

EFFECTIVE CLINICAL TEACHING



**December 2001
renewed 2004, 2007, 2010**

A module designed to provide pharmacists with the tools necessary to effectively teach pharmacy students in all types of clinical (pharmacy practice) settings.

Published jointly by:

- Texas Southern University College of Pharmacy and Health Sciences**
- Texas Tech University Health Science Center School of Pharmacy**
- University of Houston College of Pharmacy**
- The University of Texas at Austin College of Pharmacy**

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MESSAGE FROM THE DEAN

The University of Texas College of Pharmacy is pleased to participate in the publication of the third in a series of home study modules for our practitioner-faculty. This module represents an ongoing effort on the part of our internship faculty to address the educational and training needs unique to our practitioner-faculty.

You are an important resource to the College, and I appreciate your ongoing efforts on behalf of our students and the profession. My continued and sincere thanks for your continuing contributions to pharmacy education.

Sincerely yours,

M. Lynn Crismon, Pharm.D.
Dean, Doluisio Chair, and Behrens Centennial Professor

FOREWORD

Although the College can never say “thanks” enough for your contributions to our internship program, one more “thank you” is nevertheless in order whenever the opportunity presents itself. This third home study module is one of the forums through which we express our appreciation for the important role you play in the training and education of our pharmacy students.

Teaching Challenging Students is a module designed to assist pharmacists in dealing with that particularly “challenging” student that at times crosses our professional paths. I hope that you find it helpful in addressing these oftentimes complicated and confusing situations. Bill Hendricson, Educational Specialist at The University of Texas Health Science Center at San Antonio, is the author of this module. We appreciate his continued willingness to work with pharmacist preceptors.

Please remember that, even though this module is introductory, it will be useful to all preceptors no matter how long one has been a practitioner-faculty member for our College.

It is our continued hope that these home study modules are helpful in establishing the foundation for a successful intern-preceptor relationship.

— Jennifer L. Ridings-Myhra
Assistant Dean

Stay informed about our experiential program, including educational opportunities for practitioner-faculty, by visiting our web page

<http://www.utexas.edu/pharmacy/general/experiential>

RECEIVING CONTINUING EDUCATION CREDIT FOR *EFFECTIVE CLINICAL TEACHING*

This course meets the Texas State Board of Pharmacy requirement for three (3) hours of preceptor-related continuing education every two years to 1) become a preceptor; or 2) maintain preceptor status. It may be taken only once for credit; therefore, it may not be repeated for the preceptor training or any other continuing education requirement.

The University of Texas College of Pharmacy is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmaceutical education. *Teaching Challenging Students* is approved for 3.0 contact hours (3.0 CEU's) of continuing education credit. Continuing education credit will be issued to participants who successfully complete the program. Successful completion of the program includes reading the module and submission of all exercises to the College. A continuing education statement noting continuing education credit issued will be mailed to the participant within four to six weeks following receipt of all exercises.

The Universal Program Number is: 067-000-07-076-H04-P

Initial Release Date: 12/2/07

Expiration Date: 12/1/13



Please note the following criteria for submitting the exercise booklet for continuing education credit:

1. This course is free of charge to pharmacists who are either currently affiliated with the UT College of Pharmacy through a practitioner-faculty appointment, or are in the process of completing the paperwork for such an appointment. Those in process must be confirmed via the regional director for your geographic area. For more information, visit: <http://www.utexas.edu/pharmacy/general/experiential/info/personnel.html>
2. All other pharmacists wishing to receive CE for this course must submit a check or money order to The University of Texas College of Pharmacy for \$25.
3. This course may not be repeated for credit.
4. To receive a continuing education statement, please forward the exercise booklet, course evaluation, and fee if appropriate per the information above in criteria #1, to:

Anda Wynn, Administrative Associate
College of Pharmacy
The University of Texas at Austin
1 University Station, A1900
Austin, TX 78712-0120

Allow four weeks for processing. It is up to each individual pharmacist to keep track of his or her CE.

Special thanks to Pharmacy Continuing Education for their assistance in the accreditation of this material.

Goal: The goal of Module 3 *Teaching Challenging Students* is to provide pharmacists with the tools necessary to effectively supervise challenging pharmacy students in all pharmacy practice settings.

Objectives: Upon successful completion of this module, the participant should be able to:

1. list five steps of a successful clinical teaching model.
2. describe the mental operations necessary for pharmacy students to answer a question.
3. demonstrate the difference between open and closed-ended questions and their appropriateness in the clinical teaching process for pharmacy students.
4. list at least six characteristics of effective feedback to pharmacy students in a pharmacy practice teaching environment.
5. identify the three primary etiologies of challenging pharmacy student behavior and possible approaches for dealing with these problems.

WHAT IS EFFECTIVE CLINICAL TEACHING?

Hundreds of research studies have been conducted to determine what makes clinical teaching effective. Many of these studies have shown that there is **NO ONE BEST CLINICAL TEACHING METHOD**. However, these studies also show that there are teaching principles that, if applied, do help students learn more efficiently and effectively than if these principles are ignored by the clinical instructor. These principles include:

- following a model of clinical teaching that makes students active learners;
- using questions that require students to think at the highest levels;
- providing feedback that, not only points out mistakes but, in addition, reinforces correct behavior and specifically provides guidance for correcting any mistakes.

This module deals with these principles as well as how to serve as a positive role model and how to teach challenging students.

One Model of Clinical Teaching

Think about how you teach in a clinical setting. Do you ask a lot of questions either randomly or in a specified order? Do you most often give the students information you think they ought to know? Do you observe student performance and then provide feedback?

BE SURE TO WRITE YOUR ANSWERS IN THE "EXERCISE BOOKLET."

Exercise One

My model of clinical teaching

Write an outline or draw a diagram of your own personal model of clinical teaching.

Rationale for having a model

Teachers are often pressed for time when they are teaching students in a clinical setting. One way to make sure that students have an opportunity to learn is for teachers to develop a clinical teaching model that they can use on a regular basis rather than rely on a “spur-of-the-moment” approach. Most teachers develop their own teaching style from their past experiences that may not have always been the most effective way to learn. For a long time the preferred method of teaching was for the teacher to tell students what they needed to know (lecturing) and for the students to take notes and memorize that information. Often these lectures were to one student in a clinical setting. Recent research indicates that this model of “telling” students may not be the most effective method of teaching although it is often considered the most efficient.

Clinical teaching provides opportunities for learners to develop and practice their problem-solving skills—opportunities that are not always available in the classroom setting. Teachers have two equally important responsibilities:

1. Assure that the patient receives the best possible health care, and
2. Assist students to achieve the learning objectives that are outlined for a particular clinical experience.

The addition of patients to this relationship between students and teachers complicates this relationship. There may be a tendency on the part of teachers to over emphasize patient care and not pay enough attention to teaching. There is a greater likelihood of helping students learn by actively involving them in the THINKING PROCESSES rather than telling the students what to do. Using this model assures that students will be actively involved in the entire process and offers teachers an opportunity to assess students’ skills and fund of knowledge. Identifying what students need to learn is one of the most critical skills in effective clinical teaching. This can only be accomplished by asking students to be actively involved in the problem-solving process that occurs in working with patients.

The clinical teacher has a unique opportunity to use *active learning* while working with students. In the pharmacy internship program there is most often one student working with one teacher—an ideal opportunity to engage the student in a discussion rather than using the lecture approach.

Model

There are many different models of clinical teaching that could be used by preceptors. Dr. David Irby developed the following clinical teaching model while he was working at the University of Washington at Seattle. It is a straightforward model that is easily understood, although in the clinical setting it may not always be easily implemented. The press of work and shortage of time while serving patients may sometimes interfere with using this model. Therefore, it is important for preceptors to practice using a model until it becomes second nature.

Exercise

Please read the following clinical teaching scenario and answer these two questions.

1. How would you evaluate the instructor's clinical teaching in this scenario? Did the instructor provide an opportunity to help the student learn in an effective manner?
2. If you were this preceptor's supervisor, what feedback, both positive and negative, would you give her?

Jim is halfway through his first clinical rotation that lasts for 8 weeks. Jim seems to have average ability but is sometimes insensitive to patients. Jim was late to work for the second time this week and appeared to be distracted but his preceptor, Miss Jones, did not want to pry into Jim's personal life. However, she asked Jim why he did not call to let her know he would be late and he said he was stuck in traffic and did not have access to a phone. Miss Jones told Jim that he should not be late again.

Shortly after Jim arrived a patient, Joe Brown, came into the pharmacy to pick up a prescription that he said his doctor had called in the day before. Jim checked and determined that he needed to contact the doctor, which he did. The doctor was not available and Jim told Mr. Brown that he would have to come back later to pick up his prescription. Mr. Brown became angry and shouted at Jim that he should have taken care of this sooner. Jim told Mr. Brown in no uncertain terms that it was not his fault. Miss Jones overheard part of this conversation and later told Jim that the customer is always right and that he should be more patient without hearing Jim's side of the encounter. Jim was upset but did not say anything.

Later that afternoon another patient came in and asked to have a prescription filled. Jim immediately began filling the prescription without checking the patient's medical profile. As it turned out the prescription could have had an adverse reaction with other medications the patient was already taking. Miss Jones observed Jim's action and told him to check the patient's medical profile, which he did. However, Jim was not aware of the possible adverse drug interaction and told Miss Jones that he did not see a problem. Miss Jones took over and discussed the situation with the patient without including Jim. Later she talked to Jim about this and told him he should start studying harder because this could have been a serious mistake.

WRITE YOUR ANSWERS IN THE EXERCISE BOOKLET.

Exercise Two

- 1. How would you evaluate the instructor's clinical teaching in this scenario? Did the instructor provide an opportunity to help the student learn in an effective manner?**
- 2. If you were this preceptor's supervisor, what feedback, both positive and negative would you give her?**

The process of identifying students' learning needs can be accomplished by asking two important questions:

1. What are the patient's health care needs?
2. What can students learn from working with this patient or situation?

This model helps to answer those two questions.

This model has five steps. The clinical teacher is not expected to follow them in sequence but it is strongly suggested that each clinical teaching encounter begin with the first two.

- 1. Get a commitment from the student.**

2. **Probe for supporting evidence.**
3. **Teach general rules.**
4. **Reinforce what the student did right.**
5. **Correct mistakes.**

We will use a scenario to explain this model. A student interviews a patient and collects all the information the student thinks is necessary. The student then presents this information to the preceptor for approval of a course of action. (The first and second person will be used to make this scenario more personal.)

1. Get a commitment from the student.

After a student has presented a patient case to you the student most often will stop to see what your opinion is and what to do next. Ask the student for any additional information if you do not feel comfortable about what the student has presented. Then, rather than telling the student your opinion about what is happening with the patient and what should be done, ask the student to make a commitment about what she thinks about the case. Do NOT agree or disagree with the student's decision at this step.

Too often after the student presents a case the instructor will give an opinion without knowing what the student thinks. This allows the student to be passive rather than active during the learning process. It also prevents the instructor from diagnosing the student's learning needs. Asking students how they interpret the data is the first step in diagnosing their learning needs. When you ask students to make a commitment they feel more involved in the learning process and feel more concern for patient care. Of course, if the students make a mistake it is important not to react in such a way as to make them feel stupid.

Examples of questions that can be asked to require students to make a decision are:

“What do you think is going on with this patient?”

“What other information do you think you need to make a decision about this patient?”

“Why do you think this patient has not been following the drug regimen you outlined?”

Non-examples:

“This is obviously a case of -----.”

“You should tell this patient -----.”

2. Probe for supporting evidence.

After the student has made a decision about the patient case ask her to explain how she arrived at that decision. You may need to prompt new students with specific questions because many of them have never been asked for their opinion. Whether you agree or disagree with the student’s decision: this again gives you an opportunity to determine how the student is thinking and whether or not she was able to separate the relevant from the irrelevant facts in the case. It may also give you an opportunity to determine the student’s level of knowledge about whatever the patient’s condition is. Asking students to reveal their thought process helps you to diagnose their learning needs that you can then help them fulfill. If their fund of knowledge is lacking you can refer them to sources where they can improve their level of knowledge. Immediately, it may be necessary to give them sufficient information so they can take care of the patient. Knowing WHY an action is taken is just as important for a professional as taking the correct action.

Examples of questions that can be asked to require students to explain how they arrived at their decision:

“What in the patient’s background did you consider in arriving at your decision?”

“What information did you think was not relevant in this case?”

“What do you think are the most important factors in this case?”

“What other factors did you consider and why did you think they were not relevant?”

“What was your reasoning in asking the patient . . .?”

Non-examples:

“Why did you rule out -----?”

“I don’t think this is -----.”

3. Teach general rules.

Students can never treat every kind of patient they will see later in their practice. Therefore, it is imperative that students learn how to transfer information from a specific patient to a general category of patients. Research has shown that experts (teachers) have models of how to treat different types of patients in their minds. When they are treating a specific patient with a common profile they immediately refer to this model and make a decision. Following that decision they

gather additional information to rule out other possibilities or to affirm their decision. Think about a typical patient who comes to see you who has high blood pressure, is severely overweight and does not follow the regimen you have prescribed for him in the past. What model do you have in your mind to work with this type of patient?

Some patients are classic examples of a category of patients, e.g. patients with high blood pressure and diabetes. When you are working with a student who is treating this type of patient it is important to point out to the student that they will see many patients in the future who will present with an almost identical medical profile. These patients can be very helpful in teaching students general rules. It seems like common sense that students would automatically understand that there are general rules that apply to categories of patients but that is not necessarily true. It is important that you specifically point out the general rule that applies. Making explicit what is implicit can help students learn the general rule that they can use in the future when treating patients with similar profiles.

Examples of statements that can be made to teach general rules:

“If the patient is over 65 and presents with a medical profile similar to “Miss Jones” it is important to ask her about . . . ”

“Patients with MS usually have difficulty knowing when they will have an attack. It is important to work with them to identify the signs and symptoms of when an attack is likely.”

Non-examples:

“In this case it is not desirable to refer the patient to another doctor, a specialist.”

“I am convinced that the best way to treat “Miss Jones” is to . . . ”

4. Reinforce what the student did right.

Students do not always know when they have handled a situation correctly. Only when you assure them will they know that what they did was the appropriate action for this patient. Too often the only time students receive feedback is when they do something wrong or unacceptable. This can lead to a lack of confidence on the part of students and make them hesitant to take any action with a patient.

When a student handles a situation in an effective manner that has a positive result it is important to

point out two factors;

a. What action the student took that was correct.

“Asking the patient the follow-up question about whether she was taking any OTC medications was very insightful.”

b. What effect this action had on the patient.

“Gathering the additional information about OTC medications helped prevent an adverse drug interaction.”

It is important that you be specific in pointing out both the action taken by the student and the effect this action had. Sometimes students accidentally do the right thing. When you specifically point out what action the student took and what positive effect it had on the patient the student is reassured that she made the correct decision and why. Students do not have fully developed skills and if they do not receive reinforcement, these skills may never be firmly established.

Examples of statements that can be made to reinforce students' behavior:

“Obviously you consider the cost of the medication in recommending it to your patient.

Considering a patient's financial status can contribute to improving compliance.”

“You did not jump to conclusions but kept an open mind while you were discussing Miss Smith's treatment. This helped to assure that you obtained all the necessary information to make a correct decision and saved both of you a lot of time.”

Non-examples:

Use specific statements rather than general statements to reinforce student behavior. General statements might include:

“That was a very good job.”

“You handled that patient very well.”

When students hear comments like these they do not know exactly what action you consider good or what effect that action had. Students need clear, specific information so they can be assured their decisions were correct and why.

5. Correct mistakes.

Just as it is important to reinforce correct behavior it is equally important to correct student mistakes. Again, students do not have a well-developed set of skills and will make mistakes from time to time. Unless these mistakes are corrected they may become a habit in the future with undesirable consequences for patients or colleagues. Mistakes can be omissions (not asking enough or the right questions), distortions (putting too much emphasis on one item of data), or misunderstandings (not correctly interpreting what a patient is saying.) All of these mistakes can lead to less than a desirable result.

Once a mistake is recognized the issue then becomes how to help the student correct the mistake. Unless it is critical to correct the student in front of a patient the preferred method is to wait until you and the student are alone. OF COURSE, YOU CAN NEVER LEAVE A MISTAKE HANGING IF THERE IS A DANGER OF INJURY TO THE PATIENT. Also, it is important that mistakes be corrected as soon as possible so the students remember what action they took.

Sometimes students recognize that a mistake has been made and correct it. This is the best situation and should be reinforced. However, other times students do not realize they have made a mistake. The suggested procedure for a teacher in this case is to ask the students questions to determine if they can identify that a mistake was made. Helping students to evaluate their own work is one of the most important skills that you can help them develop. As soon as students graduate they will be responsible for monitoring their own performance; thus, helping them to develop a method for evaluating their own performance is one of the primary goals of any clinical teaching program. If the student, after questioning, recognizes that a mistake has been made, reinforce them. If they cannot recognize that a mistake has been made it is necessary to take direct action. Either provide the necessary information so they can correct the mistake or refer them to sources that will provide this necessary information.

How do you know if the student realizes that a mistake has been made and how to correct it? The best method is to ask the students to tell you what was done, why it was incorrect and how to correct the mistake. Only when you hear students explain this to you do you know for sure that they understand the mistake and how to correct it.

Correcting mistakes should never be done in an insulting or demeaning manner. Several decades ago the prevailing philosophy in health science education was to put down the students as often as possible. Today there is a different philosophy that emphasizes the positive rather than the negative. Students need to develop a positive self-concept as a pharmacist and this is best accomplished if the preceptor acts more as a colleague than as a master.

Examples of how to correct mistakes:

“You may be correct to assume that this patient is non-compliant but you cannot know for sure unless you investigate further. You should pursue the questioning of the patient to determine how often and when she takes her medications.”

“Could you explain to me how you came to the conclusion that this patient should be taking an OTC medication rather than a prescription for his congestion?”

Non-examples:

“I cannot believe you told the patient that.”

“You did what?”

••••••••

This is NOT the only acceptable model of clinical teaching. This model does, however, encompass the latest research on clinical teaching, especially engaging the students in active learning. Asking students to first make a decision, then secondly to explain the rationale for this decision are key to diagnosing students' learning needs. Once you know what students need to learn you can more easily develop a teaching plan to help them fulfill their learning needs. Students will not see a significant number of patients during a rotation so learning general rules can help them transfer what they have learned to new situations. Reinforcing correct behavior and correcting mistakes can help students develop the necessary skills to become competent professionals.

For additional information on clinical teaching refer to David Irby, Ph.D. “HOW ATTENDING PHYSICIANS MAKE INSTRUCTIONAL DECISIONS WHEN CONDUCTING TEACHING ROUNDS” *Academic Medicine*, Volume 67, Number 10, 1992 and Lesky LG and Borkan SC, “STRATEGIES TO IMPROVE TEACHING IN AMBULATORY SETTING” *Arch. Intern. Med.* Vol 150, Oct. 1990.

WRITE YOUR ANSWERS IN THE "EXERCISE BOOKLET."**Exercise Three**

Use this code to respond to these five questions. Circle the letter(s) that best describe your clinical teaching -- M = most of the time, S = sometimes, AN = almost never

Think about students you have taught recently. What model of clinical teaching did you use?

Did you

- | | | | |
|---|---|----|---|
| M | S | AN | 1. ask students to make a decision before you told them what to do? |
| M | S | AN | 2. ask students why they made the decision they did? |
| M | S | AN | 3. explain the general principle involved in treating these patients? |
| M | S | AN | 4. reinforce students' correct behavior? |
| M | S | AN | 5. correct student mistakes ? |

Select one change you can make in your clinical teaching that you believe will make learning more effective and/or more efficient for your students.

USING QUESTIONS EFFECTIVELY

Some teachers believe that the best method of teaching is to tell students “what they need to know.” However, the model that was presented in the previous section holds to the theory that it is necessary for students to do the thinking rather than be given answers by an expert (teacher). Using questions is a better method for helping students develop their critical thinking and problem solving skills than listening to a lecture.

Using Questions to Guide Learning

According to *Lesky and Borkan,

“Unlike mini-lectures, questions provide the learner an opportunity to practice problem solving and simultaneously provide the teacher an opportunity to observe and to listen. Questions used skillfully can both channel a learner’s thinking and provide an opportunity to evaluate a learner’s understanding. Problem-solving questions must generally be open ended, although a series of questions that begins as close-ended questions and gradually leads to more open-ended questions can be effective in guiding a learner’s thinking.”

