3. Adult Learning

- **Domains of Learning**
  - Cognitive
  - Affective
  - Psychomotor

- **Categories of Adult Learning Principles, AIR acronym**
  - Active Involvement
  - Individual Differences
  - Relevance and Motivation

- **Adult Learning in Action**

**Domains of Learning**

Have you ever known a nursing student like Ben, who turns in stellar performances on tests and papers, but turns into a safety hazard when poised to perform nursing interventions? Perhaps you have known a nursing student like Maria, who displays extraordinary technical skills, but when performing them with a patient, treats the patient more like a mannequin than like a person who comes complete with feelings and concerns. Or you may have known a nursing student like Debra, who is so enthusiastic about positive health practices that she is intolerant of her obese patients, and has a hard time establishing rapport.

The performances of Ben, Maria, and Debra represent imbalances in the three domains of learning: cognitive, affective, and psychomotor. The cognitive domain includes knowledge and thinking. The affective domain includes feelings, attitudes, values, and beliefs. The psychomotor domain includes technical skills. Learning in each domain is further characterized by levels of complexity. For example, the levels of the cognitive domain, in increasing order of complexity are...
knowledge, comprehension, application, analysis, synthesis, and evaluation. Sometimes the highest three levels are considered together as components of critical thinking. For more information about levels of the domains of learning, see Section 10 (Appendix IILA).

Ben is the sort of student who can give you a detailed explanation about his plan to examine the patient who presents with right ear pain. He can tell you all about the landmarks, what he expects to find, and that he anticipates that amoxicillin will be indicated. He proceeds to examine the ear, but the way he positions the otoscope allows him to view only the canal. He thinks, however, he is viewing the tympanic membrane and proclaims that his findings are normal. Your first interpretation of Ben's behavior may be that he has mastered the cognitive (knowledge and thinking) aspects of the situation, but lacks competence in the psychomotor (technical skills) aspects. But, while true for the most part, that interpretation is not complete. In addition to lack of psychomotor skill, Ben is missing some anatomical knowledge. Maybe his nervousness has clouded his recall, or interfered with his ability to act on knowledge that he does in fact possess. The point is that the three domains of learning are interrelated. A student must perform satisfactorily in all three in order to display competent performance.

In most nursing actions, we can identify all three domains of learning. For example, we usually think of cardiopulmonary resuscitation (CPR) as a psychomotor skill. Certainly, the psychomotor aspect is important, but so are cognitive aspects. And so, CPR certification includes a test of knowledge of facts and principles. The affective domain also comes into play, for example, in attitudes toward resuscitation and respect for the feelings of family members of a patient who arrests.

SOME EXAMPLES

Identify the cognitive, affective, and psychomotor aspects of the following situations. Compare your thoughts with the ideas in the Model Answers (Section 12.).

Situation: Taking a history from an elderly patient.

Cognitive Component:
Affective Component:

Psychomotor Component:

Situation: Examining a woman who is a victim of domestic violence.

Cognitive Component:

Affective Component:

Psychomotor Component:

Situation: Obtaining a history and performing a physical examination of an ill child accompanied by his mother, who is very nervous.

Cognitive Component:
Affective Component:

Psychomotor Component:

Situation: Performing an annual physical examination for an irate patient who has waited to see the APN for a longer time than she expected.

Cognitive Component:

Affective Component:

Psychomotor Component:
Situation: A patient situation you commonly encounter in your practice:

Cognitive Component:

Affective Component:

Psychomotor Component:
HOW TO ASSESS AND EVALUATE STUDENT PERFORMANCE IN THE THREE DOMAINS OF LEARNING

You use the same process both for assessing and for evaluating a student's performance, but the purposes of assessment and evaluation are different. During the student’s assignment with you, you assess the student’s performance on an ongoing basis to provide corrective feedback and determine learning needs. At the conclusion of the course, you summarize your observations of the student’s performance and judge the student's behavior using course objectives as criteria. Although the faculty member assigns the grade, the faculty member values and incorporates your observations, interpretations, and professional judgment when doing so. Try the following techniques to assess and evaluate student learning.

Cognitive: ASK QUESTIONS. The best questions are open-ended questions that ask the student, "What?" “Where?” “How?” “Who?” “When?” and sometimes, "Why?" Use "Why?" sparingly because "Why?" gives less direction and can intimidate the student. However, sometimes "Why?" is the most appropriate question. "Why?" may be your question of choice to ask the student the basis for a differential diagnosis. Alternatively, you might ask how certain findings suggest the diagnosis or which findings are most critical in differentiating one diagnosis from another.

A few examples: What else do you need to know? Where will you find the information? How does this drug affect...? How can you tell that ... is effective? In order to evaluate the answers students give to your open-ended questions, you will need to determine the essential components of an acceptable answer before you ask the question.

