curriculum will be based on Gagne's 9 events (detailed below):.

Hook 'em

- Share a patient case where TEE expertise helped guide care/management
- Review objectives (in this case, comprehensive TEE views)
- Simple pre-test to assess each learner's level of knowledge pre-curriculum

Teach 'em

- Classroom based didactics, TEE simulator, patient cases

Assess 'em

- Go through a patient case with each fellow. First, discuss their assessment of their performance followed by constructive evaluation of their strengths and weaknesses

LESSONS LEARNED:

I learned that it is beneficial to provide this introductory curriculum prior to beginning our intensive educational curriculum. However, more time and utilizing differing educational methods (didactics, hands-on/simulation based, case based, etc.) vs classroom based only, will help to create a well-rounded introduction to TEE.

**IMPLICATIONS FOR FUTURE
PRACTICE:**

As I detailed above, my goal for the next academic year is to grow this introductory curriculum from a one hour didactic into a several hours curriculum that uses several educational methods.



Written by Cherry Wongtrakool, MD
Associate Professor of Medicine
Emory University School of Medicine

CONTEXT:

The COVID-19 pandemic forced the medical community to adjust care delivery in a rapid and immediate way in 2020. Prior to 2020, video telemedicine visits were used sparsely and with little support or education around it. With the pandemic, there was a rapid burgeoning in video telemedicine without time to educate trainees or providers on its benefits and drawbacks. Pulmonary outpatient medicine can benefit greatly from video telemedicine visits, but pulmonary fellows have not undergone formal training in telemedicine. Therefore, the goal of this project is to design a formal curriculum around using video telemedicine in pulmonary medicine. The curriculum will include discussions

on what is or is not appropriate for telemedicine, specific things to remember when conducting telemedicine visits, and specific things about documentation related to telemedicine visits. This curriculum will be delivered in an in-person classroom environment.

SELECTED TEACHING & LEARNING TOPIC:

Because the target audience for the curriculum is pulmonary fellows of different postgraduate years, there is going to be varied familiarity with video telemedicine. I plan to use the universal design for learning (UDL) framework to optimize teaching for all fellows. Although there are three components to UDL (engagement, representation, and action/expressions), I feel that learner engagement in the curriculum will be the most challenging because of the varied familiarity with telemedicine. There will be some fellows who have done 2 years of telemedicine visits and fellows who have not done any telemedicine visits in the learning group.

LESSONS LEARNED:

Active engagement seems to work best with this particular group of learners. Therefore, the tools of polling (in-person or online), discussions, and hands-on tasks are very appropriate to use to facilitate engagement. I learned how to use Poll Everywhere and have used it in a separate teaching opportunity with great results. Representation in teaching tools must also be varied to keep learners engaged. Case-based discussions are always popular and video demonstrations can also be useful in this curriculum.

IMPLICATIONS FOR FUTURE PRACTICE / TEACHING TIPS:

Every year, there will be a different group of learners who undergo this curriculum. Understanding the variation in individual knowledge around telemedicine can be helpful in refining the delivery of material during the teaching sessions. A combination of a case-based discussion with polling can be a successful approach to engage the learners and simultaneously obtain a pre-learning assessment to align the needs of the learners with the curriculum. This should subsequently lead to the desired outcome of the curriculum (better patient satisfaction and care with telemedicine visits). At the beginning of the curriculum, I plan to show a video of a telemedicine visit and poll the audience on positive things they saw in the video and things they might have done differently if they were the provider in the video. With their responses, I can identify areas that need more time and attention in the curriculum, and other areas that only need reinforcement. I can then do a similar combination of video with polling as a post-learning assessment to see if their knowledge improved after the curriculum. Because the polling questions can be changed from year to year, this approach provides the flexibility to change the learning assessment and align the curriculum to fit the needs of the group that year.