Definition of a Question

Question: “A question is any statement eliciting an answer regardless of grammatical form.”

Answer: “An answer is any response that fulfills the expectation of the questioner.”

The definition of a question as used in this module is, any statement that would expect an answer from the student. For example, “Tell me about the patient’s health history” would be considered a question because students are expected to answer. Another way to say the same thing would be, “What did you find out about the patient’s health history?” The expectation of the student is the same.

WRITE YOUR ANSWERS IN THE "EXERCISE BOOKLET."

Exercise Four

1. How many seconds do teachers wait for students to answer their questions? _____

2. What percentage of their own questions do teachers answer? _____

(Answers are on the next page.)

*Lesky GL and Borkan SC, "Strategies to Improve Teaching in the Ambulatory Medicine Setting," *Archives of Internal Medicine*, Vol. 150, October 1990, 2-33.

Mental Operations Necessary to Answer a Question

1. Understand the question. Students are not experts and may have difficulty understanding a question either because they are not familiar with the content or do not understand the vocabulary. Often teachers use acronyms that are foreign to students and so the question does not have meaning to the students. While it is true that students must develop a professional vocabulary that includes acronyms by the time they graduate, it is sometimes necessary for teachers to use language that students understand at their particular stage of development. Health professions use literally hundreds of acronyms and students cannot be expected to know all of them before they graduate.
2. Decipher the expectation of the teacher. Each teacher has a set of expectations for students. Every time students begin a new relationship with their instructors it is necessary for them to figure out what these new teachers expect. In an earlier module, "Becoming an Effective Preceptor" the topic of orienting students was presented. During orientation teachers have an opportunity to outline their expectations for students that will make it easier for them to respond to the teacher's questions. If students are expected to support their answers with data, either from the patient's record or from the literature, students should be made aware of this by the preceptor during the initial orientation.
3. Search memory for relevant ideas. One difference between experts and novices is that experts have a large fund of knowledge *that is well organized*. Novices, on the other hand, have many isolated facts and concepts but that are not well organized. Therefore, when teachers ask students questions, the students must search their memory to determine which facts and/or information are

relevant to answering the question. This search process can require a few seconds, so teachers must be patient in waiting for a response to their questions.

4. Select a response. Factual questions only have one answer, but many questions have several possible answers with one being better than the others. If the question is complex and may have more than one correct answer, students must process the information they have in their mind and select the response they think best answers the question. Again, this process takes time and requires patience on the part of the teacher.

5. Overcome inhibitions to answer. If students have had bad experiences; that is, they received negative feedback or were embarrassed for giving an incorrect answer in the past, they may be hesitant to respond unless they are absolutely sure that their answer is correct. Teachers can help students be responsive by not “putting them down” if they answer a question incorrectly, but rather, help students to discover the correct answer. This can be accomplished by a series of well-designed questions to help students remember what they know about this situation or problem.

NOTE: The more difficult and complex the question the more

- a. mental activity involved, and
- b. time needed to answer the question.

Answers to Exercise Four #1. 1-2 seconds,	#2. 70-85%
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It is not unusual for a beginning teacher to ask questions in a random manner without a clear-cut purpose for the question. By accident the questions may help the students learn, but a better approach is to plan a series of questions depending on the learning outcome, which the teacher has planned. One way to accomplish this is to learn a taxonomy of questions based upon a specific learning theory. One learning theory that is widely accepted by the educational community is that of Benjamin Bloom.

Dr. Benjamin Bloom developed this taxonomy to help teachers understand various levels of learning so they could plan their instruction to help meet the specific learning outcomes that they expected their students to accomplish. This taxonomy goes from the simplest level of learning—memorizing facts—to the highest level of learning practiced by experts—that is, problem solving and evaluation.

BLOOM'S TAXONOMY

Bloom's Taxonomy proposes six levels of learning.

Knowledge Comprehension	Memorize facts	Lower Level
Application	Application	
Analysis Synthesis Evaluation	Problem-solving	Higher Level

- Knowledge -** is the lowest level of learning. It refers to memorizing facts and figures without any implication that the person knows the importance of these facts or can apply them in a meaningful way. For example, a student may know that two drugs propranolol (Inderal®) and albuterol (Proventil®) interact in an adverse way but may not know why the interaction occurs.
- Comprehension -** indicates that the student understands the facts and concepts and can attach meaning to them. In the previous example of the two drugs propranolol (Inderal®) and albuterol (Proventil®) that interact adversely the student understands the pharmacology of the two drugs and why they may have a negative effect on the body.
- Application -** means that the students can use their knowledge of facts and concepts in a meaningful manner. Again looking at the previous example, students who have reached this level of learning would not fill a prescription for a patient that was told by a doctor to take these two drugs propranolol (Inderal®) and albuterol (Proventil®) at the same time.

- Analysis - requires that students dissect a problem and understand its component parts. For example, if a patient presents with a history of cancer in remission, overweight, diabetes and an infection, the student will be able to understand each of these factors and explain why each factor is either relevant or irrelevant in determining a course of action. Students at this level may not necessarily know what course of action to take.
- Synthesis - is the skill of being able to combine what is already known with new information. Students who have reached this level of learning are able to analyze a patient's condition and then match the patient's needs with what students know about treating this type of patient. In the previous example (analysis) the student, after evaluating each factor could determine the best course of action for this patient based upon previous learning and experience. When students reach the syntheses level they are able to diagnose a patient's needs and then, based upon their knowledge and experience, plan an effective treatment or course of action.
- Evaluation - does not mean making a moral judgment; that is, judging something to be morally good or bad. It does mean making a judgment about whether or not an action taken was the correct decision. Evaluation is based on predetermined criteria for success and data collected after the treatment was performed. After treating a patient the pharmacist can determine, at a later date, whether or not the patient's treatment was successful in correcting the problem or not.

Almost all health care professional educators indicate that they want their students to be problem solvers; that is, be able to:

- a. Collect information from a patient, *analyze* that information and make a determination about the patient's condition and problem,
- b. *Synthesize* what they know about this patient's condition and select the most appropriate action based on their fund of knowledge and past experience,

- c. *Evaluate* whether or not the course of action selected corrected the patient's problem.

In order to accomplish this goal of helping students to become problem solvers it is essential that students practice the skill of problem solving. Teachers can assist students in acquiring the skill of problem solving by asking higher-level questions rather than only asking for recall of facts. The next section will offer suggestions on how to develop a habit of asking the right questions to assist students to achieve the learning outcomes the teacher has outlined for the students.

Questions Related to Bloom's Taxonomy

Memory – Knowledge

Memory questions require the student to remember, either by recall or recognition, information that has been previously learned. This is the lowest level of question, but *having a knowledge base is prerequisite for all other levels of learning*. Therefore, it may be very appropriate at times to ask knowledge level questions to determine how well versed students are about basic factual information.

Examples: “What is normal blood pressure for a healthy 50-year-old male?”

“What procedure must be followed in prescribing a controlled substance?”

Typical words that can be used to ask MEMORY questions:

define-how many-identify-list-name-recall

Comprehension – Knowledge

Comprehension questions can be answered by merely restating or reorganizing material in a rather literal manner to show that the student understands essential meanings. Often they involve students expressing their answers in a different form from that in which it was presented and learned. This is sometimes called translation. Also, this type question may require students to relate facts, generalizations, definitions, etc. but at a very simple level.

Examples: “Explain the difference between reversible and irreversible pathology.”

“How could a person differentiate between an allergy attack and a common cold?”

Typical words that can be used to ask COMPREHENSION questions:

compare-contrast-convert-describe in your own words-explain-give an example-paraphrase-summarize

Application

Application questions require students to apply learned information, facts, concepts, generalizations, principles, and skills to a new situation. The new situation can either be simulated or real life. Often students must solve an unfamiliar problem by identifying the relevant issues or information and/or deciding upon an appropriate course of action.

Examples: “Given the following patient history. . . , would it be appropriate to treat with an antidepressant drug?”
 “What would most likely occur if you were to administer antibiotics in the following situation . . .?”

Typical words that can be used to ask APPLICATION questions:

calculate-decide- predict-produce-solve

Analysis

Analysis questions require students to become aware of specific parts of a problem or situation. Students must break down the whole into its component parts, so that the relationship among the various parts and the overall structure can be understood before the question can be answered or the problem solved. Analysis questions require students to be conscious of the analysis they are performing, including the assumptions, facts, inferences, rules, etc. Analysis is required to diagnose a patient problem.

Examples: “What are the basic assumptions of suggesting to a patient with insomnia that he should try taking an OTC medication?”
 “What are the benefits and risks of prescribing a diuretic for a patient with her condition?”

Typical words or phrases that can be used in ANALYSIS questions:

analyze-diagram-distinguish-does the evidenced support-summarize-select

Synthesis

Synthesis questions require students to put two or more elements or parts into a new (at least for these students) combination or whole. The student creates a “new” communication, plan, abstract relationship, etc. Original and creative thinking may be involved. Unlike the earlier levels of questions in which the course of thought starts with a problem and converges to one correct answer, synthesis questions begin with problems that offer a variety of possibilities that may radiate out to more than one satisfactory answer. Synthesis is the combining of the analysis of a problem with the solution to that problem. Synthesis is required to plan therapy for a patient.

Examples: “Develop a treatment plan for this patient”

“How do you explain the doctor’s orders considering this patient’s medical profile?”

Typical words that can be used to ask SYNTHESIS questions:

create-compose-construct-design-develop-plan-propose

Evaluation

Evaluation questions require students to make judgments according to some criteria and standards based upon data. Three major steps are required in evaluation questions:

1. Establish criteria and standards
2. Collect data
3. Determine if data meet the established criteria and standards

Examples: “Did the treatment this patient received match the guidelines of the American Cancer Society?”

“How would you judge whether or not medication A is better than, as good as, or not as effective as medication B for patients with Parkinson’s Disease?”

Typical words that can be used to ask EVALUATION questions:

appraise-assess-critique-evaluate-judge-support

Purposes of Asking Questions

Knowledge

Purpose is to determine if students know and/or understand facts and concepts.

Examples:

“What is normal blood pressure for a 70 year old man?”

“Describe how a diuretic drug works to reduce blood pressure.”

Clarification

Purpose is to help students organize their thinking.

Examples:

“What kind of exercise were you thinking about when you said . . .?”

“What do you think it means when a patient’s blood pressure is 170/99?”

Extension

Purpose is to stretch students to go beyond the present situation.

Examples:

“You are correct, but what if this patient had diabetes?”

“How would the knowledge that this patient had received chemotherapy change your decision?”

Prompting

Purpose is to give support to a student who has given less than an acceptable response.

Examples:

“Have you considered his home environment?”

“How might her past operation influence treatment success?”

Justification

Purpose is to determine if students really understand the rationale supporting their answers.

Examples:

“Please explain your reasoning for your decision to not call the prescribing physician about the possible drug interaction.”

“What do you see in the patient’s medical history that led you to your conclusion?”

WDY Questions Purpose is to embarrass the student.

DO NOT USE THIS TYPE OF QUESTION.

Examples: “Why Didn’t You ask the patient about his smoking?”

WRITE YOUR ANSWERS IN THE "EXERCISE BOOKLET."

Exercise Five

Purpose of Asking Questions 1

Directions: Match each question with the purpose for which it could be used by writing the appropriate letter(s) in the blank by the question number.

K = Knowledge

P = Prompting

C = Clarification

J = Justification

E = Extension

W = Why Didn’t You

- _____ 1. “What did you learn about this patient’s condition when you were studying about this disease?”
- _____ 2. “Why did you NOT ask the patient about his oral health practices?”
- _____ 3. “How might his drug regimen influence treatment success?”
- _____ 4. “Your answer is correct, but how would it change the situation if this patient had cancer?”
- _____ 5. “What difference, if any, would it make in the treatment you recommend if this patient was obese?”
- _____ 6. “Why do you want to know about the patient’s recent auto accident?”
- _____ 7. “What is the recommended dosage for that drug?”
- _____ 8. “What is the importance of the fact that this patient was not seen by a physician for her high blood pressure in the past two years?”

Exercise Six

Purposes of Asking Questions 2

Directions: Please read the following conversation between a teacher and a student. In the right hand column indicate what you think the teacher's PURPOSE(S) was/were in asking the question. (This is an actual recorded interaction between a teacher and a student.)

Teacher questions = regular type

Student responses = italics

Purposes of Teacher

<p>1. All right! I got your physical examination. It looks pretty good. What is your take on this?</p> <p><i>I think she has some sort of tonsillitis. Okay! I want to Do a culture to see what's going on.</i></p>	<p>1.</p>
<p>2. What would cause someone to have tonsillitis? What would be some reasons?</p> <p><i>Strep, viruses.</i></p>	<p>2.</p>
<p>3. All right, viruses. Can you give me an example of a virus that would cause her to have pretty bad pharyngitis that sometimes makes you tired.</p> <p><i>Mono</i></p>	<p>3.</p>
<p>4. That's why I asked you about this.</p> <p><i>I told her I was asking if she had a boyfriend. She sort of shied away from that. Sometimes when you have viruses you can share; he's sick, she's sick.</i></p>	<p>4.</p>
<p>5. So you have bacterial and viral causes. How are you going to figure out which one it is?</p> <p><i>By doing a culture but that may or may not tell you.</i></p>	<p>5.</p>

<p>6. But why may it not tell you?</p> <p><i>It may not show positive on the culture if you don't do it correctly.</i></p>	6.
<p>7. If you swab the tonsils you should be able to recover it. Have you swabbed a throat before, done a throat culture?</p> <p><i>No.</i></p>	7.
<p>8. Okay, we will demonstrate it there. All right, you can use a throat culture. Are there any clues do you know of in the history or physical examination that might tell you, "gee, this is more likely to be strep or maybe this is more likely to be viral?" Anything you can think of?</p> <p><i>I would say we talked about this last time. Fever and how high it goes. That is not really indicative.</i></p>	8.
<p>9. That might not help much.</p> <p><i>I know I have the answer but I just cannot think of it.</i></p>	9.
<p>10. Let's think about this a little bit. When you get a cold, it gives you a sore throat. What other symptoms does a cold give you?</p> <p><i>Running nose, sniffles, sneezes.</i></p>	10.
<p>11. Are most colds due to bacteria or viruses?</p> <p><i>Viruses.</i></p>	11.
<p>12. Let's figure this out. When you have a sore throat but in addition you have a runny nose and sneezes you are likely to have strep or bacterial infection. So let's go back to the issue. Which one do you think this is?</p>	12.

OPTIONAL EXERCISE

Posttest: Classifying Questions

(This posttest was developed by Betty Risley, Associate Professor of Health Professions Education, Center for Educational Development, University of Illinois at the Medical Center, Chicago.)

Classify each of the following questions using these symbols:

M = Memory
 C = Convergent
 P = Process
 E = Evaluation

- _____ 1. What physiological changes occur in a muscle when it contracts?
- _____ 2. How would you justify applying or not applying a splint directly on a joint with a third-degree burn?
- _____ 3. Can a person survive without a pancreas?
- _____ 4. What references could you make if a person had normal passive range of motion?
- _____ 5. What organism causes rubella?
- _____ 6. How could natural selection be demonstrated in a school laboratory?
- _____ 7. How is secretion different from excretion?
- _____ 8. Do you think it is better that a child be exposed to and get a disease when young rather than receive passive immunity?
- _____ 9. What might happen if a disease organism from space were introduced to earth?
- _____ 10. What is auscultation?
- _____ 11. Under what circumstances do you think a medical professional is NOT justified in touching a patient?
- _____ 12. After reading the article, do you think the malpractice suit was justified?
- _____ 13. What destroys enzymes?
- _____ 14. After reading these data, what course of treatment could be recommended?
- _____ 15. How does a nerve impulse travel along a myelinated nerve?
- _____ 16. Why do children who lack protein develop protruding abdomens?
- _____ 17. What category of questions includes memory and convergent questions?

- _____ 18. What value has this instructional unit had for you?
 _____ 19. Why do students respond cautiously to open questions?
 _____ 20. What is the relationship between types of questions and thinking skills?

Answer Key

- | | | | |
|------|-------|-------|-------|
| 1. C | 6. P | 11. E | 16. C |
| 2. E | 7. C | 12. E | 17. M |
| 3. M | 8. E | 13. M | 18. E |
| 4. P | 9. P | 14. P | 19. P |
| 5. M | 10. M | 15. C | 20. C |

Number of correct answers.

18-20 Very Good – unless all those missed were in the same category.

15-17 Good

12-14 Shaky – better check criteria for categories again.

10-11 Poor – you might want to work through the program again.

You should have a clear understanding of *closed* and *open* questions and the level of thinking required to answer each. You should be able to classify closed questions as either *memory* or *evaluative*. Do not be disturbed if you still have trouble classifying questions, as it is always difficult to do so out of context. It is sufficient if you understand the general concept of types of questions and levels of thinking.

For more information on questioning techniques, please consult:

Foley, Richard P. and Smilansky, Jonathon. The Use of Questions. *Teaching Techniques: A Handbook for Health Professionals*. New York: McGraw-Hill, c1980.

PROVIDING FEEDBACK TO IMPROVE STUDENT LEARNING

Definition of Feedback

Feedback, along with asking effective questions, is one of the most important skills that teachers can use to help students learn. Feedback refers to information describing students' performance in a given activity that is intended to guide their future performance. Feedback occurs when students are offered insight into what they actually did as well as the consequences of their actions. FEEDBACK SHOULD ALWAYS BE BASED ON DATA and preferably data collected by the person giving the feedback.

Reasons Why Feedback May Not Be Given

1. Instructors may not feel comfortable providing feedback
2. Students are anxious about receiving feedback considered to be negative
3. Time is not always available for instructors to provide feedback

1. Instructors may not feel comfortable providing feedback.

Many teachers have not had the opportunity to receive instruction in how to provide feedback. They are dependent on their past experience when they were in school. Some of their experiences may not be positive and therefore they are reluctant to make the same mistakes their instructors made. Also, some teachers have not learned the skills of observing students, analyzing the students' performance and making a judgment as to the quality of that performance. Instructors might also lack the skills of providing feedback to students once the judgments are made. While the skills of providing feedback are not inborn, they can be learned and that is the purpose of this section.

2. Students are anxious about receiving feedback considered to be negative.

Often feedback is considered negative if suggestions are made for change. This is not necessarily a correct perception on the part of students but it does exist. People in general are not open to receiving feedback that asks them to change and students are no different. If instructors have a good working relationship with their students this hesitancy on the part of students to ask for feedback can be overcome. Instructors should always discuss their method of providing feedback during the initial orientation of their students.

3. Time is not always available for instructors to provide feedback.

Teachers identify “lack of time to teach” as the number one problem in clinical teaching. Patient care is the number one priority of both students and teachers in a clinical setting. Thus, teaching becomes a secondary priority. In many cases not having enough time for teaching is a correct observation but with effective planning this problem can be overcome.

Feedback can be internal or external. Internal feedback occurs when individuals reflect on their own performance and gather data to determine the quality of that performance. Almost every person uses internal feedback on a daily basis. For example, if a person is cooking she checks to see if the meat is cooked, if the vegetables are ready to eat and if the bread has been baked. One of the characteristics of experts is that they are very attuned to collecting data and making judgments about their performance and making corrections in that performance, if needed. One of the goals of all clinical teaching is to help students learn how to provide internal feedback because after they graduate they will not have the benefit of receiving feedback from their teachers. One of the most effective means of helping students develop the skill of internal feedback is to ask them to evaluate their own performance.

External feedback occurs when an outside observer monitors another individual’s performance and offers one of three types of responses. This is one of the essential roles of a clinical teacher.

1. Approval of what was done correctly.
2. Modification of what was done incorrectly.
3. Suggestions for improving performance.

1. Approval of what was done correctly

Students are in a developmental stage between novice and expert. As such, they do not have well established thought patterns, skills, or a large fund of well-organized knowledge. They may have a large body of isolated facts that do not fit into a meaningful whole and do not always know when a specific piece of information is relevant to a current situation. Therefore, it is essential that instructors provide feedback to students ON WHAT THEY DID CORRECTLY to encourage that same behavior in the future and to help develop their thought patterns. It is suggested that instructors explain the criteria they are using to determine that an action was done correctly.

2. Modification of what was done incorrectly

Some beginning teachers believe that feedback consists only of correcting mistakes. Correcting mistakes is a very important element in teaching. If students are allowed to proceed with a mistake that is not corrected the likelihood of their developing the wrong thought patterns is very great. Once incorrect thought patterns are developed, students then must *unlearn* the incorrect pattern before they can learn the correct pattern. Mistakes should be corrected as soon as possible after the event and should always be done in a professional manner. Good teachers can correct student mistakes and not make the students feel like they have failed.