Affective: OBSERVE. You can explore attitudes, values, and beliefs with questions. The “HOW” of practice, however, is the evidence of affective domain mastery. When demonstrating satisfactory affective learning, a student shows respect for the values and sensitivities of others while providing competent, ethical care.

Psychomotor: OBSERVE. You can obtain some information about student performance by talking through a procedure with students and checking the results that students
obtain and document. The only way to validly assess and evaluate technical performance, however, is to watch the student perform.

**HOW TO DEVELOP THE THREE DOMAINS WITH A STUDENT**

**Cognitive:** Refer the student to resources: books, journals, video, computer-assisted instruction (CAI), Medline, and other on-line sources. What sources of information do you really use in practice? Students receive information about references and resources from faculty. Your role is to direct the student to those resources when they need more information and to introduce the student to resources that you use.

Ask questions that will lead the student to discover the information. For example, if the student is unfamiliar with the use of a particular medication, such as Procardia used as a tocolytic, ask the student what he or she knows about the classification to which the drug belongs. Then ask how this action produces tocolytic effects. If the student lacks the basic information, ask where he or she can find the information. If necessary, suggest a more appropriate resource.

Limit the amount of information that you supply. Although you act as a resource, you do not substitute for the student investigating, collecting, and interpreting information. Obviously, forcing the student to discover information is not appropriate in situations in which failure to take immediate action would jeopardize patient safety. In non-urgent situations, however, the extra time it takes for the student to discover the information is a worthwhile investment.

How can you make the time for discovery learning in your busy clinic practice? It will not be easy. It will only happen if you make the commitment to make it happen. Make a habit of incorporating discovery learning on a regular basis. For the next clinical day, you might ask the student to report to you on two articles, each of which recommends a different course of treatment for one of the patients seen today.
**Affective:** Explore through questions that elicit student's attitudes, values, and beliefs. For example, suppose that a patient who has chronic hypertension has decided that he will not take his prescribed medication because he refuses to accept the negative effects upon his sexual performance. Ask the student to think about how he or she would feel about this issue if it were affecting a sexual relationship in which he or she were involved. As a first step to fully appreciating and respecting other perspectives, help the student raise awareness of his or her own perspective.

Provide information about differing perspectives. Place the student in situations in which the student will encounter attitudes, values and beliefs that differ from his or her own. Some of these differences may reflect differing ethnic backgrounds; others may reflect differences arising from generational differences, the differing perspectives of various healthcare disciplines, or any of a host of other differences that lead to differences in attitudes, values, and beliefs.

**Psychomotor:** Practice with self-critique and preceptor's corrective feedback. Recommend that the student practice with a fellow student who has already mastered the technique.

---

**In all domains** one of the preceptor's most effective strategies is to model competent practice, allow the student to observe you in action, and point out the critical features of your practice to the student.

**An Example**

Look back at the precepting situation you identified on page 5. What are some specific methods you can use to assess and develop student learning in each of the three domains of learning? Use the format on the next page to make your notes.
Cognitive Component:

Assess by:

Develop by:

Affective Component:

Assess by:

Develop by:

Psychomotor Component:

Assess by:

Develop by:
Authorities in the field of adult learning have described numerous principles of adult learning. Selected lists of these principles appear in Section 10 (Appendix III.B). Three themes predominate in adult learning principles: active involvement, individual differences, and relevance and motivation. These themes, represented by the acronym AIR form a convenient frame of reference for applying adult learning principles to precepting.

**The AIR Themes in Adult Learning**

**Active Involvement**

Educational research has shown that as more senses are incorporated in the learning process, the learner learns more and retains more. For example:

"We remember: 10% of what we read.
20% of what we hear.
30% of what we see.
50% of what we see and hear.
80% of what we say.
90% of what we say and act."

(From Kornikau and McElroy (1975) in Pike, 1992, p. 79.)

<table>
<thead>
<tr>
<th>(From Benschofter in Pike, 1992, p.79.)</th>
<th>Recall 3 hours later</th>
<th>Recall 3 days later</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telling used alone</td>
<td>70%</td>
<td>10%</td>
</tr>
<tr>
<td>Showing used alone</td>
<td>72%</td>
<td>20%</td>
</tr>
<tr>
<td>Blend of telling and showing</td>
<td>85%</td>
<td>65%</td>
</tr>
</tbody>
</table>
Even when the learning does not involve a psychomotor skill, learners can become active by responding to questions and organizing information instead of receiving information passively.

