**New Trainee Orientation for the Teaching Role**

**Facilitator Guide**

**INTRODUCTION**

The purpose of this series is to help medical residents transition from their initial role as trainees to become teachers, understanding that for much of residency they are enveloping both roles at various times. This first slide set is an introduction to adult learning theories and expectations for residents as teachers. Subsequent presentations will dive deeper into specific teaching scenarios. Residents may at times be responsible for teaching more junior residents, interns, medical students, and others.

**EXPECTATIONS FOR RESIDENTS AS TEACHERS**

The most basic requirements for resident teachers are to have clear communication and a positive, professional attitude. Preparation is also a key factor. Teaching something multiple times is a great way to become more proficient in the subject matter yourself. As you become more proficient with the subject matter, your teaching will also improve. Through multiple trials and errors, you will figure out the most effective way to communicate and reach your objectives.

**IDENTIFYING THE TARGET AUDIENCE**

Who are the people you are teaching to, and what do they already know about the subject matter? What are their motivations, expectations, and prior experiences? Teaching to an off-service 4th year medical student in the spring after Match Day could be very different than teaching to a more motivated medical student in their chosen field during early-mid 4th year or late third year.

If your topic is more advanced, or you have a mix of learners at different stages, start with a brief review of the background concepts that you are going to build on. This can help the less prepared audience members catch up without any stigma. It fosters a safe and inclusive learning environment.

Aside from shared background knowledge or experiences, consider whether you can draw parallels between your topic and something even more ubiquitous, for example a comparison to something people are familiar with from their everyday lives.

Finally, prepare by creating specific, achievable objectives. For example, your lecture might be weaker or less focused if your objective is “to review treatment options for SVT” rather than “To differentiate SVT from other other tachyarrhythmias, choose a treatment path, and explain the reasoning for that modality.” Notice that in the second example, there are specific things that you want the audience to be able to do after your talk.

**CHARACTERISTICS OF EFFECTIVE TEACHERS**

For the first part of this slide (depending on audience size/arrangement), you might choose an interactive activity such as having participants submit entries into a word cloud, thinking back on teachers who have had an impact on them.

Preparation is an important part of any lesson. If you’ve never formally created a lesson plan, you might be surprised at how much work is involved. The lesson plan takes considerably more time to create than it takes to teach the lesson itself. As a general rule, you should stick to the following sections:

* Introduction: the 5 W’s: who, what, where, when, why. What are we learning today, what are the objectives, and why are we learning this? (what is the relevance to the learner)
* Development: like the body of an essay, take your main ideas one at a time and expand on them. Organization is important here. Consider these models to help organize:
  + Past to present
  + Simple to complex ideas
  + Known (familiar concept) to unknown (new/advanced but similar concept)
  + Most frequently used to least frequently used
* Conclusion: summarize what you taught, retrace main ideas that you want learners to retain. Relate the material back to the stated objectives.
  + NO NEW MATERIAL in the conclusion
* Assessment: evaluate whether the information was retained. This can be done in the form of a quiz or test, structured feedback, or informally such as question-and-answer, discussion, clinical scenario, talking through a case based on the information you presented (or running a simulation). Ensure that your assessment is objective and fair, and based on information that you actually presented.

Finally, **rehearse your lesson**. Try it out on a smaller audience, friend or family member-- even if they don’t have the background to understand the lesson. The key is to practice explaining it out loud. This will help you to understand where your organization or explanations will fall short. It will help you to iron out your transitions between sections, any diagrams you might plan on drawing, etc.

**The Learning Environment**

How you project yourself as a teacher will determine the comfort level of the learning environment. Most learners are not receptive to the traditional “pimping” style of teaching. Stumping or tripping up the learner will make them less receptive to further teaching.

Avoid these types of questions:

* + Trick or puzzle: there should be a clear point to the question. In a trick question or puzzle, there is more emphasis on the question itself than on the answer and reasoning behind it. Bewildering the learner will detract from helping them understand the process toward the correct answer.
  + Oversize: question is very broad or rambling and not focused, so the point of the question is lost. It may not meet your objective or students will not know how to answer.
  + Toss-up: There is no right or wrong answer, or there’s a 50/50 chance of one answer being right. The learner is just guessing in this scenario and there is no learning objective
  + Irrelevant: extraneous information that will not help to reinforce the learning points in your objectives

Feedback is an essential part of the teaching process. It is important for feedback to be fair and objective. Additionally, in order for feedback to be effective, it needs to be honest and timely- and in many situations should be immediate. It can be difficult to deliver constructive feedback that learners may see as negative, but it does not benefit the learner to provide false reassurance when you have identified an area for improvement. The purpose of feedback is to help the learner improve. If you have established a safe and supportive learning environment, then constructive feedback should be well received.

Consider using the Myers-Briggs Personality Type Indicator, or a similar assessment, to evaluate your own personality characteristics. This type of introspection can help you tailor your lessons or style to people whose personality traits don’t match yours.

**ADULT LEARNING THEORY**

**Definitions of learning**

Some dictionary definitions include:

* + A change in behavior as a result of experience
  + The acquisition of knowledge or skills through experience, study, or being taught

Alternatively, you can consider learning to be a path or journey that a student takes towards the acquisition of knowledge or skills. They are sometimes right (success) and sometimes wrong (failure) but either way the net direction is positive or toward some objective. Understand that a student’s failures or mistakes will guide this path just as much as their successes.