3. Suggestions for improving a performance

Teachers are experts in their area of specialty. In this role of expert they have a wide variety of knowledge and skills that have been developed by their professional education and experience. Students, on the other hand, have learned a “paint-by-the-numbers” approach during their early training. While students may arrive at the correct answer or the right solution to a problem they may take a round about method to getting to the desired goal. In these situations, students can benefit greatly by suggestions from teachers in ways to perform that make their clinical practice more efficient and effective.

Characteristics of Effective Feedback

Most experts agree on the characteristics of providing effective feedback. While there are some differences, these differences are not significant. The following “Guidelines for Giving Feedback” are adapted from Dr. Ende’s article in the Journal of the American Medical Association .

Ende Jack, M.D, *Feedback in Clinical Medical Education, Journal of the American Medical Association, Vol. 250, 83.*

1. DESCRIPTIVE and NON-EVALUATIVE
2. SPECIFIC
3. BEHAVIORALLY ANCHORED
4. WELL TIMED
5. LIMITED IN QUANTITY
6. POSITIVE AS WELL AS CORRECTIVE
7. ANTICIPATORY GUIDANCE
8. DEVELOP A PERSONAL FEEDBACK MECHANISM

1. Descriptive and Non-evaluative

Feedback should be descriptive. This means that instructors should describe the performance of the student, the consequences of that performance, and the quality. Instructors should NOT make evaluative judgments about students' motivation or personal traits unless these are clearly unprofessional and need correction. Example: "The differential diagnosis did not include the possibility of infection" is preferable to, "Your differential diagnosis is wrong." The first statement provides more guidance than the second and is more likely to be received by the student in a positive way.

2. Specific

Instructors should provide specific suggestions for how students can improve their performance. General statements like, "You really need to work harder." Do not provide guidance for students in what changes they need to make. On the other hand, statements like, "When you are consulting with a patient on OTC medications you should always check their medication profile to guard against adverse drug interactions" give students an opportunity to take corrective action. Instructors should specifically describe the performance of the student, the consequences of that performance, and make suggestions for change, if needed.

3. Behaviorally Anchored

Feedback should be directed at student behavior that can be changed. Focusing on physical characteristics or other factors that are beyond control of students is NOT productive. Therefore, instructors should base their feedback on observations of students' performance. The best of all worlds is direct observation but this is not always possible. Sometimes teachers have to rely on the results of action without having the opportunity to see how this result was accomplished. For example, a student may interview a patient and make a decision without the instructor having observed the interview. The instructor in this situation is limited to providing feedback on the "product" of the interview without being able to provide feedback on the "process." This is an important distinction because often suggestions can be made to improve the process to make it more efficient and effective. Instructors should always try to observe the processes that students perform, at least some of the time. Instructors should observe students performing all essential skills that students are required to learn during a rotation at least once, more often if possible.

4. Well Timed

Feedback is most effective when it is given shortly after the performance. This is not always possible because of patient care or other factors influencing the teaching environment. However, every effort should be made to talk with students at the first opportunity so that the behavior is fresh in the students' minds as well as the instructors. Time for feedback should be scheduled on a regular basis so important teaching opportunities are not missed. A brief review of the day is an excellent way to assure that teaching opportunities are not missed.

5. Positive As Well As Corrective Feedback

Three types of feedback were introduced previously in this unit. All three types of feedback should be used to help students learn in the most effective and efficient manner.

- (1) Approval of what was done correctly.
- (2) Modification of what was done incorrectly.
- (3) Suggestions for improving a performance.

Students need to know when they have performed up to expectation. This approval must be specific in pointing out what they did and explaining why this was the correct way to handle a situation. Without this positive reinforcement of good performance students are left to judge for themselves whether or not they did “the-right-thing” and as students they may not have the knowledge and skills to do this. Of course, errors must be corrected in order to provide the best possible care for patients and to help students develop the knowledge and skills they need to become a professional. Again, corrective feedback should focus on behavior controlled by the student. Effective corrective feedback not only identifies the error but also makes specific suggestions for how to correct the error. Finally, teachers, being experts, should help students learn the “tricks-of-the-trade.” Teachers have learned through their experience multiple ways to reach the same goal. Often in school, students learn only one way. While this is the nature of schooling, the clinical experience can help students develop a variety of acceptable approaches in caring for patients.

7. Anticipatory Guidance

Because of their knowledge and experience, clinical faculty understand what procedures are difficult to perform and where the trouble spots are in being a professional pharmacist. Teachers can help students by reviewing procedures prior to the students performing them. For example, when a student for the first time is going to consult with a physician about a suggested drug interaction, an instructor can ask the student to verbally practice what she is going to say. The instructor can role-play the physician and provide a variety of responses that the student might likely receive from the physician. Such a procedure gives the instructor an opportunity to assess the student’s preparation before any action is taken and helps the student develop confidence in her ability. Research suggests that mental practice is helpful in developing professional skills. Clinical instructors learn from past experience the areas students find difficult and can help them prepare to more easily work through these areas.

8. Develop a Personal Feedback Mechanism

Earlier the distinction was made between internal and external feedback. This section refers to internal feedback. The book*, “Educating the Reflective Practitioner” suggests that experts continuously review their own performance and determine whether or not they could have changed something to make this performance more efficient or effective. In order to conduct such a review these experts have to establish a set of criteria that determine what is acceptable performance. If their judgment is that something could have been improved they will seek additional information

either from the literature or their colleagues on how to improve their skills or fund of knowledge. Professionals who do develop the habit of continually assessing their performance continue to refine their skills and improve their performance. Clinical instructors have a unique opportunity to help students develop a personal feedback mechanism by frequently asking students to evaluate their own performance and determine whether or not anything could have been performed at a higher level or in a more efficient manner. Students should be informed during orientation that this is a routine part of clinical teaching method and not designed to harass the students.

*SCHÖN, Donald "EDUCATING THE REFLECTIVE PRACTITIONER," Jossey-Bass Publishers, San Francisco. 1987

When should feedback be given?

There are four specific times when feedback should be given.

1. While observing a specific performance
2. At the end of a patient encounter or performance
3. Review at the end of the day
4. Summarize at specific times during a rotation; mid-rotation, end of rotation

1. While observing a specific performance

Feedback in this situation should consist of guiding the student during the performance. This should be done in such a manner as NOT to make the student look incompetent in the eyes of a patient. Suggestions can be made to help the student's performance as the procedure proceeds.

2. At the end of a patient encounter or performance

After students have completed an encounter with a patient it is suggested that the instructor help the student understand what was done correctly and what needs to be changed. Also, if the student should have learned any general principles, these can be emphasized at this time.

3. Review at the end of the day

In order to assure that students understand what happened during the day the clinical instructor should help students summarize what they have learned. Since the students most likely worked independently during part of the day, the instructor can ask the student to summarize the day's activities. The purpose is to give students an opportunity to ask questions, provide encouragement, and review what should have been learned. This should only take a few minutes unless the student experienced major problems.

4. Summarize at specific times during a rotation; mid-rotation, end of rotation

Several studies have suggested that students believe they do not receive enough feedback. By scheduling review sessions at scheduled times during a rotation instructors can emphasize what students have been doing well and what areas still need improvement. This feedback should be as specific as possible and concentrate on improving student performance.

By using these four opportunities clinical instructors can provide the necessary feedback to maximize student learning. It is helpful if this method of providing feedback is reviewed during the original orientation of the student to the rotation.

WRITE YOUR ANSWERS IN THE "EXERCISE BOOKLET."

Exercise Seven

Directions: For each feedback statement, decide if it violates one or more of the guidelines for giving feedback presented above. If it does violate any of the guideline(s), indicate which one(s). For all items that do **NOT** meet the guidelines, rewrite the statement so it does meet the guidelines.

Use the numbers to indicate which guidelines were violated, if any.

- | | |
|-----------------------------------|--|
| 1. DESCRIPTIVE and NON-EVALUATIVE | 5. LIMITED IN QUANTITY |
| 2. SPECIFIC | 6. POSITIVE AS WELL AS CORRECTIVE |
| 3. BEHAVIORALLY ANCHORED | 7. ANTICIPATORY GUIDANCE |
| 4. WELL TIMED | 8. DEVELOP A PERSONAL FEEDBACK MECHANISM |

1. A student in his first rotation has just finished interviewing a patient who has come to your pharmacy for the first time. He recently moved to your city and has not had any prescriptions filled since he has been here. After the student spent considerable time with the patient he presents his finding to the preceptor and the presentation is far from satisfactory. The preceptor provides the following feedback. **“You really have to be more thorough about your interviews with new patients. Don’t you remember what you were taught in your lecture classes last year? You ought to read your text book.”**

Does this feedback violate one or more of guidelines? _____ Yes _____ No

If yes, which ones? List all that were violated. _____

What feedback would you give to this student?

.....

2. A student has just completed filling a prescription for a patient. The student checked the patient’s medical information in the computer and determined that the prescription was okay for

this patient and there were no indications of adverse drug interactions. This student had not always checked the medical information of patients in the past before filling a prescription. The preceptor had observed the students behavior and provided this feedback. **“You really did a nice job with that patient. Checking the patients medical information was the right thing to do because without doing so it is impossible to know whether or not there could be an adverse drug interaction.”**

Does this feedback violate one or more of guidelines? _____ Yes _____ No
 If yes, which ones? List all that were violated. _____

What feedback would you give to this student?

.....

3. A preceptor is working with a student who is in the third week of his last rotation. The preceptor has observed that this student has had trouble relating to patients but has not commented on this fact before. The student cannot engage in social conversation and uses many technical terms when talking to patients. After listening to this student interact with a jovial, happy, easy to talk to patient, the preceptors asks to talk to the student after she dismissed the patient. The preceptor begins, **“Why is it so difficult for you to talk to a kind gentleman like that? All you have to do is relax and let the conversation flow. Ask him a question or two about his hobbies or work and then just talk to him like you would any long time friend. I’m sure the patients will respond.”**

Does this feedback violate one or more of guidelines? _____ Yes _____ No
 If yes, which ones? List all that were violated. _____

What feedback would you give to this student?

.....

4. A student who is in his last rotation filled a prescription without checking the patient’s medical profile. The preceptor checks the medical profile and discovers that there is a potential adverse drug interaction with other OTC medications that the patient is already taking. During the “end-of-the-day” review the preceptor says, **“Why did you fill that prescription without checking**

the patient's medical profile? Were you not concerned about the possibility of an adverse drug interaction? You need to learn more about OTC medications."

Does this feedback violate one or more of guidelines? _____ Yes _____ No

If yes, which ones? List all that were violated. _____

What feedback would you give to this student?

.....

5. A student on her first rotation is about to counsel a patient who has not been compliant with the medication regimen that the preceptor has recommended to her. The preceptor realizes that it has been some time since this student had studied about non-compliant patients in class so he observed the student from a distance. The student had some difficulty in talking with the patient and did not seem to know how to proceed. Later the preceptor talked with the student and said, **"Why didn't you ask me for help if you were having trouble? This is something you should have learned in school. After all, talking with patients is the best way to gather necessary information."**

Does this feedback violate one or more of guidelines? _____ Yes _____ No

If yes, which ones? List all that were violated. _____

What feedback would you give to this student?

TEACHING CHALLENGING STUDENTS

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Chapter Overview

In a perfect world, all students would be highly motivated, energetic, enthusiastic, intellectually curious and eager to learn. Most of the students you will encounter will have these desirable characteristics. However, if you serve as a preceptor for a number of years, you will undoubtedly encounter some students who are uniquely challenging. For the purposes of this chapter, the term “challenging student ” refers to a student who has one or more of the following characteristics:

- (1) has difficulty learning or performing up to expectations,**
- (2) is difficult or unpleasant to work with; e.g., has a so-called “attitude problem” or displays a high degree of defensiveness, when interacting with you, your staff, other health care practitioners or with patients,**
- (3) is distracted and does not devote full attention to the internship, and/or,**
- (4) does not appear to be motivated to learn**

Chapter Goals

The purpose of this module is to help you understand how the student “sees the world” and to help you understand and assess some of the factors that may cause dysfunctional student behavior in the areas of performance (how they function as a student; work quality) and attitude (the way the student interacts with other people). During this chapter, you will:

1. Assess “why” certain students may be challenging to you. This will be accomplished by reviewing triage questions that can be used to “diagnose” the underlying etiology (cause) for the student’s performance deficiencies, apparent poor attitude, lack of motivation or inappropriate behavior.
2. Explore the concept of “motivation” from the student’s point view, focusing on why the student’s priorities may be different from your priorities.
3. Review the seven C’s model for enhancing student motivation and review recommendations for starting clinical internships “on the right foot.”
4. Describe a strategy for “intervening” with a particularly challenging student.

WRITE YOUR ANSWERS IN THE "EXERCISE BOOKLET."

Exercise Eight

Types of Challenging Students

If you are an experienced preceptor, you probably have already encountered students who are challenging for one reason or another. If you have not yet served as a preceptor, you probably can recall students in your educational career who just didn’t seem to be on the same page with everybody else, who had academic problems or had difficulty getting along with teachers or other students. As a starting point for this module, complete the exercise on the next page that asks you to define for yourself what constitutes difficult or challenging behavior in a student.

Directions

In the left column, identify several types of challenging or difficult students with a word or phrase. In the right column, describe what they do (or what they fail to do) that makes them a challenge.

Types of challenging / difficult students **What makes them challenging for teachers / preceptors?**

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The exercise you just completed is often used during workshops for Pharmacy preceptors. Some of the more frequent descriptors of challenging students are listed below on the left and compared to words often used in these workshops to describe more ideal learners.

Students that are challenging or difficult

Lethargic, listless, lazy

Disorganized (don't use time wisely)

Frequently repeat the same mistakes

No initiative (expect to be "spoon-fed")

Not punctual (e.g., arrive late)

Indifferent (don't appear to care; emotionless)

Defensive (hostile when feedback is given)

Chip on shoulder (quick to take offensive)

Students that preceptors enjoy

Enthusiastic, energetic, eager

Motivated – have personal drive or initiative

Learn from mistakes

Volunteer for tasks & extra work

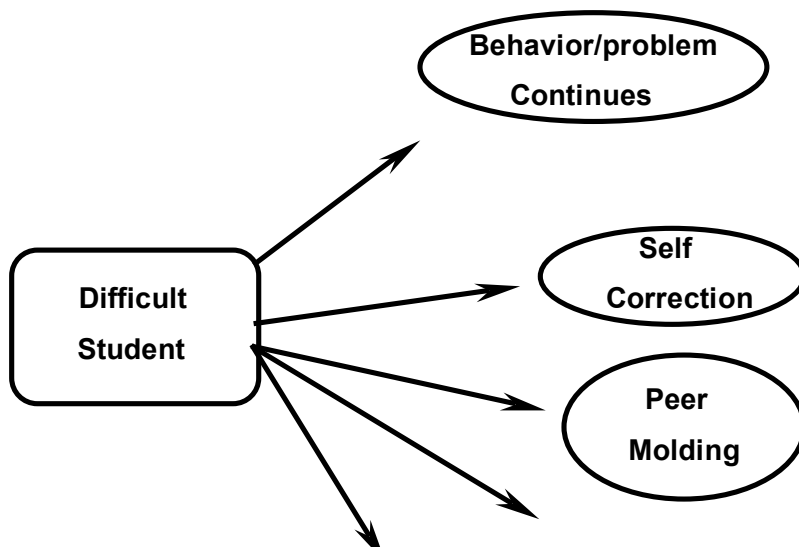
Punctual and follow office rules

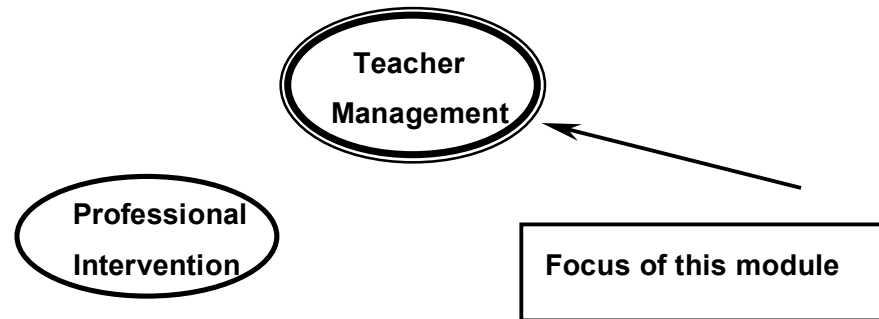
Put in extra time (arrive early; leave late)

Ask for feedback about their performance

Have fun–interact well with staff and patients

As depicted below, the management continuum for a difficult student includes a number of options including continuation of the problem behavior, self-correction by the student at his or her own initiative, peer molding (feedback/advice from peers that stimulate a change in behavior), teacher management (your efforts to diagnose and help the student resolve the problem) which is the focus of this module and professional intervention by medical/psychological specialists which is beyond the scope of this chapter. However, on page 71, the importance of being alert to the potential presence of an underlying (and often un-diagnosed) medical condition will be stressed.

Management Continuum for the Challenging Student



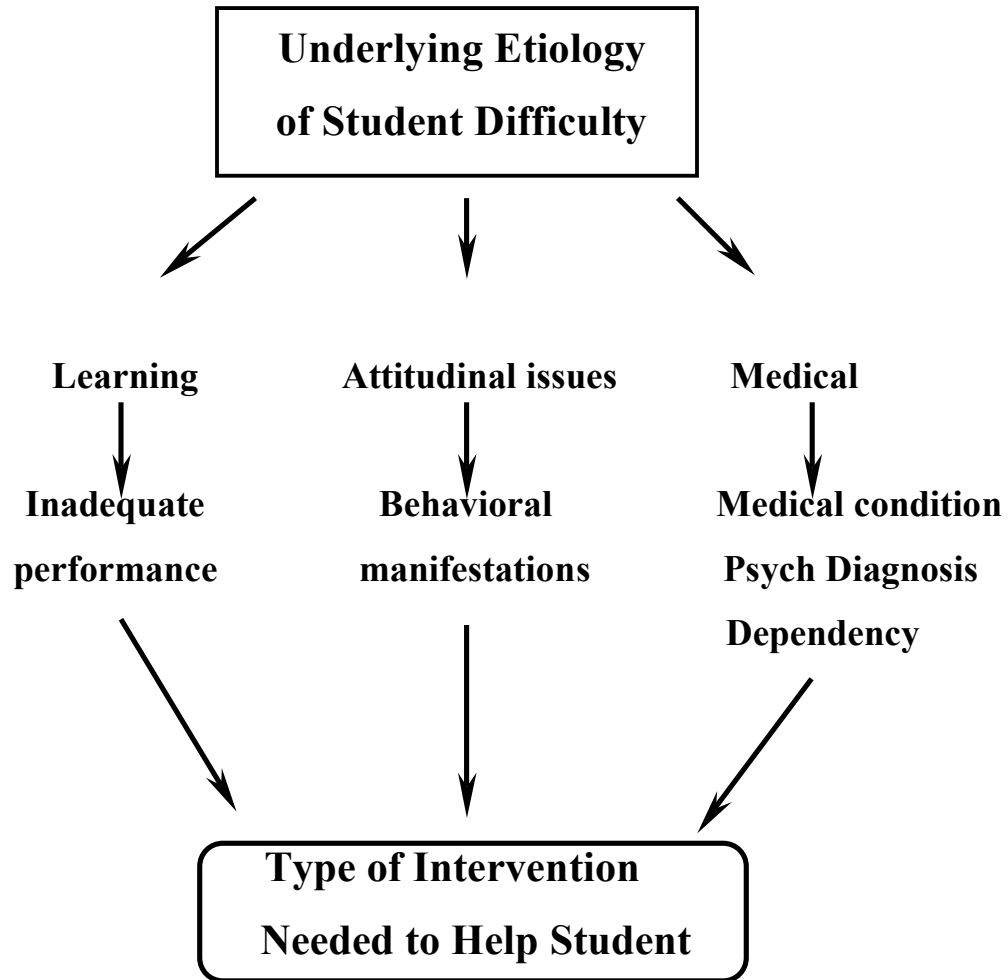
Assessing & Diagnosing The Etiology Of Challenging Student Behavior

This section introduces a series of triage questions that can be used to “diagnose” the underlying etiology (cause) for the student’s performance deficiencies, apparent poor attitude, lack of motivation or inappropriate behavior. These questions are based on the model displayed below. Most cases of challenging student behavior can be classified into one of these categories:

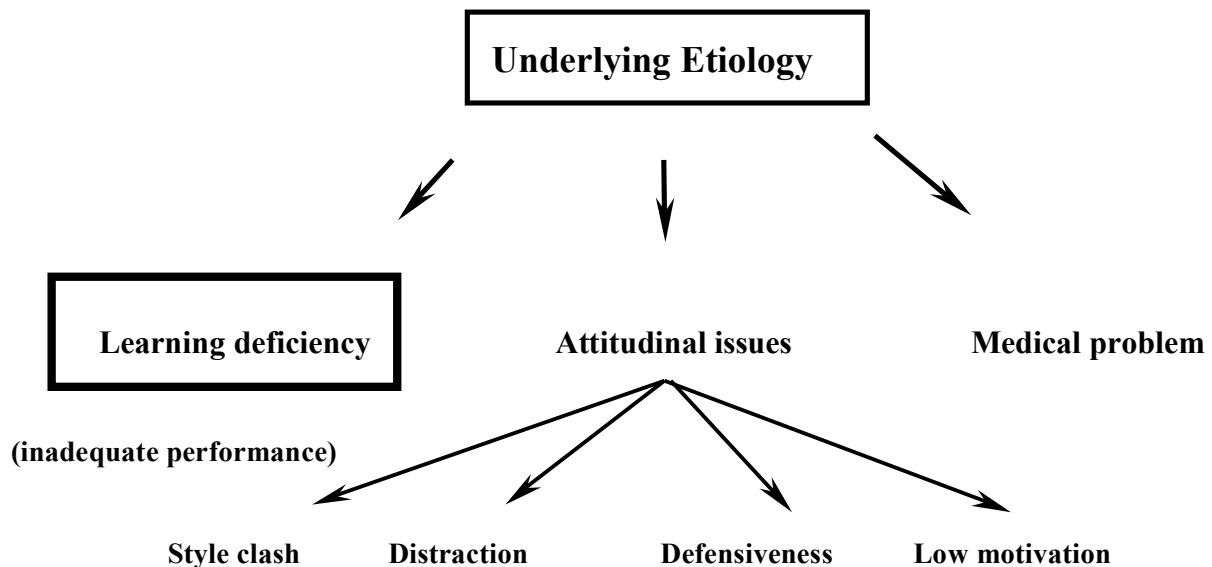
- **learning problems** reflected in performance that is consistently below expectations or a sudden and unexpected decline in performance by a student who has a solid academic record.
- **attitudinal issues** which include a variety of behavioral manifestations described by the phrases and adjectives on the left side of page 42
- **underlying medical conditions**, including psychological problems, that may contribute to sub-standard performance and/or undesirable behaviors/attitudes.