**Active involvement strategies for preceptors:**

- Ask questions that will help the student discover the information.
- When asking questions, allow the student time to process the question and formulate an answer. Research has shown that teachers frequently do not allow sufficient "wait time" for students to process questions and respond.
- Ask questions that require students to answer with more than a "yes" or "no." In addition to stating complete answers, encourage students to draw a picture or diagram for you when appropriate.
- Ask questions that will lead the student to constructing his or her own learning and connecting new learning to previous experience. For example, "How does Mrs. K. respond to this antihypertensive as compared with Mr. T?" "What accounts for the difference?"
- When you're tempted to give a mini-lecture, challenge yourself to sprinkle your comments generously with questions. For example, instead of telling the student the most important pieces of information to collect in a patient interview, ask the student to tell you the most important pieces of information to collect, then offer corrective feedback. This approach gives you insight into the student's thinking and learning needs.

### SOME SAMPLE QUESTIONS ABOUT PATIENT MANAGEMENT

- Is there a problem here? (Sometimes let the correct answer be "no.")
- What is important? Irrelevant?
- Is a pattern developing?
- What additional information do you need? How will you get additional information?
- What will you do first? Why?
- Is there a conflict between your perspective and the patient's? If so, how will you resolve it?
- What is the patient goal or outcome? What is the timeline for goals?
- What is an example of . . . ?
Before the student observes you in action, ask the student a few questions for which you will expect answers after the observation. For example, "How did I get information about sexual orientation from this patient?"

Incorporate as many of the student's senses as feasible. Whenever reasonable, use a real human body as an instructional aid - even if the body is yours, the student's or someone else's other than a patient's. Direct the student to locate and use all of the forms, equipment, patient education materials, and other items in the environment that relate to the information, skills, and attitudes to be learned.

Turn questions around. When a student asks you a question, instead of answering immediately, ask a question (a what, when, where, who, how or sometimes why question) that will lead the student to answering his or her own question. Often a very important question of this type is "Where could you look to find that out?" Clues to the answer may lie in more physical assessment, in the patient's record, or in other references and resources--including on-line references and human resources. Part of the process a student needs to learn from you is how to access needed information.

Use questions, such as the sentence completions below, to optimize the precepting process and guide the student toward assuming some accountability for the effectiveness of the relationship. Some of these questions might be particularly useful at the time of midterm evaluation, or at a time when you perceive that the student is having difficulty.

**Some Sentence Completions About Precepting**

- One thing I wish my preceptor (or student) knew about me is ____________________________.
- I wish my preceptor would stop (or start) ________________________________.
- One thing that is like (or different from) my previous clinical experience is ____________________.
- One thing I still need more practice with is ________________________________.
- The most important thing I've learned so far is ________________________________.
Share with the student your own active learning strategies, such as your schemes for organizing data and other aspects of your practice.

Give the student advance organizers. When you first meet, give the student an overview of what he or she will learn. You might give the student a convenient reference by creating a matrix. For example, the rows of the matrix might be disease conditions and the columns might be components of the patient management process, as shown below. As the course progresses, the student might fill in such a matrix with specific information and references. Let the student know what you expect him or her to gain from a particular experience and how today's experience fits into the overall course experience. See the sample matrix below.

Sample Matrix

<table>
<thead>
<tr>
<th>Physical Assessment and Laboratory Testing</th>
<th>Patient Interview</th>
<th>Plan of Care</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Treatment</td>
<td>Medication</td>
</tr>
<tr>
<td>Chronic HTN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coronary Artery Disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic CHF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ask questions that require students to reflect on their own practice, identify ways to improve, and plan for a more successful next encounter.

John W. Newburn wrote, "People can be divided into three groups: those who make things happen, those who watch things happen, and those who wonder what happened."

Newburn notwithstanding, an active learning process includes some watching and some wondering (or reflecting) about what happened.
Individual Differences

Individual differences are the many ways in which persons differ from one another. Each of our students presents as a unique constellation of individual differences.

Here are some of the many ways in which adults differ from one another:

- Ethnicity
- Race
- Religion
- School and Learning
- Workplace Culture
- Age/Generation
- Interests
- Disability Status
- Personality Type
- Aptitudes
- Experience as a Healthcare Consumer
- Professional Expertise
- Practice Specialty
- Gender
- Sexual Orientation
- Talents
- Family Roles
- Learning Style
- Conflict Management Style
- Achievements

Following are individual differences strategies for preceptors:

- Ask questions to assess the student. In addition to establishing rapport, knowledge about the student gives you insight into ways to connect new learning with prior knowledge and experience.
- At times, you will be teaching the student a way of doing something that differs from the way the student has performed the particular activity in the past. In addition to teaching the student the
new way, emphasize how the new way differs from the student's previous habit.