**Six Characteristics of Adult Learners (Knowles)**

* Relevancy/”need to know”
  + Learner needs a reason to “buy in” AKA they need to know why they need to learn something
  + Why is it important to them? What is in it for them?
* Self-concept
  + Adults prefer self-directed learning. Giving them control over their learning is a great way to leverage this characteristic. For example- assign online modules or reading a subject of their choice
* Role of Learner’s Experiences
  + Adult learners have more varied life experience on which to build. This can be good and bad. Good as in they have unique perspectives to view a problem, or more basis on which to build new information. This can be a detriment if they are rigid or stuck in their ways, or previously learned outdated information.
* Readiness to learn
  + Adults learn better when the training aligns with an immediate, real-time problem they want to solve.
* Orientation to learning
  + Life-centered: Adults learn better when the situation is tied to real-life scenarios or a problem that is important to them.
* Motivation
  + Learning is best accomplished when the motivation is internally-driven or intrinsic. For example, by learning this thing they will understand more about themselves or people around them, or they can use the knowledge or skill to grow professionally.

**Maslow’s Hierarchy of needs**

It isn’t necessarily important to teach this, just understand that the upper tiers might help you understand your learners’ motivation for learning. The concept of Esteem helps you to foster mutual respect for your learners and to identify what other outside factors are driving your learners motivations. Professional students like the ones you will be teaching are often driven by the top tier, Self-Actualization. They have invested significant time and finances to achieve this stage in their training. Also realize that if there are interruptions in the students’ personal lives which affect the more basic levels (family or financial stress, housing issues, mental health, etc), they may be less available/receptive to teaching.

* Self-Actualization   
  Achieving one’s full potential, creativity, morality
* Esteem  
  Respect (self and others), prestige, accomplishment
* Love and Belonging  
  Intimate relationships, friends, family
* Safety  
  Protection from harm, security of employment, resources
* Physiological  
  Air, food, water, rest

**Laws of Learning (Thorndike)**

Initially developed in 1932 with the first three laws, then three other laws/principles were developed. The law of readiness touches on concepts previously discussed, including Maslow’s hierarchy of basic needs, and Knowles characteristics of adult learning. Adults are internally motivated and the lesson needs to be applicable or relevant to them, and they must at least have basic needs satisfied in order to be prepared for a learning session.

The law of effect basically means that the strength of the learning session is improved when it is done under enjoyable conditions. Also, the more pleasure or satisfaction that the learner attains from the lesson, the stronger the session will be. When a teacher is able to show that they enjoy teaching the topic, it fosters a more positive environment for the learner. A negative or unpleasant environment will decrease the strength of the lesson.

The law of exercise tells us that the more often we use the material, the better it will be retained (much like physically exercising will make us more likely to maintain fitness). Basically exercise means practice. This law explains why spaced repetition can be an effective learning tool in medicine. Conversely, if we learn something and then never apply or use that knowledge or skill, then it will be poorly retained.

Primacy implies that the first item you are taught is more strongly recalled/retained. One idea is that when you are first learning something, you are writing over a clean slate. As time goes on and the item is repeated, you have more opportunity to transcribe the lesson into your long-term memory. If you learn something wrong at first, it might become ingrained and difficult to “unlearn.” For that reason it is important to give immediate feedback and/or intervene when a learner is struggling with a new topic or skill, rather than allowing them to fail or simply moving on.

Recency means that the LAST item learned is best retained. It also reinforces the law of exercise, where repetition of recent subject matter helps with retention.

Intensity states that the more profound or intense the material, the better it will be retained. You can also think of a scale of how engaged the learner is—they are more likely to remember information that they learned through simulating a real-life scenario, role-playing, or seeing a demonstration, rather than information that was presented to them in a slide set with no engagement.

**Levels of Learning**

The goal should be to teach toward the higher levels of Association and Correlation, however students will need the lower levels established to build on.

* Rote: Memorization, flash cards, mnemonics, etc.
* Understanding: Make sense of a concept or know something about how it works
* Association: Able to build on foundational concepts and string together related ideas
* Correlation: Ability to apply previously acquired understanding to a new situation

**MODELING PROFESSIONALISM**

Many residents will have experience in the professional world and these ideas will come naturally to them. Some may have more limited experience and not previously held professional jobs. Themes are to treat your teaching as any other professional obligation in residency; be on time, respectful, and courteous. Display empathy and extend thanks to your colleagues and learners, acknowledging the hard work that they do.

**References and Further Reading**

1. Brookfield, S.D., 1991: Understanding and Facilitating Adult Learning. San Francisco: Jossey-Bass.
2. Current Nursing. Laws of Learning (2020) <https://currentnursing.com/theory/laws_of_learning.html>
3. David C. M. Taylor & Hossam Hamdy (2013) Adult learning theories: Implications for learning and teaching in medical education: AMEE Guide No. 83, Medical Teacher, 35:11, e1561-e1572, DOI: 10.3109/0142159X.2013.828153
4. Knowles, M. S. (1980). The modern practice of adult education: From pedagogy to andragogy. New York: The Adult Education Company.
5. Thorndike, E. L., & Columbia University, Institute of Educational Research, Division of Psychology. (1932). The fundamentals of learning. Teachers College Bureau of Publications. [https://doi.org/10.1037/10976-000](https://psycnet.apa.org/doi/10.1037/10976-000)
6. United States. Flight Standards Service. (2020). *Aviation instructor's handbook*. U.S. Dept. of Transportation, Federal Aviation Administration, Flight Standards Service. <https://www.faa.gov/regulations_policies/handbooks_manuals/aviation/aviation_instructors_handbook/>