As you undoubtedly suspect, learning difficulties and undesirable behaviors are often intermingled in certain students. For example, students with significant and un-treated medical/psychological conditions, including chemical dependency and other types of physical/emotional abuse, may have sub-standard learning and exhibit undesirable behavioral patterns.

The key issue for teachers/preceptors is to evaluate the underlying cause for the problem behavior and develop an intervention plan to help the learner resolve the situation, or at least recognize that professional intervention is indicated. Several questions pertinent to each category – learning deficiency, undesirable attitudes and medical conditions – will be presented to help you assess what might be driving the student’s behavior.



**Triage questions - Analyzing the Cause of Learning Problems
(Inadequate Performance)**



The etiology of learning deficiencies (sub-standard performance) is complex and a full discussion is beyond the scope of this chapter. The root cause of learning problems can involve disorders in any of the following areas. Often these abnormalities appear in combination.

Neurophysiology / cognition - Various abnormalities can occur related to how the student acquires, processes, stores and retrieves information. For example, metacognition, which is the ability to mentally self-assess the quality of performance and make corrections, varies considerably from person to person. People with poor metacognition are literally not capable of distinguishing accuracy from error in making decisions and have inflated impressions of their abilities.

Brain chemistry - Abnormal chemical levels and metabolism contribute to attention disorders, concentration difficulties and affective (emotional) disorders that may influence learning capability.

Psychological - There are numerous psychological conditions that influence an individual's capacity to learn. A student's self-concept of their level of competence has a powerful impact on their interactions with teachers and the resulting quality of the learning experience.

Academic environment - Sometimes the overall academic environment (e.g., the school / program infrastructure and management) is so poorly conceived or poorly organized that learning becomes difficult even for the best students.

The following section (pages 64-66) reviews key questions to ask yourself when a student in your internship is not performing up to your expectations.

Triage Questions - Analyzing The Cause Of Learning Problems

(What may be causing inadequate performance?)

✓ **Does the student have effective study habits?**

Students that reach this level of professional training are unlikely to have poor study habits. However, students in the clinical phase of their program can lapse into bad habits, particularly when they are away from the academic environment of a health science center or university and when other students are not around to remind them about educational tasks that need to be completed. The chart on page 48 reviews the characteristic study habits of high achieving and under-achieving students. It is important to note that these are general characteristics. Students that are high achievers may not exactly match the profile on page 48 and students who are under-achievers may actually employ some of the desirable study methods. However, a large body of research supports the conclusion that the study methods of high achieving and under-achieving university students are often strikingly different.

✓ **Does student have a potential undiagnosed learning disability?**

Again, students that reach this level of professional training are unlikely to have an undiagnosed learning disability, but it is not completely outside the realm of possibility. Classic signs of a potential learning disability among late adolescents and adults include: (1) difficulty reading aloud, (2) difficulty comprehending the meaning of written material, (3) difficulty completing written tests on time, (4) failure to follow written instructions, (5) difficulty comprehending diagrams and flow charts, and (6) difficulty expressing thoughts and ideas in written form. None of these problems, alone, are diagnostic for a learning disorder but they might raise your index of suspicion in combination with other signs of sub-standard performance. If you have concerns, alert the internship director by phone and discuss your observations of the student's difficulties. Do not communicate a "guess" or "hunch" about a student's possible learning disability in a memo or in an e-mail message. Your responsibility is to verbally alert the program director and allow the university to follow-up with professional assessment. Written statements could have legal implications.

✓ **Are you providing a quality educational experience?**

As the old saying goes, "we have met the enemy, and he is us." This is a hard pill for teachers to swallow, but the sad truth is that substandard student performance is frequently associated with a substandard educational experience. As you have learned in other modules of this series, there are well-recognized ingredients of a quality educational program. When confronted with sub-par student performance, the educational environment needs to be assessed.

Educational quality - questions to ask yourself

- Did I communicate clear objectives for the internship to the student ?
- Did I determine the student's expectations and goals for the internship. . . and make arrangements to help the student attain these goals?
- Does the student have professional responsibilities and access to patients/clients?
- Is the student learning new skills? Am I available to coach/mentor the student as they use newly learned skills?
- Am I enthusiastic, available & approachable (e.g., students are not afraid to ask questions)?
- Do I routinely give constructive feedback to students and reserve time in my schedule to meet with them to review progress?

✓ If student performance continues to be sub-standard, what is the cause?

In spite of your best efforts, some students may struggle with certain tasks or behaviors. There are several reasons which you should keep in mind including:

A particular skill may never have been learned. Research shows that a high percentage of skills are learned incorrectly or never completely mastered in laboratory courses (Johnson, 1984; Farr, 1987; Druckman, 1991). Students are often hesitant to admit that they have not mastered skills unless you ask them specifically about the nature of their training and indicate a willingness to help them learn these tasks.

Skill deterioration from lack of use. Students may be "rusty" if they have not performed a task recently. How long has it been since the students learned this skill in school?

Lack of incentive (E.g., what is the student's perception of effort versus likely reward?). An "externally" motivated student relies heavily on rewards (good grades; glowing letters of recommendation) and avoidance of punishment (bad grades; poor letters of recommendation) to drive their behavior. All students are externally motivated to some extent, but a few students will be particularly focused on calculating effort versus reward. An externally-driven student may perceive a internship where they are expected to work hard to be "not worth the effort" if they do not see that they will receive extra credit or special recognition for their efforts.

Organizational/infrastructure issues (e.g., facility operation hinders student performance). If a series of students have difficulty performing up to your expectations or have similar problems, it might be worth looking at the organization (infrastructure) of your personnel to determine if there are staffing, scheduling or logistical issue that have an impact on student performance.

WRITE YOUR ANSWERS IN THE "EXERCISE BOOKLET."

Exercise Nine

Case Study - Puzzling Paula

Paula has just started a clinical internship with you. You are looking forward to working with Paula, because you have heard that she is one of the top students in the program. During the first few days of the internship, your direct contact with Paula is limited because you are busy organizing a professional meeting and interviewing candidates for several open positions in your new downtown facility. You also were in Los Angeles for five days attending a continuing education course and a brief vacation. But the reports you receive about Paula from other staff are very positive. She is enthusiastic, interacts well with patients, and works hard.

After you return from Los Angeles, you tell Paula to shadow you for a couple of days to see “how it's done around here.” By the third day, she acts bored and doesn’t appear to pay attention when you explain things or when she watches you with patients. Today Paula arrived late and took a two-hour lunch without calling to explain. You are puzzled and wonder about her motivation.

What factors might be causing Paula's behavior?

You are Paula’s preceptor. What would you do?

✓ Does the student have poor metacognition?

Some people who have poorly developed skills and/or limited knowledge are simply oblivious to their incompetence. In any group of university or professional students, some individuals will fall into this category that has been called “unskilled and unaware of it.” (Moreland, 1981; Sinkavich, 1995; Kruger and Dunning, 1999). Unskilled and unaware people often reach erroneous conclusions, perform tasks ineptly, reach amazingly wrongheaded decisions and repeatedly make unfortunate choices in their academic lives (as well as in their non-academic lives), but are remarkably unaware of their incompetence. In fact, these individuals often have very high, although almost totally inaccurate, estimates of their abilities and are very confident, if not arrogant (Weinstein, 1982). As Charles Darwin observed, “*ignorance more frequently begets confidence than does knowledge.*” (Darwin, 1871)

These individuals have poorly developed metacognition which is the brain’s self -assessment process that analyzes what we say and do (e.g., allows us to “*think about what we’re doing*”) and distinguish correct from incorrect actions/decisions. People with well-developed metacognition constantly self-correct and fine-tune their behavior and actions. This self-monitoring process allows people to have an appropriate assessment of their capabilities and to display a level of confidence that corresponds to actual ability (Everson & Tobias, 1998; Maki, Jonas & Kallod, 1994). Students with poorly developed metacognition blunder from one error to the next but have the mistaken impression that they are doing just fine. Researchers in neuroscience and cognition believe that poor metacognition is a fundamental component of incompetence.

Unskilled and unaware students who over-estimate their capabilities and are overly confident can be challenging to teach. Research has shown that these individuals: (1) rarely receive feedback that might help them develop an accurate view of reality, (2) do not learn from feedback unless it is very precise and frequent (Tesser, 1975) and (3) do not learn by observing how other people function (Gilbert, 1995). It is unreasonable to expect that an unskilled and unaware student will fine-tune his performance by watching how a preceptor interacts with other people and makes decisions. However, there is evidence that conducting debriefings with students in which their decisions are analyzed and compared to an ideal will develop metacognitive skills (McPherson, 1989; Kruger and Dunning, 1999).

Discussion of the Puzzling Paula Case

The chart below compares Paula's expectations for the internship versus what actually happened in the first few weeks. Several other factors influenced Paula's behavior. She was recently married and this internship was the first time she had been away from her husband. Her husband is not a student and called her frequently with job-related issues that caused Paula to worry about his job security. Paula lapsed into a junk food diet because there were several fast food drive-throughs near her apartment. She frequently exercised at a fitness club at home but stopped working-out during the internship. She was bored in the evenings without the normal crunch of reading assignments and reports for her on-campus courses. Instead of studying, Paula spent a lot of time on the cell phone talking with classmates also doing internships. They reported more stimulating internships that put Paula in a "funk" about her experiences so far.

Paula's Expectations	Internship Reality
Frequent contact with preceptor	Limited contact with preceptor
Hands-on OTJ (On The Job) work experience	Lot's of shadowing; Benefit from shadowing?
Specific assignments/responsibilities	Staff unsure of Paula's role and her capabilities

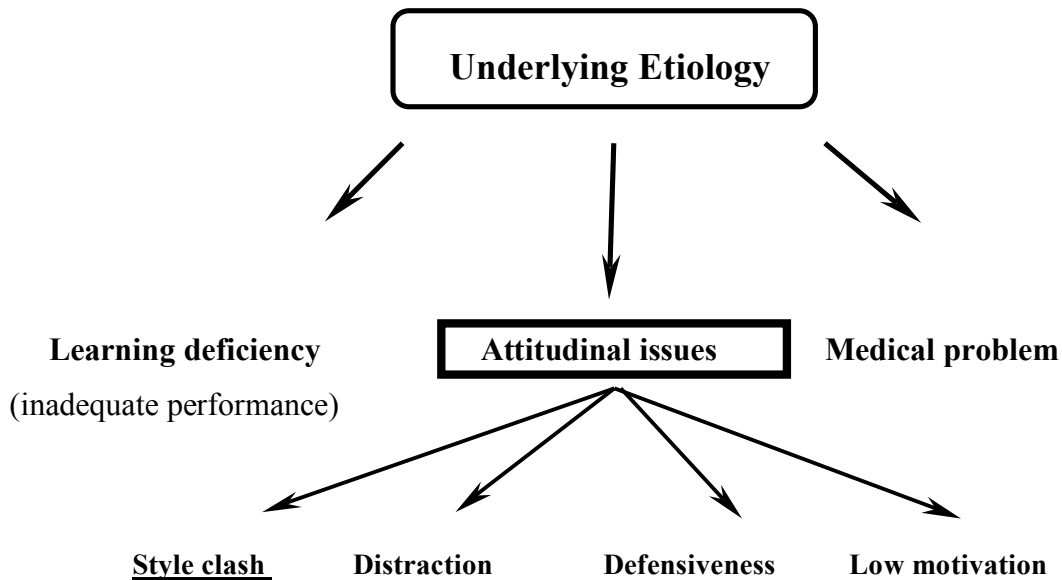
Does The Learner Have Effective Study Habits?

(Price & Dunn, 1982; Martenson, 1986)

	<u>High-achieving learners</u>	<u>Under-achieving learners</u>
Environment	Quiet & isolated from others Well illuminated reading surface Prefer to sit upright at desk	Prefer background sound (music, TV) Often prefer dim lighting Seek comfort - read in bed or lying on sofa
Emotional	Set priorities & stick to them Take responsibility for problems Allocate time to finish tasks Sacrifice social life	Do not stick to study plans; easily distracted Blame others or circumstances Underestimate time needed to study Unwilling to sacrifice social time
Social	Willing to be "alone" Self-reliant	Need on-going peer contact/stimulation Make decisions in conjunction with peers

	Network with other good students (in the loop)	Associate with poor students or non-students
Physical	Rely on multiple senses Study without activity breaks Mentally alert in afternoon & pm	Primarily tactile/kinetic Highly mobile (can't sit still; fidgety) Difficulty studying during mid-day
Psychological	Both concrete & abstract Good impulse control Confident; receptive to critique High expectations	Primarily concrete thinkers Poor impulse control Defensive; avoid feedback Low expectations
Methods	Tend to be <u>active</u> learners: * Self-quizzing while reading * Write notes in class & review * Ask questions during class * Keep up with assigned reading	<u>Overly</u> passive or <u>overly</u> independent * Dysfunctional study groups (too social) * Inefficient study time (distractions) * Read passively (no notes or self-quizzing)
<hr/>		
Summary	Persistent - grind it out Good impulse control Active learning Network = other "good" students Isolated study	Low impulse control; easily distracted Kinetic - need physical activity Conflict between social & academic Network = poor students or non-students Distracting study environment

Triage Questions - Attitudinal Issues



In any educational environment from kindergarten through professional education, inappropriate “attitude” is the most common reason that a student will gain the label of being challenging or difficult. Teacher concerns about student attitude are often expressed in these four areas:

- (1) **Style clash** - *“We just don’t connect” OR “We just see things in a different way”*
- (2) **Student distraction** – *“He’s here physically, but not mentally.”*
- (3) **Defensiveness** – *“She takes exception to everything I say”*
- (4) **Low motivation** – *“He just doesn’t seem to care”*

(1) **Style Clash** “We just see things in a different way”

Anytime two human beings interact, there is potential for conflict, because of the unique nature of our individual lives and the environments in which we developed into adulthood. To expect all students to “see the world exactly as you do” is unreasonable and would contribute to a boring relationship. However, research by neurophysiologists over the past 50 years demonstrate that human beings mentally process information and use “cues” (e.g., stimuli) from their environment in dramatically different ways. These different types of information processing apparently influence how an individual attempts to structure his or her external environment, how much a person trusts his/her own judgment versus the opinions of others, and how well they can perform certain tasks that require visual, spatial and tactile perception. Although more research is needed, it may also influence a person's creativity; e.g., his/her ability to "think outside the box" and see ways of doing things that

other people do not see. A person's unique style of cognitive functioning also appears to influence the amount of direction (guidance) they desire when learning.

Much of the information processing research is based on the "field dependent – field independent" construct of cognitive function (Witkin, 1977). This model was first proposed at the time of the Korean War (1950-1953) to explain why some experienced World War II Air Force and Navy fighter pilots could easily maneuver the new and faster jet fighters and why many pilots who were successful in slower, propeller-driven aircraft had great difficulty in jets. In fact, there were so many unexplained crashes and fatalities in the early phases of jet fighter training that the military sought the help of cognitive psychologists to determine why skillful World War II pilots could not safely fly the new generation of jet planes. A series of very clever cognitive tests were developed, many of which are still used in the astronaut selection process. This battery of "brain function" tests identified two

distinct ways in which military pilots processed information they received from their senses (for example, sight, hearing, touch, sense of body position in space, ability to determine body orientation to the horizon, ability to interpret mirror (reverse) images of objects, etc).

One group of pilots was determined to be **field dependent (FD)** because they relied heavily on their external environment (instruments, geographic landmarks and the horizon) to perform tasks and make maneuvering decisions. When the external environment was altered so as to be unusual, FD pilots had difficulty functioning. When maneuvering their aircraft at supersonic speeds (roughly twice as fast as WWII propeller driven planes), they did not have time to look around and locate the horizon, find geographic landmarks or take more than quick glance at their instrument readings. Without these external cues, many FD pilots could not determine if they were right side up or upside down, or whether their aircraft was gaining altitude or diving toward the earth.

The other group of pilots were determined to be **field independent (FI)** because they had their own internal sense of direction and body position, and thus did not need to rely on external cues to make decisions. FI pilots could make the transition from the slow propeller driven plane to the much faster jet fighter because they did not need constant visual contact with known environmental cues, e.g., the horizon or the landscape below, and did not rely heavily on instrument readings to make decisions.

Subsequent research has demonstrated that most of us have a decided field dependent or field independent orientation. Our unique way of processing information from our surrounding environment (e.g., an important component of overall cognitive functioning) tends to influence how we prefer to learn, our level of adeptness at certain fine-motor visual-spatial-perceptual tasks and how we interact with others in school or work environments. The chart on page 51 summarizes some of the principle differences between a field dependent person and an individual who is field independent.

Take-home message – style clash

The take-home message from this body of research is to be aware that a student with whom you “just cannot connect” may have the opposite cognitive style from you. For example, if you are field independent, you may prefer an unstructured environment with few rules and guidelines in which the learner can “figure it out by themselves”. However, if your student is field dependent, he/she probably will desire a more structured internship with specific assignments and will expect you to provide a considerable amount of day-to-day direction. The field dependent student may be attentive to details but may also be hesitant to make decisions or take initiative on her own. This student will also need (and expect) frequent approval from you and confirmation that she is performing up to your expectations. **Approximately 2/3 (67%) of us are field dependent in orientation, so the typical student is likely to prefer a structured internship with well-defined goals, tasks and responsibilities.** But it is important to remember that 1/3 of your students, over time, may fall into the field independent group. These students may be uncomfortable with what they perceive to be excessive structure, preferring instead to work more autonomously. Their self-reliance and independent nature may be uncomfortable for you if you are field dependent.

Spending some time early in the preceptor relationship to “getting to know” the student may help you decide what type of learning environment is best for this particular student and allow you to increase structure and guidance or “loosen the reins” depending on the type of student. Simply asking your students to describe how they like to learn and how much direction/guidance they prefer should provide useful cues as to build the internship. Experienced, successful preceptors have the flexibility to configure each internship differently based on the student’s preferences and the student’s apparent (or self-expressed) style of operation.