Assess your student's learning style and other dispositions. Some examples of learning styles appear in Section 4. You will not have the luxury of knowing student results on a learning style inventory or other measures of personal disposition, but you can ask the student to tell you about successful learning experiences, usual approaches to resolving conflict, and other relevant preferences.

Respect and build upon the student's preferred styles when possible. But, also recognize that the student will not experience the world of practice, or life, ONLY in his or her preferred learning style. Encourage students to develop their facility in alternative ways of learning. This builds flexibility, which will support effective practice.

Recognize that your own individual characteristics contribute to the effectiveness of the preceptorship. Certain of your characteristics promote successful precepting better than others do. In addition, your own characteristics will create more positive chemistry with some students than with others. Explore some of your own characteristics in a Thumbnail Sketch of the Myers-Briggs Type Inventory and precepting implications (Section 11).

Disclose some of your own characteristics. This is especially important if you place special value upon certain elements of a student's behavior. For example, if you value taking of initiative by the student, let the student know your value, and describe some examples of taking initiative in the student role. Without such clarifying, you and your student may each translate initiative into different behaviors. It is important to come to a mutual understanding of expectations and interpretations.

---

**Relevance and Motivation**

*You can’t motivate anyone.*

*You can only connect with and use the person’s own motivators.*

A teenager sits at his desk and questions his teacher, "Why do we have to learn this stuff anyhow?" She responds, "It's good for self-discipline, Scott, and it will help you later in life." He
reflects on her response and thinks to himself, "Right ... in case I land a job in a verb conjugation plant." Sometimes, the student needs assistance to see the relevance that is so obvious to the preceptor.

Below are relevance and motivation strategies for preceptors:

- Robert Pike (1992) makes the following motivational suggestions. How can you act on each one in your precepting relationship?
  - Make personal contact with learners.
  - Give many examples.
  - Activate the learner.
  - Protect, enhance learner's self-esteem; give praise.
  - Create a need-to-know; apply learning to [practice] and life.
  - Create and maintain interest.
  - Encourage personal (learner) responsibility.
  - Foster wholesome competition.
  - Offer a choice.
  - Encourage interpersonal interaction.
  - Recognize internal motives.
  - Get excited yourself.
  - Establish long-range objectives.
  - Remember that adults tune in to:
    - WII-FM = What's in it for me.
    - MMFI-AM = Make me feel important about myself.

Lakewood, MN: Lakewood Publications.

Assess the student’s motivators and find ways to connect learning to the student's real sources of motivation. Remember the hierarchy of basic needs. For example, when the student perceives a threat or has compelling personal or family needs, not much learning will occur until those more basic needs can be addressed. It is not realistic, nor is it the preceptor’s role to resolve the
student's personal or family issues, but it might be helpful to acknowledge an issue and ask the student what needs to happen in order for the student to benefit from the learning experience, given the issue. For example, a brief telephone call to a baby-sitter might put the student at sufficient ease to gain from an experience. Obviously, the preceptor needs to set limits so that the preceptor relationship remains focused on learning and not on personal issues. Simply acknowledging an issue may help the student do whatever is necessary to benefit from the learning experience. If the student perceives a threat related to his or her practice, competence, or relationships with colleagues and patients, explore the student's concern and offer some suggestions for building confidence and comfort level.

- Reassess motivators from time to time. Circumstances, as well as the student's professional growth, will cause motivators to change.
- Link learning to a problem that the student will be able to solve (or prevent) by knowing the information or technique. Clearly describe problems that can arise when a student does not master the learning at hand. Or, for a more active approach, ask the student to identify the problems that might arise for an Advanced Practice Nurse who did not know or know how to ...
- Hold the student accountable for performing tasks, duties, and assignments that make a helpful contribution to your practice. When nurses are in the learner role, they often feel motivated when they believe that what they already know and know how to do can contribute to the situation.

---

**Adult Learning in Action**

Read the following precepting situation and answer the questions below.

As the preceptor, you think that your student, Julie, is lacking the knowledge base she should have. She's solid in some areas, but not across the board. The course syllabus shows a lecture on asthma and assigned reading about respiratory complaints scheduled for three weeks ago. Yet, today Julie was unable to make a differential diagnosis for a patient who presented with a cough.
You challenge Julie with your observation of the discrepancy between her practice and your expectation. She offers a variety of inadequate explanations, "I've been so busy at work; I have no time to devote to readings." "I don't learn anything from the classroom. I'm not really going to learn it until I see it in clinic." "I'm really competent in my real nursing life. I certainly can't afford to lose my job."

1. Which of the AIR categories of adult learning principles predominates in Julie's situation?

2. What actions will you take?

Compare your thoughts with the ideas in Model Answers (Section 12.).