Field Dependent – Field Independent Cognitive Functioning (Witkin, 1977)

Field Dependent (FD) P

- Rely on external environmental cues when performing tasks such as driving a car (e.g., rely on maps and landmarks to determine direction)
- Rely on opinions of others (parents, teachers, peers) to make decisions.
- May have difficulty with visual-perceptual tasks (recognizing & reproducing spatial patterns)
- Prefer a structured learning environment with well-defined goals, tasks & deadlines.

Strengths

Attentive to details

Persistent & determined

Learning rules, memorizing facts

Eager to please

Desire to "do well" – achievement oriented

Limitations

Uncomfortable with abstract ideas

Reliant on teacher for direction

Need frequent “approval” from teachers

Hesitant to take the initiative

May rely too much on grades for motivation

Field Independent (FI)

- Rely on personal sense of "correctness" to make decisions; makes up his/her own mind without extensive input from others.
- Often have well developed visual-perceptual skills.
- May see problems from perspectives that others do not consider.
- Prefer a learning environment in which student determines what is learned and how.

Strengths

Recognize problems & solutions quickly

Perceptive & creative

Works well independently

Curious – asks questions

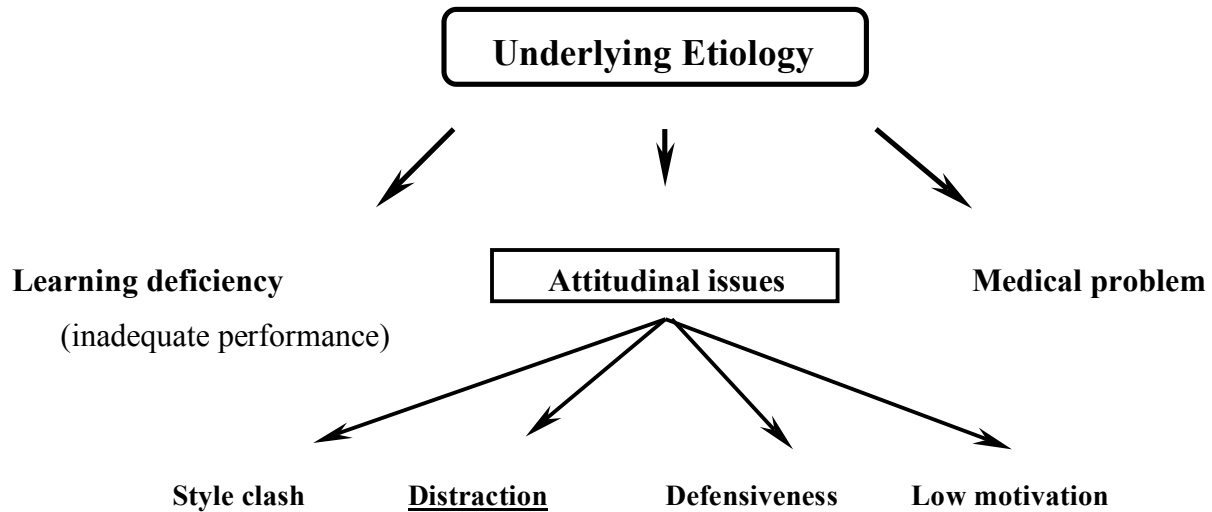
Limitations

May be uncomfortable with details

May be too much of a “rebel” for some teachers

Restless - may not complete tasks

Lack of conformity may be seen as aloofness



(2) Distraction / Lack of Attentiveness *“His mind just seems to be somewhere else”*

Students who are present *in body but not in spirit* or who seem easily distracted from routine tasks often have “so much going-on” in their other life (the non-academic side of their world) that they can not fully attend to the school component of their life. As we discussed previously, students may act bored when the learning environment is not up to speed, but these symptoms can also be indicators of significant non-academic issues that are influencing the student’s behavior.

Key symptoms of a possible non-academic “issue” include: forgetfulness, excessive amount of time on the phone or away from the facility during work hours, sudden requests for “time – off,” moodiness, concentration errors, unproductive time (day-dreaming), dramatic changes in demeanor, sudden decline in performance and unexplained tardiness or absences.

Triage questions to ask yourself

✓ **What do I know about student’s personal/domestic situation?**

- * financial concerns
- * domestic conflict
- * employment
- * health of spouse, children, parents, self

✓ **Is the student maintaining a lifestyle conducive to learning (e.g., health & nutrition)?**

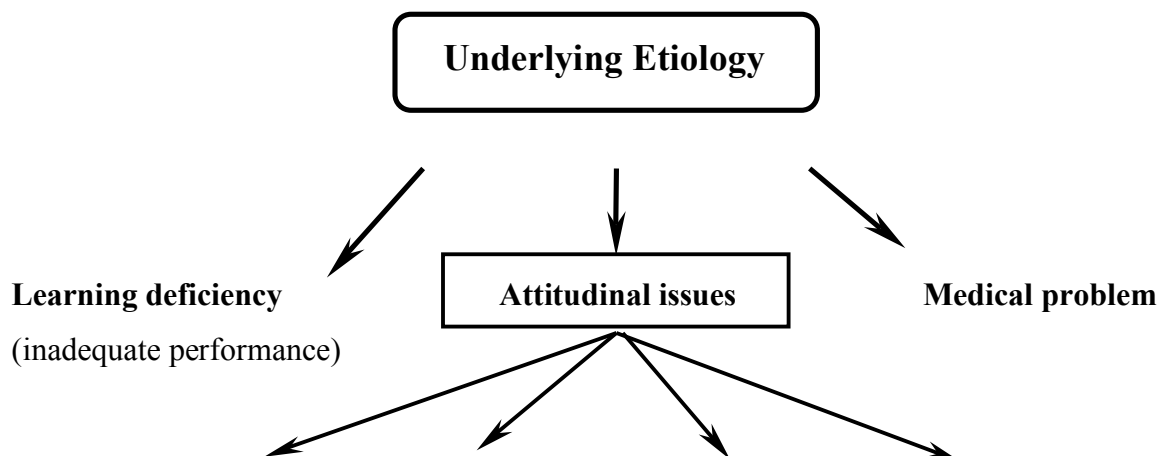
- * diet
- * sleep
- * caffeine
- * alcohol
- * physical activity

Exploring non-academic issues with a student that you do not know very well is “tricky” and should be approached with caution. However, if the student’s level of distraction / lack of attentiveness is such that his/her performance is unsatisfactory (or has declined dramatically), or if the overall functioning of your facility is effected, then it is your responsibility to share your concerns with the student in a non-public place (e.g., in your office). The concluding section of this chapter, strategies for intervening with a student in difficulty, reviews a protocol for this meeting.

In regard to the second question, healthy lifestyle, it is not uncommon for internship students to “let loose and enjoy themselves” when they escape the daily grind of academic life on the main campus. Often, several students are housed together in an apartment to reduce costs and the relative freedom (e.g., less homework) of the internship environment can be conducive to a chips, pizza and beer diet, less sleep and more couch potato behavior than the student experienced at home.

A lethargic demeanor, particularly early in the day, could be symptomatic of the student’s new and different lifestyle. The temptations of being out on their own (especially if it’s the first time away from campus) may get some students off to a slow start, but typically, internship students settle down after the first week. Assigning readings or a research project during the first week will help students remember that the internship is an important part of their academic program.

Depending on the severity of student’s level of distraction and possible causes that the student is willing to share with you, it may be necessary to alert the internship program director by telephone, not by memo, to verbally communicate your observations of the student’s behavior. Do not communicate a “guess” or “hunch” about the cause of a student’s distraction in a memo or in an e-mail message. Again, your responsibility is to verbally alert the program director and allow the university to follow-up with professional assessment.



Style clash

Distraction

Defensiveness

Low motivation

(3) Defensiveness *“She takes exception to everything I say”*

For reasons that psychologists are only beginning to understand, some individuals are inherently less receptive to feedback (e.g., feedback = observations and suggestions offered in an effort to improve performance) than others. All of us can take feedback only to a certain point and then begin to “tune –out” the message or start to argue, but some people react almost immediately and negatively to feedback. These individuals are likely to "take exception" to any communication from another person that implies a flaw in their behavior, appearance or performance, even if the comment is casual or very indirect.

Research by Stamp, et al (1992) identified the combination of conditions which typically trigger a defensive reaction: (1) a self-perceived flaw which the individual is reluctant to acknowledge even to himself, (2) a high level of sensitivity to that flaw and fear of public exposure, and (3) a communication from another individual that is perceived as an “attack” (4) which focuses on the area of sensitivity.

Defensive responses include outright denial (rejection), excuses which deny responsibility, justification (rationalizations which minimize the flaw or its impact), intellectualization (making the flaw an abstract concept), hostile reaction (lashing out verbally), guardedness (secretive behavior) and projection (accusing other people of having the same flaw).

Characteristics of threatening communication likely to trigger defensiveness

Researchers in the fields of communication and psychology have identified seven characteristics of communication that often are perceived as threatening or as an "attack," even by individuals who are not overly defensive. (Gibb, 1961; Civikly, 1977; Winer, 1981; Eadie, 1974; Civikly, 1977; Waln, 1982).

These characteristics of "attack" communication include:

- Unrequested attempts to persuade and unasked for observations about personal traits
- Controlling conversational behaviors such as interruptions, correcting statements and frequent disagreements
- Consistent use of "you" statements (e.g., *you should ...*, *you always ...*; *you never ...*, etc)
- Loud and rapid speech
- One-sided conversation (one person in dyad does all the talking)
- Messages that implies the sender's superiority because of power, position, status or wealth
- Messages that are dogmatic in content and indicate that the sender is inflexible.

In summary, *people become defensive when they are sensitive to a self-perceived flaw that they refuse to acknowledge even to themselves, and when this flaw is brought to their attention by means of a communication that is seen as threatening.* (Leary and Kowalski, 1990; Stamp, 1992)

Strategies to minimize the threat component of communication with a student

Obviously, one of the preceptor's key roles is to mentor (guide) the student's development by means of feedback and coaching. As part of this mentoring process, there will be times when the preceptor will need to comment, sometimes negatively, about the student's performance and offer suggestions intended to be helpful, but which may be perceived as threatening by the student. How can a preceptor provide feedback without creating defensiveness?

Research by Baron (1990) and other investigators offer guidelines for reducing the threat potential in feedback messages.

- ✓ **Follow the golden rule of feedback which is to always give the student the first opportunity to self-assess his/her performance.**

If the student identifies a problem, then the preceptor can praise the student for the accuracy of his/her assessment and then ask the student to discuss ways to avoid this problem in the future. If the student identifies a solution, the preceptor has another opportunity to praise the student and reinforce the correctness of the student's response, thus creating a "win-win" situation for both preceptor and student.

- ✓ **A feedback session with a student should be a two-way conversation.** The student should be encouraged to express his/her perspectives and allowed plenty of time to do so without interruptions and contradictions by the teacher. The ratio of teacher talk to student talk in an **ideal feedback conversation should be approximately 50% – 50%.**
- ✓ **Raise issues with questions.** Instead of immediately labeling a performance as incorrect or sub-standard, start the conversation with an open-ended “leading” question that asks the student to share his/her perceptions of an activity.

Example: Instead of ... “Stephanie, your conversation with Dr. Davis didn’t go well,” ask the student a leading question such as, "*What is your assessment of your interaction with Dr. Davis about Mrs. Reynosa’s medications?*"

- ✓ **Soften negative messages, that will be seen as criticism, by acknowledging that the problem may have an external cause beyond the student’s control.** Raising the possibility of an external cause may reduce the student’s sense of being personally under attack and allow for discussion of a variety of possible reasons for the problem, including, eventually, the students own role. Examples of external causes include: not enough time, the patient/client was not cooperative, I (preceptor) should have been there to help you, it was a really busy day, etc.
- ✓ **Don't overwhelm the student with information. Focus on one issue at a time.** Research on retention of feedback messages indicates that recipients have approximately 75% recall of a first feedback message, 50% recall of a second message, only 25% of a third message and virtually no recall of any subsequent messages. Further, receivers of feedback that include several messages generally get defensive as early as the second message in the series.
- ✓ **Don't personalize the message.** Here are three practical tips to avoid “hot button” words that tend to provoke a sense of attack in students.

Avoid inflammatory language such as “*No Kelly, you’re wrong again...*” Starting a feedback message with “**no**” followed by the student’s name is a very threatening message that almost always will elicit a defensive response. Instead, respond to an incorrect response with non-judgmental language such as, *is there another issue we should consider?* Or, a prompt such as

Should we think about diet as a possible cause for this problem?

Use neutral language to point-out errors. For example, say: ***It probably took too long to return Mr. Smith's phone call about his prescription,*** instead of "Bill, you took too long to get back to Mr. Smith about his prescription."

Use the collective "we" instead of "you" to begin a discussion of a problem. For example, start the feedback conversation with: ***Let's talk about where we started to run into trouble with the order for Mrs. Ramos,*** instead of "John, where did you run into trouble with the order for Mrs. Ramos?"

✓ **Structure feedback as an ego sandwich**

- * Praise the student for procedures/decisions handled appropriately
- * Identify learner needs/deficits and provide prescriptions (suggestions for better performance)
- * Finish conversation with an encouraging overall summary

✓ **Remember the 4 P's - Praise in Public ... Perfect in Private**

All corrective messages should be delivered "out of earshot" (e.g., in a private meeting) where the student has no chance of losing face in public.

- ✓ **If you identify a deficiency in a student's performance, provide a clear "here's a way to do it better" prescription.** Amazingly, the most common missing information in feedback is the "here is how to do it" message (e.g., the corrective prescription for future action). A teacher's feedback to a student often communicates that performance is lacking, but fails to offer guidance about perform the task differently. Feedback messages that tell the student that his/her performance is not good enough, but fails to provide guidance about improvement is almost always seen as threatening.

Triage Questions To Ask When A Student Is Unusually Defensive

- 1. How "safe" does the student feel? Is he/she unduly threatened?**
- 2. What is the student's self-concept? How do they perceive themselves as learners?**

1. How safe does the student feel?

Most faculty in health professions education programs, such as Pharmacy School, do not appreciate that many students, even students with high grades, perceive the academic environment to be essentially hostile and threatening. As a consequence, many students adopt a “risk-avoidance” approach to the curriculum and their interaction with faculty. This risk-avoidance strategy can make the student appear to be under-motivated and passive in their approach to academic tasks. It can also make students guarded and defensive when communicating with faculty and unreceptive to coaching and feedback.

Why do students perceive school to be threatening? There are three reasons:

- (1) consequences of “messaging up” near the end of a long academic journey through high school, college and professional school,
- (2) the inherent “gatekeeper” power of faculty, and
- (3) emotional residue of previous negative encounters with faculty.

Consequences of “messaging up” near the end of a long academic journey through high school, college and professional school.

Pharmacy students have made many personal sacrifices, often incurred considerable financial debt and devoted years of hard effort to attaining the high grades and test scores needed to successfully “climb the academic ladder.” The potential threat of not making the grade and failing to complete professional school is profound in many students who do not want to see a decade of effort go down the drain. As a consequence, students tend to view the curriculum as a mine-field of potential barriers to graduation and develop strategies to help cross this mine-field without accident. Through socialization with other students, particularly upperclassmen, students learn to: (1) focus exclusively on what is vital to successful progress – tests and grades – (2) adopt a memorization approach to learning rather than digging deep into the material, (3) avoid aspects of the curriculum that may cause problems; for example, difficult courses, courses that do not provide copious lecture notes, classroom instructors who are hard graders, laboratory or clinical instructors who require extra effort to get good grades, or teachers who ask a lot of questions, (4) adopt an energy and time conservation approach to the curriculum; for example, obtaining old exams and test question files, determining what is essential to read and what can be skipped, identifying what classes can be “cut” without

detriment, identifying “easy” clinical rotations, receiving tips from upperclassmen about the likes and dislikes of instructors, spending time with teachers known to write good recommendation letters, etc.

Inherent “gatekeeper” power of faculty

Somewhere in the back of the student's mind is the lingering thought that the preceptor could give them a poor grade, write a negative comment on the evaluation form, or even prevent them from graduating (e.g., the gatekeeper effect). The gatekeeper aspect of a faculty member’s responsibilities may become so profound that it hinders student – teacher communication. Some students are acutely aware of the gatekeeper effect and work hard to avoid being placed in situations where instructors might detect limitations in their knowledge or skills. This “fear of showing weakness” may make the student appear guarded and secretive, if not deceptive - behaviors that are frustrating and distressing to faculty.

Emotional residue of previous negative encounters with faculty

Students remember emotionally charged and uncomfortable encounters with belligerent, confrontational teachers more acutely than they remember the countless positive, helpful encounters with well-intentioned teachers. Many students view any teacher that is new to them with a dose of suspicion because, unfortunately, all professional students have endured painful episodes with malignant teachers who are more interested in showing the student “who’s the boss” or “who knows more” than trying to help the student learn. Because of past mistreatment by other teachers, professional students may tend to be passive and disengaged initially until you “prove” that you are there to help and will not treat them in a demeaning manner. Demonstrating that you are approachable and not judgmental in the first few days of the internship sends the message that the student can trust you and that this is a safe environment.

Safety from a student’s perspective

The diagram on page 80 displays the hierarchy of needs that drive human behavior as conceptualized by the noted psychologist Abraham Maslow (Maslow, 1970). According to Maslow’s theories, humans have the potential to evolve through three developmental phases during their life’s journey.

Maslow's hierarchy of needs provides a good summary of student perceptions of the academic environment and resultant behavior. At the base of the hierarchy are fundamental needs that are basic physiological functions such as nourishment, elimination and sexual gratification. At a slightly higher level in the fundamental category are safety needs including finding shelter and developing techniques to protect oneself from danger. For reasons previously discussed, students in professional programs have strong "safety" needs and develop risk-reduction strategies to protect themselves from what they perceive to be a dangerous environment.

As an individual matures, he/she develops more sophisticated psychological needs that include the desire to belong to a group. The need to affiliate with other individuals with similar interests, values, skills or circumstance and to be accepted within this group/community is a powerful force driving much of human behavior. After belongingness needs are addressed, individuals strive to fulfill esteem needs by gaining recognition within their affiliation group for their talents and achievements. According to Maslow, the pinnacle of human development is self-actualization (e.g., "*be all that you can be*") characterized by personal growth in several areas unrelated to your primary vocation - spiritual, family/social, public service, health/fitness. In the environment of Pharmacy school, teachers can play a central role in helping the student move beyond their focus on curricular safety toward affiliation with the Pharmacy community. The section on enhancing student motivation (pages 69 – 72) will demonstrate how teachers can facilitate this important transition and, at the same time, increase student motivation to excel.

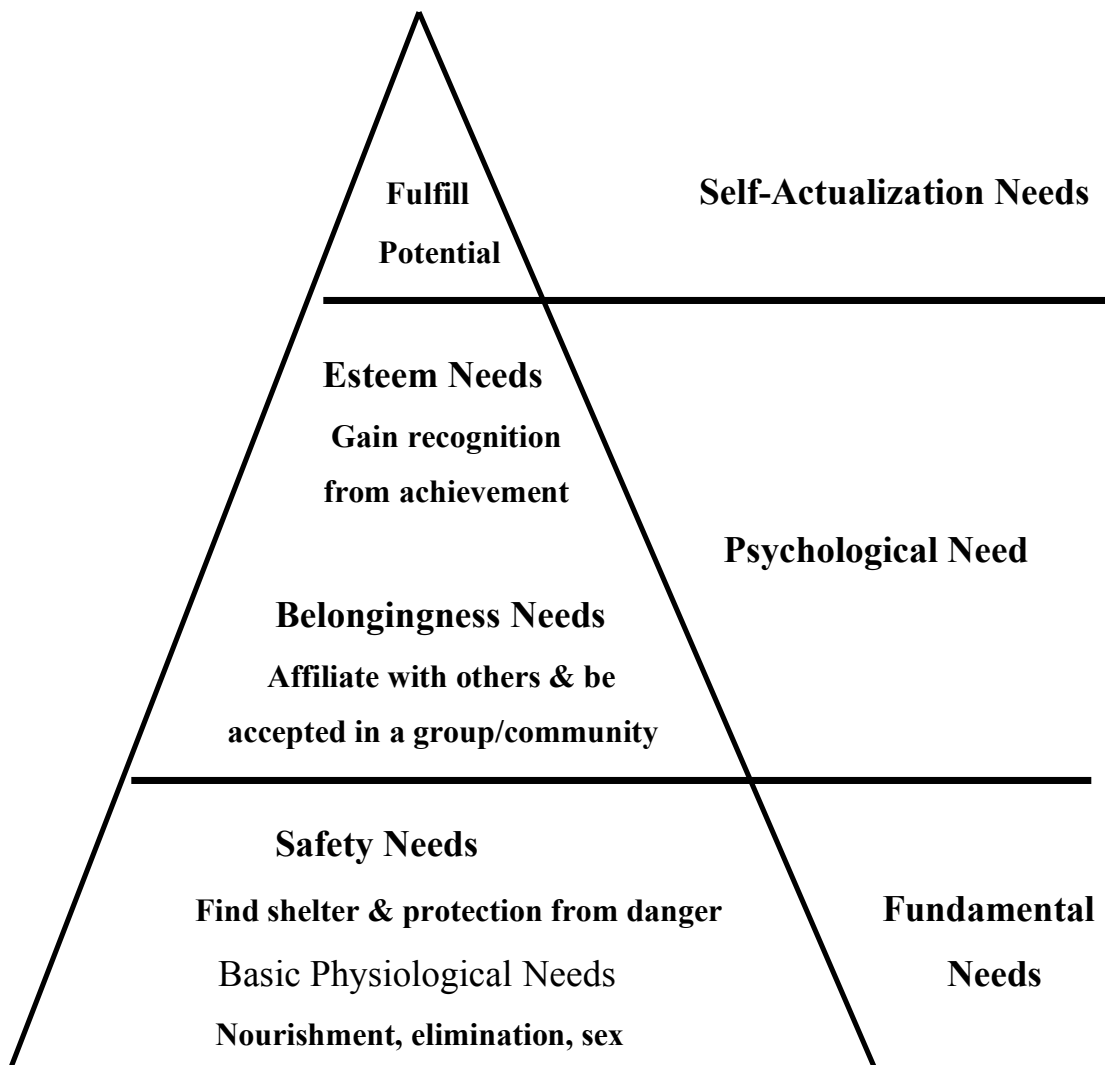
Student "safety" take-home messages

There are three "sense of safety" take-home messages that are important for teachers to remember, particularly when dealing with a student who is easily threatened and is defensive.

- All people, including students, focus on satisfying fundamental needs first, including their desire to secure a safe environment.
- When fundamental physiological or safety needs are threatened, more sophisticated development is compromised. If the environment is perceived to be overly threatening, an individual will focus almost all of his/her efforts on securing safety (e.g., risk-reduction).

- Motivation to excel decreases when a person is emotionally disconnected from an affiliation group of people who have similar interests, goals and circumstances. Students who perceive themselves to be in an unsafe school environment become so preoccupied with risk reduction that they devote little effort to affiliating or “bonding” with other students and teachers. Students who struggle academically are often “loners” who have not become part of a student peer group and who have little contact with faculty.

Maslow's Hierarchy of Needs



Maslow AH. *Motivation and Personality*. (2nd ed). New York: Harper & Row, 1970.

Comparison of student and teacher (professional practitioner) needs

As a consequence of being at different developmental stages, your needs and values (as a professional) can be dramatically different from those of students. This can be a source of conflict when teachers *assume* that students also are driven by personal growth goals.

Professional's Needs Vs. Student's Needs

- | | |
|---------------------|--|
| Professional | <ul style="list-style-type: none"> * Do work that is meaningful * Gain respect from professional peers and community * <u>Personal growth</u> - spiritual, social, public service, health/fitness |
| Student | <ul style="list-style-type: none"> * Learn teacher expectations & adapt to them * Hurdle curricular barriers & cross the finish line * <u>Conserve energy</u> for next barrier |

Implications for preceptors

As summarized below, professional students employ a variety of mechanisms to bring an element of security to their academic world. Many of these safety techniques are risk-reduction behaviors that in Texas are known as “hunkering down” or staying out of harms way. Hunker down behaviors include passivity, invisibility/anonymity, reductionism (“just tell me what will be on the test”), tunnel vision (ignoring everything but the next test or assignment), avoiding feedback and coaching and defensiveness (making excuses, blaming others).

➤ Professional students have "safety" needs

- **Physiological** ➡ Marathon – mentality; desire to conserve energy = *“it’s a long 3 or 4 year race, I have to conserve my energy whenever I can”*
- **Cognitive** ➡ Fear of showing ignorance, especially in public
- **Emotional** ➡ Fear "gatekeepers" (e.g., teachers = potential barriers)

➤ **Safety needs stimulate risk reduction behavior (hunkering down)**

- **Passivity** ➤ *I'd rather let them wonder if I'm an idiot than open my mouth and prove it. (Abraham Lincoln, 1852)*
- **Invisibility** ➤ Desire to be faceless; prefer anonymity of the lecture hall
- **Reductionism** ➤ Desire to reduce learning to concrete tasks (what's on the test?)
- **Tunnel-vision** ➤ Living from task to task; test to test (hurdle-jumping mentality)
- **Avoidance** ➤ Not receptive to coaching and feedback (avoids situations where teachers can offer assistance)
- **Defensiveness** ➤ Denies existence of shortcomings; makes excuses, blames others, lashes out emotionally (makes teachers hesitant to offer feedback)

When a preceptor encounters these behaviors in a student, he/she may reach the conclusion that the student is lazy, not smart, or poorly motivated. In reality, intelligent and highly motivated students display these behaviors because they are seen as an effective strategy to help the student achieve his/her ultimate goal – to survive the curriculum and graduate (e.g., cross the finish line).

2. What is the student's self-image? How do they perceive themselves as learners?

It is important for pharmacy educators to understand that students travel along an emotional development continuum as they progress through various stages of the curriculum (March, 1988). The student's self - concept, as a learner, evolves dramatically through predictable phases as they grow from novice status when they enter Pharmacy School to a competent entry-level professional at the time of graduation. The self-concept continuum depicted in the diagram below illustrates how students “see themselves” at various stages of the competency development process.

Learner's Self-Concept Continuum

- **Unconscious competent** **Quick, accurate, confident, impatient,
use short-cuts, sophisticated comprehension**

 - **Conscious competent** **Methodical, receptive to assistance, quality-oriented**

 - **Conscious incompetent** **Hesitant, frequent errors, low confidence, acutely aware of
limitations, defensive, negative self-talk; secretive**

passive-aggressive *overt hostility*

deflect feedback

 - **Unconscious incompetent** **Optimistic, eager & enthusiastic but also naive & uniformed**
-

Hendricson WD, Kleffner JH. Curricular and Instructional Implications of Competency-based Dental Education. *J Dent Educ.* 1998; 62(2): 183-196.

Discussion of learner's self-concept continuum

The health professional-in-training enters the competency development continuum prior to program matriculation as a candidate who is expected to display appropriate pre-training readiness as documented by transcripts and scores on standardized tests designed to predict training program success. The candidate matriculates as an **unconscious incompetent** who is enthusiastic and excited to be entering professional training, optimistic about his/her performance, but naive about the rigors of the training and unaware of his/her own limitations (e.g., they don't know what they don't know). The unconscious incompetent stage is the natural foundation phase (e.g., the entry-point) of competency development and is different from the "unskilled and unaware" student we discussed earlier. The unskilled and unaware student has poor metacognition (lacks ability to self-monitor and

self-correct) that prevents the student from recognizing his/her inept performance and making corrections.

At some point in the first year of the curriculum, the learner's self-concept shifts dramatically to **conscious incompetent** which is characteristic of the novice learner. The student is now acutely aware of his/her limitations and now realizes that the road to competence will be long and arduous. Negative self-talk can dominate the novice learner producing an undue focus on perceived deficiencies which stimulates efforts to hide weaknesses from instructors, thus hindering the learning process. Students at this point of the continuum are defensive, which may manifest itself in passive-aggressive behavior (perceived by faculty as apathy or passivity) or overt hostility (perceived as a bad attitude). Conscious incompetents may be secretive and attempt to hide weaknesses from teacher. At this stage, students tend to be extremely concrete in their thinking, hesitant to deviate from rules and guidelines, and reluctant to make their own decisions for fear of making errors. They are reluctant to contemplate abstractions or alternatives, desiring instead precise prescriptions from instructors; i.e., *just tell me what to do!*” Instructors who understand the etiology of such defensiveness can be particularly helpful to the novice student with a fragile conscious incompetent mind-set by providing encouragement, practical suggestions consistent with the student's skill level, extensive hands-on but non-judgmental assistance, and praise for accomplishments. **Students in professional school may spend the bulk of the curriculum in the conscious incompetent phase.**

Students slowly evolve with repetitive practice and instructor coaching into **conscious competents**. Students at this level perform somewhat mechanically “by the numbers,” because they must think carefully about everything they do (thus the conscious competent label). During the conscious competent phase, students drop their defensive shields and actively seek assistance from teachers. They worry less about what others think of their performance, instead focusing on the quality of the work they perform for the client/patient. Work performance is not as fluid and effortless as the expert practitioner, but the conscious competent can, with adequate time and limited distractions, perform the tasks expected of the unsupervised entry-level practitioner.

Expert practitioners are known as **unconscious competents** because they routinely perform the tasks of their profession at a high level of quality and efficiency without expending a great deal of brainpower. Over the years, expert practitioners have hardwired into their brains the needed knowledge and skills and, consequently, do not overtly think about each step in a task, a level of

intellectual development called “automaticity” by cognitive psychologists. This automaticity also allows unconscious competents to take mental shortcuts because they can automatically recognize important data and cues when studying a problem and quickly leap to a solution with a high probability of success. The length of time and extent of experience required to achieve an unconscious competent, expert status has been the subject of speculation with estimates ranging from 10-15 years (Hoffman, 1991; Hendricson & Kleffner, 1998).

Take-home messages: self-concept continuum

The primary communication dyad in health professions education is a teacher/preceptor who is an expert and an unconscious competent, interacting with a student who is a conscious incompetent. A review of the words and phrases that describe each of these individuals underscores the potential for misunderstanding and conflict when unconscious competents and conscious incompetents attempt to work together. In some ways, this expert – novice dyad is like “mixing oil and water.”

Unconscious competent (teacher/expert)	Conscious incompetent (student/novice)
Quick; use mental short-cuts (automaticity)	Hesitant
Accurate	Frequent errors
Confident	Low confidence; acutely aware of limitations
Impatient	Defensive; secretive; seek to hide weaknesses

Because of their quickness, accuracy and the confidence that results from frequent success, experts tend to expect everyone to perform at a similar high level of proficiency and become impatient with a student’s far less developed skills. A student’s slow and hesitant approach to a task, frequent errors and defensiveness may lead the teacher to conclude that the student is dim-witted or hopelessly incompetent. In reality, the student may be demonstrating an appropriate level of skill relative to his/her training level. However, many teachers lose sight of what is level appropriate performance and focus on the student’s deficiencies which further reinforces the student’s conscious incompetent self-concept. This fosters more defensiveness by the student and more frustration by the teacher sending the relationship into a downward spiral.

Take-home message: Developing an accurate “fix” on what level of performance can reasonably be expected from students is essential. If you are a first-time preceptor, a useful preparation activity is to contact two experienced preceptors and ask them to share their impressions of performance that is reasonable for students at various levels of training. Ask these preceptors to identify the mistakes students are likely to make and determine tasks that are a struggle for inexperienced students. Knowledge of student problem areas will help you anticipate these situations and stimulate thinking about how you can help the student in these areas.

Suggestions for helping the conscious incompetent student

The P – E – T (**P**rime, **P**artition & **P**raise, **E**mpathy, **T**each) model was developed to help preceptors work with students who are at the conscious incompetent stage.

Prime Before student undertakes a task, prime (prepare) the student by coaching him/her through the key elements of the task and alert them to possible problems. Ask the student how they will deal with problems that may arise.

P Partition Allow the student to build from success by assigning manageable tasks early in the internship and then expand the scope of responsibilities.

Praise Ample doses of praise for tasks performed well is essential. Words of encouragement when they solve problems, is also essential.

Empathy Share your own doubts and problems when you were a student including war stories about errors you made and how you improved your performance. Make it clear that you know that professional training is a developmental continuum and that mistakes will occur, especially early in the internship.

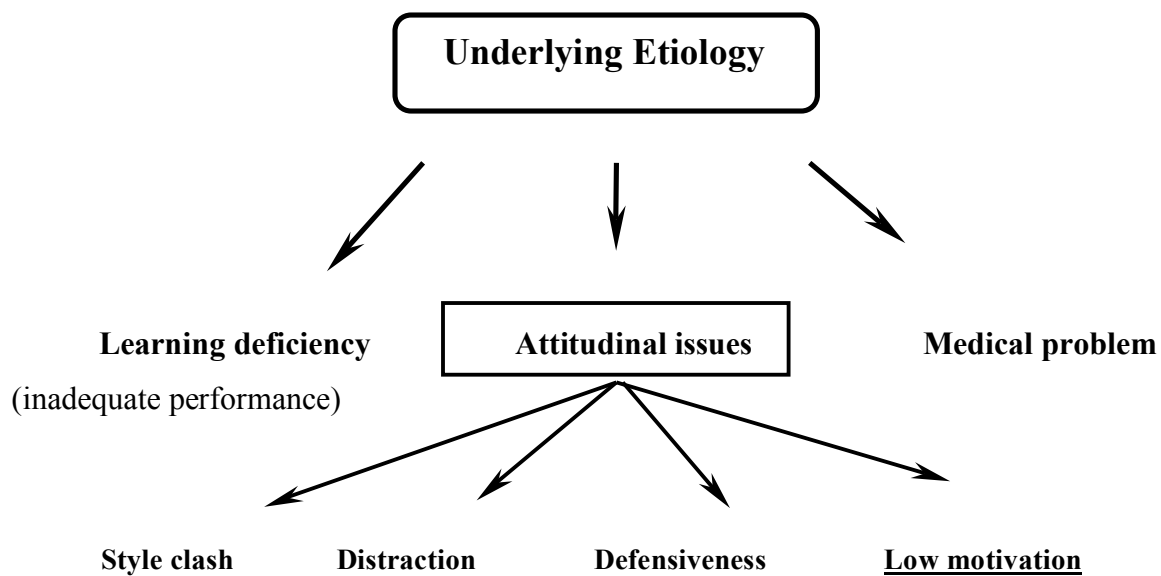
E

Expectations As discussed previously, your coaching and feedback will be more on target and you can avoid unreasonable expectations (usually, too high) by investigating what students can and cannot do at this level of training.

Teach Coach actively with priming (rehearsals, walk-throughs) and helpful feedback.

T Help Focus on helping students learn, rather than evaluating performance. Help the student identify skills that need work and special interests he/she wants to pursue. Create opportunities for students to work on these skills and interests.

Model Show the importance of self-critique by requesting feedback from your peers while the student is watching and self-assessing your own performance while the student is listening. (Schoen, 1983; Brookfield, 1993)



(4) **Low motivation** *“He just doesn’t seem to care”*

During workshops on clinical precepting, the chapter author usually starts by asking the participants to identify their concerns about teaching students. In virtually every workshop audience, the most frequent comments address students’ apparent lack of motivation. Comments like these are typical:

- *He just doesn’t seem to care*
- *She has no initiative*
- *I wonder why he is in school – he doesn’t act like he is interested*
- *They want their diploma handed to them – they don’t want to work for it*
- *Students today are just not as motivated as we were*

The preceptor's diagnostic task

Faced with symptoms of low motivation, the preceptor's job is to determine which of the following is a fundamental etiology underlying this behavior, including the fact that the student may, indeed, be under-motivated for reasons noted below.

Signs of low motivation may....

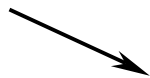
- ✓ reflect student's self-perception (conscious incompetent stage = hesitancy & defensiveness)
- ✓ be a reaction to an unsatisfactory learning environment
- ✓ indicate a student with a high level of distraction (e.g., an outside job, domestic issues, health)
- ✓ indicate student with high personal safety needs
- ✓ be a calculated "hunker down" strategy (e.g., the "just survive" risk-reduction attitude)
- ✓ actually be low motivation
 - Low stakes; no incentives for good performance or consequences for poor performance
 - Low expectation of success; self-fulfilling prophesy
 - Lack of interest (*I'm here because I'm expected to be here, not because I want to be here*)
 - Ticket-punching mentality (I'm just here to get my diploma)

Motivation: What is it? How does it relate to achievement?

This section reviews several concepts of motivation that may help preceptors "get inside the student's head" and better understand the student's perspective on "success" in a professional education program such as Pharmacy School.

Some definitions of motivation

- ◆ A stimulus that moves a person toward a goal
- ◆ An incentive or inducement to act in a certain way
- ◆ A need that causes a person to act
- ◆ The drive to attain a goal or perform at a certain level



"E" Train: Effort, Energy, Enthusiasm, Endurance, Excitement
--

Individuals who are perceived to have high motivation are often described with adjectives that begin with the letter “E”, thus they are said to be on the **E Train**. Many adjectives used to describe poorly motivated people begin with the letter “L”, thus these people are said to be on the **L Train**. (Lazy, lethargic, listless, lax, lackadaisical, lacking)

People are also said to be either **internally motivated** (intrinsic; high personal drive to succeed) or **externally motivated** (extrinsic; respond primarily to rewards or threats of punishment) which is an important distinction when considering student motivation (Lepper, 1983; Deci and Ryan, 1985).

What is the relationship between motivation and achievement?

The model on page 95 was developed by the chapter author to illustrate the mental calculations involved in deciding how much effort (e.g., the strength and persistence of response) to devote to a task in which there is an opportunity to excel. This B – O – R – E Model (Benefits, Odds, Risk, Effort) is based on performance and motivation concepts developed by Tolman (1955), McClelland (1985) and Atkinson (1987).

We encounter opportunities to excel at various tasks everyday. Determining our strength of desire to perform the task is the first consideration. In other words, do I throw myself into this project and give 100% effort, or just do enough to get by, or decide to not try at all. Calculating our strength of desire to perform a task is based, primarily but not exclusively, on three factors:

Benefit What is the reward for performing the task? Is the reward primarily internal; e.g., the satisfaction of a job well done, or is it external: a tangible benefit, public recognition, or financial incentives. Are the potential rewards important to me?

Odds What is the likelihood of performing the task well? Do I have a track record with this task? If not, can I "guesstimate" my chances of success based on other experiences? Is this an inherently difficult task that has a narrow margin of error (e.g., success is difficult to attain under the best of circumstances) or does the task appear to be manageable?

Risk What are the consequences of not performing well? If I do not perform well, will other people know about it (e.g., how public is the performance)? Do I care about the

potential risks? Are they sufficiently negative or punitive that they should be avoided?

Based on the assessment and balancing of potential rewards, chances of doing well and impact of not performing well, an individual makes an initial effort calculation (Tolman, 1955). If the individual decides to do something (versus electing to do nothing), the impulse to act undergoes additional modification to reach a final calculation of the effort that will be expended. Important modifiers of impulse to act include:

Competing or future tasks that will also require effort expenditure and will require prioritization of time and effort.

The level of challenge, degree of difficulty, in the task as related to the person's psychological make-up. Research has demonstrated that some people thrive on high challenge tasks that may exceed their capabilities, while other people are only comfortable undertaking tasks that are familiar and within their "competency comfort zone."

Reinforcers in the person's life and environment including: (1) the values and opinions of family, friends, and professional peers; (2) the values and mores of the community (e.g., public opinion), (3) current trends and fads in society (e.g., physical fitness movement, e-trading, second career, etc).

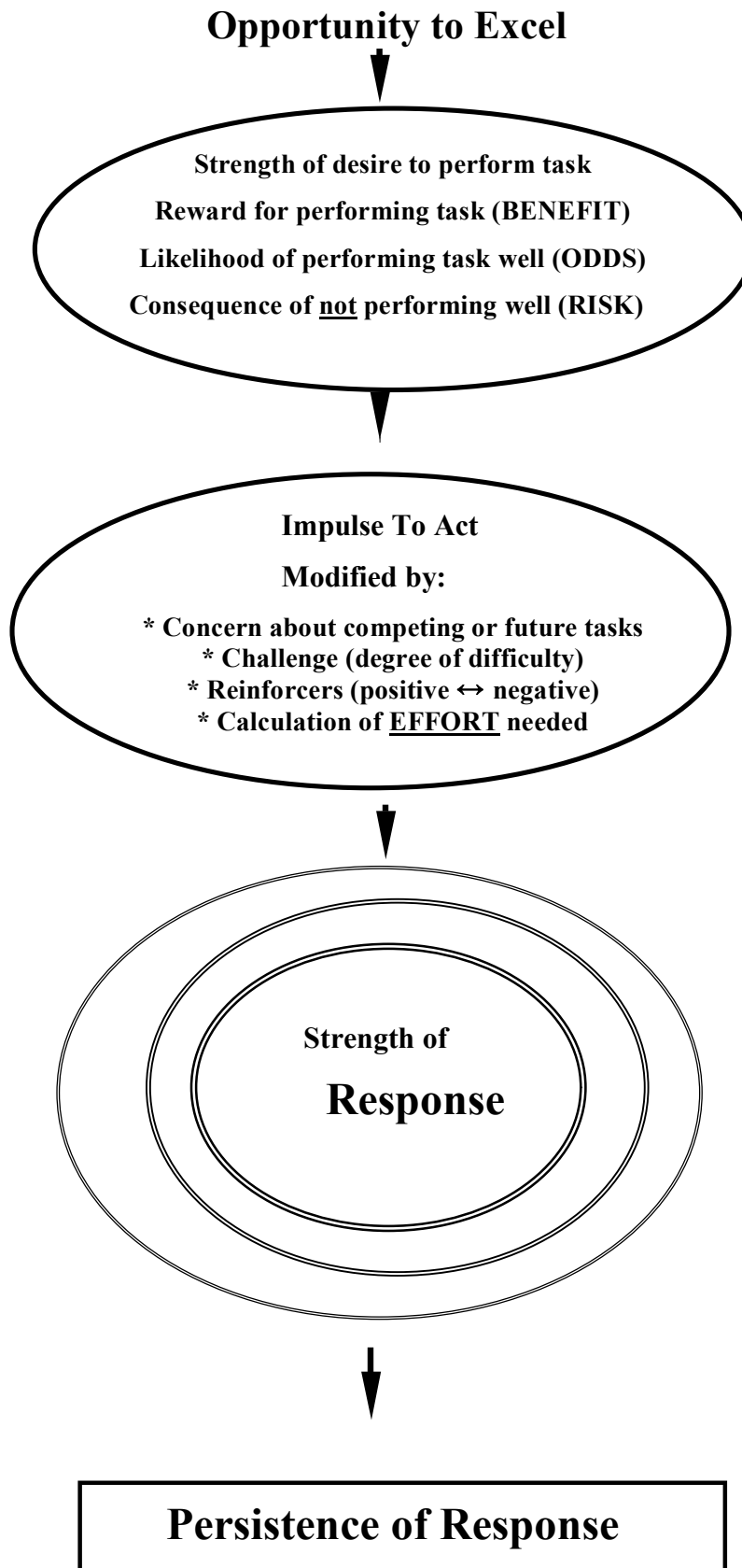
These and other potential modifiers are assessed to reach a final effort level determination. The initial intensity of response, assessment of the outcomes of performing the task and further B – O – R – E calculations ultimately determine the persistence of the response. Research has demonstrated that achievement is strongly linked to this effort calculation and that most people, when provided with an opportunity to excel, self-determine their own achievement outcomes by going through this motivation decision-making process. In other words, we determine our own fate.

Example of a B – O – R – E calculation to determine level of motivation

A dramatic example of benefit, odds, risk, effort calculation occurred in a recent Olympic Games. A well-known athlete, ranked in the top 3 in the world in his event for several years, was a clear favorite to win a medal. In the preliminary qualifying heat, the athlete performed well enough to make it to the semi-finals although his time was well off his usual standard. However, the goal in the prelims is to "just make it through" (get to the next round) so a less than total effort is the

recommended strategy for energy conservation purposes. In the semi-final heat the next day, the athlete again performed just well enough to reach the finals, qualifying 6th out of eight finalists. His time was still a couple of seconds slower than his normal pace but everyone assumed that he was just “saving himself” for the final. In the warm-up period prior to the finals that evening, the athlete “just didn’t feel right” and pondered his chances of medalling (finishing first, second or third) and also thought about three upcoming events in which he was scheduled to compete. Based on an acute awareness of his energy level and form based on 20 years of intense training, he concluded that expending maximum, 100%, effort tonight would at best only allow him to finish 5th or 6th, and would drain physical endurance needed for subsequent events. So, this world class athlete, after reaching an Olympic final which had been his goal for years, decided to “tank” the event (e.g., intentionally do less than his best). Observers were shocked by his last place finish. However, the athlete went on to win medals in three other events later in the Olympics. Asked later about the first race, the athlete commented, *“it simply wasn’t the right time or place to blow it all. I had to consider the big picture.”*

In a less dramatic way, students go through the same decision-making process as they juggle the many demands on their cognitive, emotional, financial and physical resources. Although it is difficult for teachers to accept, the density of the typical professional school curricula requires students to prioritize, and students may decide that a particular course, rotation or internship isn’t the right time to “blow it all” because of the big picture considerations.

B – O – R – E Motivation / Achievement Model (Benefits, Odds, Risk, Effort)

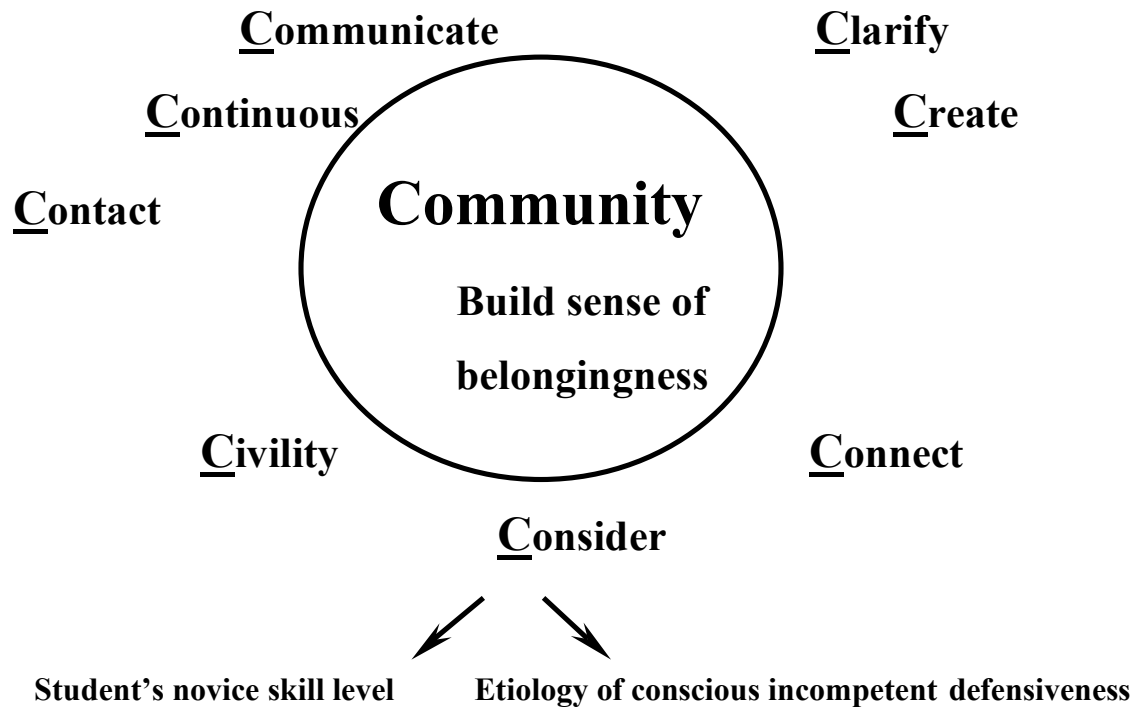
Take – home messages: motivation

- **Most students are highly motivated! They are highly motivated to graduate and obtain the credentials needed to enter the profession.** Students are skillful at analyzing the school environment and developing strategies that will allow them to achieve this goal in an efficient manner. These strategies, however, may make teachers perceive that they are not motivated to learn in the purest sense of scholarship. Indeed, some of these strategies are inconsistent with the learning methods that neurophysiologists have identified as essential for quality, in-depth learning.
- Although teachers tend to see students as either 100 % motivated or not motivated at all, in reality students are somewhere in between based on an on-going benefit, odds, risk, effort calculation which may produce different results for different courses. No person is 100% motivated all the time, and no person is uniformly un-motivated – even teachers.
- However, level of achievement is clearly intertwined with motivational level per the old adage, *“we get out of it, what we put into it.”*
- One of the principle roles of the teacher is to determine what it will take to make the student as strongly motivated as possible. What combination of benefits, odds, risks and modifiers will allow the student to conclude that this course or internship is deserving of high-level effort?

What Can Preceptors Do to Enhance Student Motivation?

This section will present suggestions for creating a internship that is likely to foster student motivation. The Seven C’s Motivation Model was developed by the chapter author to help teachers create a motivating learning environment for students. The seven C’s are preceptor behaviors that build a sense of community (affiliation with school and with faculty) that is a core psychological need in Maslow’s need hierarchy, and which has been demonstrated to enhance motivation to excel.

Seven "C's" Motivation Model



Explanation of the Seven C's Motivation Model

1. **Clarify** expectations at start of the internship (first day)

- Clear ground-rules. E.g., Communicate to the student. *"This is what we expect of you during this internship."*
- Ask students to identify skills they would like to develop/refine and to identify special interests they would like to explore during the internship.

2. **Create** active learning opportunities for students

- Hands-on (doing -- assign specific professional responsibilities to the student)
- Brains-on (thinking -- ask student to identify a research question to investigate)
- Minimize "shadowing" (observing) after the first few days

3. Connect personally with the student

- Preceptor - be accessible (make time for the student; be friendly; encourage questions)
 - talk about your own experiences as a student
 - drop "veil of perfection" (discuss your own mistakes & fears with a student)
 - model self-assessment (discuss situations you could have handled better)
- Schedule weekly protected time for "student-teacher" conversation & feedback

4. Consider the student's "novice" level and have realistic expectations about his/her skill level

- Avoid comparing the student's skills to your current skills (this is an unfair comparison)
- Understand etiology of student defensiveness (conscious incompetent; high safety needs)

5. Civil and Congenial

- Model the "golden rule." Be upbeat, positive, enthusiastic and courteous in your interaction with the student, your staff, other health professionals and patients/clients

6. Continuous Contact with the student

- Arrange your schedule so you can be with the student as much as possible, especially early in the internship and during the final week.
- Ask student to keep a log of unanswered questions/issues that arise during the week. Devote part of your regular meeting time with the student to address these questions. The question/issue log is designed to keep you in contact with the student's concerns.

7. Communicate at student's level of understanding (this is called "cognitive congruence")

- Be willing to talk about topics and issues that interest the student
- Explain scientific and patient care concepts at the student's level of understanding

- Use practical, everyday examples to illustrate concepts that the student may not grasp
- Confirmation – always ask the student if your answer to his/her question was clear and actually answered the question. Ask the student if they understood your explanation.

Good Beginnings for Student Internships

These “rules of the road” guidelines were developed for previous training workshops conducted for School of Pharmacy preceptors. Some of the suggestions are similar to the ideas in the Seven C’s Model but other important “to do” items are identified. Attention to these items will help you create a well-planned and effectively managed educational experience for the student – an important ingredient in the recipe for good student motivation.

Before the student arrives:

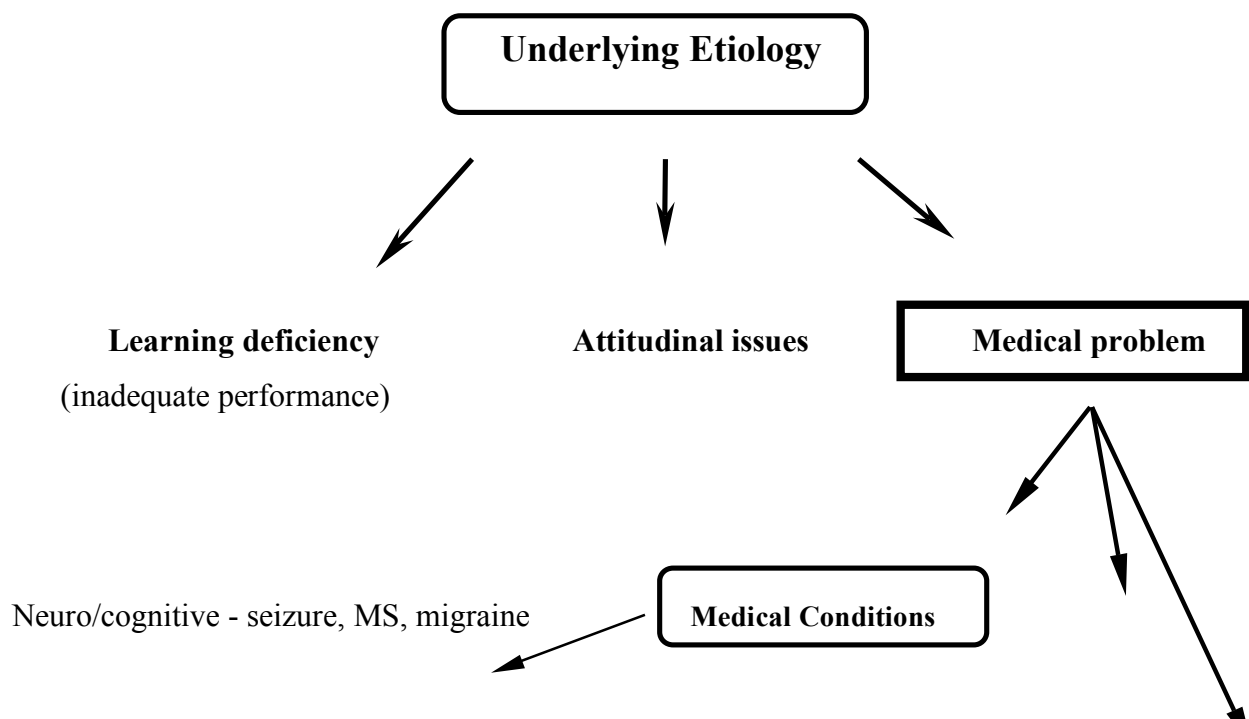
- ✓ **Arrange your schedule so you will be “on-site” as much as possible during the rotation**
- ✓ **Have time set-aside to meet one-on-one with student on the first day**
- ✓ **Orient other staff in the practice site about the student rotation and the likely impact on operations**
 - Orient staff about any responsibilities/tasks they will have related to the student

When the student arrives:

- ✓ **Welcome student and introduce staff**
- ✓ **Clarify expectations: (Be precise & up-front to avoid problems down the road)**
 - Ask student to discuss his/her background / expectations / goals
 - Review the school’s expectations for the internship/rotation
 - Communicate your personal expectations for the internship
 - Describe the students’ responsibilities and how (if) they will evolve/change
- ✓ **Ask student to review prior learning experiences and level of confidence in performing**

certain tasks

- ✓ **Review the evaluation form for the internship and schedule dates/times for a mid-way “in-progress” assessment and the final evaluation**
- ✓ **Introduce staff & review their responsibilities** As appropriate, involve staff in student’s orientation
- ✓ **Review the following FAQ (frequently asked questions) Provide a “FAQ” sheet with answers**
 - Routine policies/procedures/methods of operation student should know
 - Your special interests and skills
 - Unique features of this practice location / community
 - Nature of patient population typically served by this practice location
 - Student’s “space” (e.g., desk, locker, phone, parking space, etc.)
 - Weekly/daily schedule indicating when student is expected to be present
 - Guidelines for students’ use of the phone, fax or e-mail
 - Dress code / appearance expectations
 - Your typical weekly schedule
 - What to do if student is ill or will be delayed
 - Guidelines for breaks and lunch hours



Metabolic - DM, Graves Dz.

Cardiovasc - CAD, CHF

Hearing & vision deficits

Gynecologic - pregnancy, STD

Anorexia & bulimia

Psychiatric Conditions

Depression - manic depression

Severe adjustment disorder

Chronic anxiety disorder

Schizophrenia & schizoaffective disorders

Physical, sexual & child abuse

Chemical Dependency

Alcohol

Cocaine

Family member with chemical dependency

**Source: Mayo Clinic Medical
School Fitness Program**

A contributing etiology for many of the dysfunctional student behaviors discussed in this chapter may be a bona-fide medical disorder. The student may, or may not, be aware of the disorder. Dysfunctional behavior driven primarily by a medical/mental health disorder is rare (less than 5% of all students with “problems”) but these situations do occur as demonstrated by the cases presented on the next page. Discussion of medical conditions in students, and how these problems may contribute to sub-standard performance or behavioral problems is beyond the scope of this chapter. However, the possibility of an underlying medical etiology should be on the preceptor’s index of suspicion when dealing with a particularly challenging student – especially students who display very erratic behavior, extreme emotional swings or sudden drops in performance level.

As indicated in the chart above, medical etiologies for challenging student behavior can include a variety of medical conditions that may influence intellectual capacity and the student’s emotional stability, mental health disorders including abusive relationships, and chemical dependency, including co-dependency situations.

If you have well – founded reasons to be concerned about a student’s health, contact the program director at the university by telephone and share your observations. Again, do not communicate unconfirmed hunches about student performance or behavior in a memo or by e-mail.

Case- Studies of “Challenging” Students with Underlying Medical Conditions

The following examples of medically compromised students are based on actual cases the chapter author has encountered. The situations depicted in the cases are indicative of the types of student behaviors and problems that might be “red flags” for a possible underlying medical condition.

A once-outstanding student has had a progressive decline in academic performance and personal appearance accompanied by frequent absences from his current internship site. This morning, he arrived an hour after the office opened and looked like he had been up all night.

This student was diagnosed as being alcohol-dependent and agreed to enroll in a treatment program which he completed successfully. He re-entered school and has performed well.

This female student called in sick numerous times over the past month and has had verbal conflicts with other students and staff. Yesterday, she yelled at a patient who complained about how long he had waited to be seen.

This student was involved in an abusive relationship and recently learned she was pregnant. She was referred to Psychiatry and Obstetrics. Following a 6 month LOA(Leave of Absence), during which she successfully ended her relationship with the abusive boyfriend, the student resumed her educational program with accommodations for pregnancy leave and child care. She completed the curriculum without further incident.

A preceptor received second-hand reports from co-workers that a student has become increasingly confrontational with other students and staff, using abusive language and making derogatory comments about his colleagues. Last night, he got into a loud, heated argument with another student.

This student was diagnosed with chemical dependency and entered a treatment program as a condition for re-entry into the program after a probation period. However, he discontinued

treatment and was not granted medical clearance to return to the program. He left school rather than complete the mandated treatment. He was killed in an automobile accident two years later while driving under the influence.

This student was asked to repeat her internship after receiving a low grade in a previous internship and failing to complete a summer remediation. The student's evaluations indicated she frequently misinterpreted directions from instructors, had difficulty communicating with patients, and sometimes appeared to be disoriented.

A physical evaluation revealed that the student had a profound hearing deficit which she was hiding for fear of dismissal. The student was fitted with hearing aids and her instructors were informed of the situation. After a period of training with audiologists, the student returned to school, received good evaluations for the remainder of the curriculum and graduated on-time with her classmates.

Guidelines for Conducting an Intervention Meeting With A Challenging Student

When you have concerns about a student's performance or attitude/behavior, it is appropriate to schedule a closed-door intervention meeting with the student to "get to the heart of the problem." Preceptors are often hesitant to do this for fear of an emotional blow-up and delay such a meeting too long, hoping that the problem will work itself out. As a consequence, the situation is not addressed and it usually gets worse, rather than better.

Guidelines for conducting a meeting with a challenging student

- ✓ Establish specific time and place for a private meeting. Before the meeting, talk to the student and describe the purpose of this meeting. The student should understand that this is not a routine "how's it going" meeting.
- ✓ At the beginning of the meeting, inform the student of your perception of the problem. Give a calm, non-judgmental description of specific and recent incidents or behaviors.
- ✓ Describe why you believe this is a serious problem. Discuss consequences to patients/clients, the staff, other students and the overall internship, and, most importantly, to the student involved. As

appropriate, outline any other factors, beyond the student's control, that may be contributing including your own responsibility for aspects of the problem.

- ✓ Ask the student for his/her perception of the situation. Do not interrupt, contradict or reject the student's thoughts until they finish "their side of the story." Take notes while the student is explaining his/her perspective. Use these notes to review areas where your observations and perspectives are different after the student has said everything he/she wants to contribute.
- ✓ Ask the student what he/she believes should be done about the problem. If you are lucky, the student will identify a reasonable course of action. However, the student may be "clueless" about how to fix the problem or may suggest strategies that you know will not work. In this case, it is your responsibility to propose a definite plan you want the student to follow.
- ✓ Develop a plan of action which communicates your expectation for future actions / performance. For documentation purposes and to make expectations clear, provide the student with a typed copy of this plan within 24 hours.
- ✓ Describe consequences of non-compliance with the plan (e.g., failing grade; termination of internship, description of the problem behavior on the student's evaluation form)
- ✓ Ask student if he/she is willing to comply with the plan. Make it clear that you consider compliance to be essential to the student's successful completion of the internship.
- ✓ Establish a specific date and time for a follow-up progress meeting.
- ✓ Close by reminding the student of the positive benefits of program completion (be as encouraging as feasible given the circumstances)

Sources for intervention meeting protocol: Hassenfeld, 1993; Steinert, 1993; Hendricson, "Clinical Teaching" and "Difficult Student" faculty development workshops at University of Texas Health Science Ctr. – San Antonio.

References

- Atkinson JW, Birch D. *Introduction to Motivation (2nd ed)*. New York: Van Nostrand, 1987.
- Baron RA, Countering the effects of destructive criticism: the relative efficacy of four interventions. *J Applied Psychology*. 1990; 75: 235-45.
- Brookfield, SD. *Becoming a Critically Reflective Teacher*. San Francisco, Calif: Jossey-Bass, 1995.
- Civikly JM, Pace RW, Krause RM, Interviewer and client behaviors in supportive and defensive interviews. In: BD Rubin (Ed.) *Communication Yearbook 1*. New Brunswick, JL: Transaction Books. 1977.
- Darwin C. *The Descent of Man*. London: John Murray. 1871.
- Deci EL, Ryan RM. *Intrinsic Motivation and Self-determinism in Human Behavior*. New York: Plenum. 1985.
- Druckman D, Bjork RA (eds.). *In the Mind's Eye: Enhancing Human Performance*. Washington DC: National Academy Press, 1991.
- Eadie WF. Defensive communication revisited: a critical examination of Gibb's theory. *Southern Speech Communication J*. 1982; 47: 163-77.
- Everson HT, Tobias S. The ability to estimate knowledge and performance in college: A metacognitive analysis. *Instructional Science*. 1998; 26: 65-79.
- Farr MJ. *The Long-Term Retention of Knowledge and Skills*. New York: Springer-Verlag. 1987.
- Forsyth DR, McMillan JH. Practical proposals for motivating students. *New Directions for Teaching & Learning*. 1991; 45 (Spring): 53-65.
- Gibb JR. Defensive and supportive communication. *J Communication*. 1961: 11: 141-48.
- Gilbert DT, Giesler RB, Morris KE. When comparisons arise. *J Personality & Social Psych*. 1995; 69: 227-236.
- Hassenfeld I, Lavigne G. Issues raised by troubled residents' need for psychotherapy. *J Medical Educ*. 1987; 62: 608-610.
- Hendricson WD, Kleffner JH. Curricular and Instructional Implications of Competency-based Dental Education. *J Dental Education*. 1998; 62(2): 183-196.
- Hoffman RR. *The Psychology of Expertise: Cognitive Research and Empirical AI*. New York: Springer-Verlag. 1991.
- Johnson P. The Acquisition of Skill. In: Smyth MM, Wing AM (eds). *The Psychology of Human Movement*. London: Academic Press, 1984.

Kowalski RM, Leary MR, Strategic self-presentation and the avoidance of aversive events: antecedents and consequences of self-enhancement and self-depreciation. *J Exp Social Psych.* 1990; 26: 322-36.

Kruger J, Dunning D. Unskilled and unaware of it: how difficulties in recognizing one's own incompetence lead to inflated self-assessments. *J Personality and Social Psych.* 1999; 77(6): 1121-1134.

Lepper M. Extrinsic reward and intrinsic motivation: Implications for the classroom. In: Levine J, and Wang M. (Eds.) *Teacher and Student Perspectives: Implications for Learning*. Hillsdale, New Jersey: Erlbaum. 1989.

Marsh H, Byrne B, Shavelson R. A multifaceted academic self-concept: its hierarchical structure and its relation to academic achievement. *J Educational Psych.* 1988; 80: 366-380.

McPherson SL, Thomas JR. Relation of knowledge and performance in boy's tennis: Age and expertise. *J Experimental Child Psychology.* 1989; 48: 190 – 211.

Maki RH, Jonas D, Kallod M. The relationship between comprehension and metacomprehension ability. *Psychonomic Bulletin & Review.* 1994; 1: 126 – 129.

Martenson D. Students' approaches to studying in four medical schools. *Med Educ* 1986; 20: 532-534.

Maslow AH. *Motivation and Personality*. (2nd ed). New York: Harper & Row, 1970.

McClelland DC. *Human Motivation*. Glenview, Illinois: Scott, Foresman. 1985.

Moreland R, Miller J, Laucka F. Academic achievement and self-evaluations of academic performance. *J Educ Psychology.* 1981; 73: 335-44.

Price GE, Dunn K, Dunn R. *Learning Style Inventory/Productivity Environmental Preference Survey*. Lawrence, Kansas: University, 1982 (2nd edition).

Schoen D. *The reflective practitioner: how professionals think in action*. New York: Basic Books, 1983.

Sinkavich FJ. Performance and meta memory: Do students know what they don't know? *Instructional Psychology.* 1995; 22: 77-87.

Slattery MJ, Hagen PT. When things go wrong: medical evaluation of the student. In: (Frank, E. Ed.) *Teaching Techniques for Educators in the Radiological Sciences*. Rochester, Minn: Mayo Clinic Foundation, 1997.

Stamp GH, Vangelisti AL, Daly JA. The creation of defensiveness in social interaction. *Communication Quarterly.* 1992; 40(2): 177-90.

Steinert Y, Levitt C. Working with the "problem" resident: guidelines for definition and intervention. *Fam Med* 1993; 25: 627-632.

Tesser A, Rosen S. The reluctance to transmit bad news. In L. Berkowitz (Ed.) *Advances in Experimental Psychology* (Vol. 8). New York: Academic Press. 1975

Tolman EC. Principles of performance. *Psychological Review*. 1955; 62: 315-326.

Waln V. Interpersonal conflict interaction: an examination of verbal defense of self. *Central States Speech Journal*. 1982; 33: 557-66.

Weinstein ND, Lachendro E. Egocentrism as a source of unrealistic optimism. *Personality & Social Psych Bulletin*. 1982; 8: 195-200.

Winer S, Majors R. A research note on supportive and defensive communication: an empirical study of three interpersonal communication variables. *Communication Quarterly*. 1981; 3: 166-72.

Witkin HA, Goodenough DR, Oltman PK. Role of field dependent and field independent cognitive styles in academic evolution: a longitudinal study. *J Educ Psych* 1977; 69: 197-211

Role Modeling for Clinical Educators

Ellen Richter Ettinger

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Although this article was written for clinical instructors who work in institutional settings, the principles put forward apply in any clinical setting.

Abstract:

Role modeling is a basic component of the educational process. In order to become better role models, clinical educators should be conscious of behaviors they demonstrate, and the broad range of activities and attitudes that students observe and emulate.

Key Words: Role model, teaching by example, professional demeanor.

Introduction

Students learn from what they see. Do clinical educators serve as positive role models?

Research has shown the significance of role modeling in the development of professionals in many areas. In medicine, (1-3) nursing, (4) administration, (5) and education, (6-8) for example, the impact of role modeling has been recognized. A program at the Indiana University School of Medicine (1) presented faculty members, staff, students, and administrators with the opportunity to discuss and share thoughts, attitudes and techniques of role modeling. It was hoped that following this program, "the participants would be more cognizant of their influence as role models and would be motivated to become better role models."

Role modeling is a basic component of the learning process. As students observe clinical educators, they learn more about how a health professional works and behaves, and as they observe, they begin to emulate what they see. The basic definition of role

modeling is a function of teaching by example. The clinical educator teaches, in part, by *demonstrating* polished clinical skills, sharp analytical reasoning, effective decision-making, comprehensive record-keeping, and caring doctor-patient interactions. The student looks to the educator, in a position of authority, and learns how one functions as a clinician.

Educators are not always aware of the influence that they have, by their example, in developing their students' skills, competence and professionalism. Although faculty members may be most conscious of demonstrating good clinical care, the student may be observing many other aspects of the clinician's behavior and performance, as well. By virtue of their authorized and respected position as educators, they may be looked upon as examples and models of how the clinician should act; their behaviors, attitudes and actions are looked upon as standards.

It should be noted that role models can be positive or negative. The educator who approaches patient care hurriedly, who writes incomplete records, or who acts insensitively to patients is as much an example to students as one who demonstrates patience, competence, and sensitivity. Even if they are carried out inadvertently, the former behaviors can be seen by students and mistakenly interpreted as appropriate, usual, acceptable professional responses.

To students, interns, and residents, the manner in which educators carry themselves is a reflection of the profession; as students learn more about the clinical discipline they are entering, clinicians with whom they come into contact are likely to be used in the formation of the image they develop of their profession.

By becoming more aware of their influence as role models, clinical educators can be more conscious of

1. the behaviors they demonstrate,
2. the broad range of activities that students observe in authority figures, and
3. improvements they can make to become better role models.

Table 1
Terms Associated With Modeling

Role Model	a person in a position to set an example for others (usually someone in a position of authority).
Mentor	an expert in a particular field (or fields) who works to develop the skills and abilities of another person.
Mentee	the person who works under the guidance of a mentor, to develop his or her skills.

Role Modeling vs. Mentoring

The terms role modeling and mentoring are often used synonymously, although here are some important differences (Table 1). The role model is a person who is observed by others, as an example. In theory, a learner may watch someone's actions and performance intently, without ever speaking to the person individually. (Athletes and prominent leaders, for example, are often thought of as role models for children, although they may never meet in person.) In addition, the person functioning as a role model may not always be aware that he or she is being observed, and may not be conscious of all the behaviors that are being monitored. Thus, whether or not the role model is aware of it, his or her function as model continues because the observer is watching.

The mentor (9-10) is an expert who spends designated time with a learner, the mentee. He or she is usually very observant in identifying the mentee's strengths and weaknesses, and helpful in providing direction and support. The mentor must be accessible to meet with the mentee, and provides guidance and feedback.

One may serve as both mentor and role model, if both functions are carried out; the two terms, however, are not equal and there are important characteristics that differentiate them. Mentoring is more of an active process, in which the mentor deliberately takes the time to meet with the mentee to work on specific skills or projects. Role modeling, on the other hand, frequently is more of a passive process on the side of the professional. By

virtue of his or her position, the role model is observed by a student, who learns from the model's example, *whether or not the model is conscious of this*.

Within institutions of clinical education, there are many faculty members who take on the active responsibility as trusted mentors. *All* faculty members, however, have a significant—though not always obvious—function as role models. Students are attentive onlookers, carefully analyzing, echoing, imitating and following actions, attitudes, and behaviors they observe.

Components of Role Modeling for the Clinical Educator

1. *Clinical Competence* – The clinical educator must emit a strong sense of competence, confidence and proficiency in the clinic. There is no substitute for competence. The educator must consistently demonstrate mastery and facility in carrying out clinical tests, analyzing test results, and advising patients.

The educator should demonstrate the act of being a “life-long” learner. By bringing recent articles and journals into the clinic, applying relevant findings from the current literature to patient care, discussing continuing education lectures they have attended, and describing other post-graduate learning experiences, the educator can show, by example, that the most capable clinician is one who continues to learn throughout the years, of one's professional career.

2. *Professional Demeanor* – Everything the educator says or does in the clinic can be interpreted by students as a model of how one ought to act. From the way he or she dresses, to the attitudes displayed towards patients, the educator reflects an image of appropriate conduct and behavior for the clinician. Areas of professional demeanor that students observe include:

- Appearance and dress
- Attitudes towards patients and students
- Punctuality
- Attendance Record
- Organization of equipment, records and physical space

- Clinical habits

What sense of professional conduct does the clinical teacher display? By watching the instructors in their clinics, students build on their developing image of how one should practice as a health professional. Does the educator arrive on time for clinical care and proceed in a timely manner? Does he or she introduce him- or herself to the patient personally, and appear open and receptive to patient concerns? Does he or she maintain an organized examination room, with a neat working spaced and clean equipment? Does he or she always display good clinical habits, such as washing hands between patients?

The educator must demonstrate a sense of professionalism.

One of the best ways students have of learning about “professionalism” is by watching doctors in the clinic. It would be difficult to start a course in the didactic curriculum of our schools and colleges of optometry (pharmacy) called “Professionalism 101: A Guide to Professional Conduct.” Such a course would probably only be able to touch the surface of certain clinical practices which may seem logical and obvious, but which are not always carried out, in the ideal form, in reality. Discussing these areas may be beneficial, but what students discuss in theory is not always applied, in practice. By observing appropriate professional behavior in the clinic, students gain a sense of *how* these behaviors fit in with the delivery of clinical care. The education of professionalism is probably taught very effectively where it can be observed and applied most readily and directly – in the clinic.

3. *Doctor-Patient Interactions* – It has been said that “patients don’t care how much you know, until they know how much you care.”

Experienced clinicians know that the effectiveness of the doctor-patient relationship can actually elevate the quality of care provided by making the patient more relaxed, cooperative, responsive and confident in the doctor. The level of patient compliance also may be enhanced.

When they first start working in the clinics, students are often more concerned with the mechanical aspects of clinical care than with their communication skills and interpersonal interactions; their ability to reach patients, however, relies so heavily upon their ability to form a successful doctor-patient rapport. In addition to mastering the technical and analytical components of clinical care, students also must recognize how important it is to provide a supportive, sensitive environment for their patients, and to exhibit caring, compassionate attitudes.

All patients deserve sensitive, humane, compassionate health care. By demonstrating these qualities in *our own actions*, clinical educators can help our students learn more about the art of caring for patients.

4. *Ethical Values* – One of the difficulties of teaching medical ethics is that it would be difficult to present every situation and decision that students will encounter in their careers; even if one could do so, it would be inappropriate to establish “correct responses” or “standard answers” because the area of ethics involves deeply personal decisions. One cannot dictate the decisions of others; however, one can *demonstrate* the process of ethical decision-making and clinical performance as students train in the health care environment.

Educators must be respectable, (worthy of the respect of others) and respectful (showing respect to other people). They must display a sense of integrity, honesty, decency and trustworthiness. By demonstrating ethical values in the decisions and recommendations made, instructors can facilitate the development of ethical and moral attitudes in their students.

Areas of medical and biomedical ethics have been examined, (11-15) and there is strong support for educating students about ethics during their clinical training programs. (16-19) As discussed, one-way students learn about ethics is by watching their instructors. Educators should be conscious of the messages they convey to students with respect to the following questions.

Do I:

- always act in the best interests of the patient?

- see that my patient has access to all necessary services, and that only those services that are necessary for the patient are provided?
- make appropriate referrals, when necessary, and choose competent and qualified referral sources?
- provide the patient with truthful, adequate information about the status of his or her health?
- maintain the confidentiality of my patient's medical status and clinical data?
- stay up-to-date with new clinical and scientific findings so I can provide my patients with modern, high quality clinical care?

5. *Social Consciousness* – Health professionals should care about individuals, and should possess an interest in the social issues within our society. The economic, social, political, environmental, and medical dilemmas within our communities require involvement and action by those trained in the health professions.

The major focus of clinical education is on the patient-doctor encounter, and the development of good clinical skills. Such attention and rigorous training is appropriate, but often little (or no) attention is given to the social concerns of the community. Students graduate, often in significant debt as a result of the high costs of clinical education, with substantial financial pressures and obligations. Often, though, no notice is paid to the problems of the world. The resulting disposition is frequently referred to as the “me first” generation,” or the sentiment of “looking out for number one.”

Although new graduates and practicing clinicians must respond to the realistic personal pressures and responsibilities that exist, a sense of concern for humanity, and for the problems of others, must also exist. In the community, the nation, and the world, problems abound. The plight of the homeless, the poor, and the abused continues to grow, and patients with AIDS and other debilitating illnesses look for answers to their daily hurdles. Such challenges within the community warrant the attention of involved individuals.

The development of social consciousness should be part of the education of clinical students. The significance of faculty role models in demonstrating responsible, committed actions must be recognized. A new “Faculty Committee on Social Concerns

and Community Relations” has been established at the State University of New York-State College of Optometry, under the leadership of Dr. Martin Birnbaum, to recognize this facet of clinical education. Faculty on the committee meet to discuss and identify the problems that exist in the area, and they consider how members of our college community can contribute to the needs of our local community. Through special projects, (e.g. food and clothing drives, with collection baskets in our lobby; lecture programs on social issues and concerns; volunteer vision screenings and eye care for underserved and needy populations in our vicinity), faculty members demonstrate through their actions that aside from being good doctors and educators, they are also concerned citizens.

Summary

Patterning one’s behavior after a respected individual is a common behavior. Clinical instructors should be aware of the five important areas, discussed here, in which they serve as role models for their students:

- Clinical Competence
- Professional Demeanor
- Doctor-Patient Interactions
- Ethical Values
- Social Consciousness

Educators should be aware that part of their role, as teachers, is to teach by example.

References

1. Ficklin FL, Browne VL, Powell RC, and Carter JE, “Faculty and House Staff Members as Role Models.” *J. Med. Educ.* 1988; 63:392-396.
2. Levinson W, Tolle SW, and Lewis C. “Women in Academic Medicine.” *New Engl. J. of Med.* 1989; 321(22):1511-1517
3. Roske NA and Lake K, “Role Models for Women Medical Students.” *J. Med.Educ.* 1977; 52:459-66.

4. Erickson HC, Tomlin EM, and Swain MA. *Modeling and Role-Modeling – A Theory and Paradigm for Nursing*. Englewood Cliffs, NJ: Prentice Hall. 1983.
5. Josefowitz N. *Paths to Power*. Reading, MA: Addison-Wesley Publishing, 1980.
6. Eble KE. *The Craft of Teaching*. San Francisco: Jossey-Bass Publishers, 1988.
7. Wilkinson J. "Varieties of Teaching," In: Gullette MM, ed. *The Art and Craft of Teaching*. Cambridge, MA: Harvard University Press, 1984:1-9.
8. Wilson RC, Gaff JC, Dienst ER, Wood L, and Bavry JL. *College Professors and Their Impact On Students*. New York: John Wiley and Sons. 1975.
9. Phillips-Jones L. *Mentors and Protegees*. New York: Arbor, 1982.
10. Ettinger, ER, "Reaching for Excellence: Mentoring and Networking." *J. of Amer. Opt. Assoc.* (In Press).
11. Warner, R. *Morality in Medicine: An Introduction to Medical Ethics*. Sherman Oaks, California: Alfred Publishing, 1980.
12. Center for Vision Care Policy of the State University of New York – Policy Insight. "Ethical Challenges in the New Optometry." New York: Spring-Summer, 1986.
13. Bulger EB. "The Need for an Ethical Code for Teachers of the Basic Biomedical Sciences." *J. Med. Educ.* 1988; 63:131-133.
14. Dunstan GR, and Shinebourne EA. *Doctor's Decisions – Ethical Conflicts in Medical Practice*. New York: Oxford University Press, 1989.
15. Philips M and Dawson J. *Doctor's Dilemmas – Medical Ethics and Contemporary Science*. New York: Methuen Inc. 1985.
16. Puckett AC, Doyle GG, Pounds LA and Hash FT. "The Duke University Program for Integrating Ethics and Human Values Into Medical Education." *Acad. Med.* 1989; 64:231-235.
17. Miles SH, Lane LW, Bickel J, Walker RM, and Cassel CK. "Medical Ethics Education: Coming of Age." *Acad. Med.* 1989; 64:705-714.
18. Walker RM, Lane LW, and Siegler M. "Development of a Teaching Program In Clinical Medical Ethics at the University of Chicago." *Acad. Med.* 1989; 64:723-729.
19. Barnard D and Clouser KD. "Teaching Medical Ethics in Its Contexts: Penn State College of Medicine." *Acad. Med.* 1989; 64:743-746.

WRITE YOUR ANSWERS IN THE "EXERCISE BOOKLET."

Exercise Ten

Think about two people in your life who served as role models, either in your personal or professional life. Write their first names in the spaces provided. Then list three positive qualities that you observed in each of these persons that you have tried to emulate.

First Name _____ First Name _____

Positive Characteristics

1. _____ 1. _____

2. _____ 2. _____

3. _____ 3. _____

HOW NOVICES BECOME EXPERTS

Let's begin with a question. How does a student progress from being a tennis player, biology major, track star, music major, or whatever to becoming a pharmacist? What is the process that a person must pursue to become a pharmacist? In order to answer that question it is necessary to define what it means to be a pharmacist. The road from being a student to becoming a professional is analogous to taking a trip. You need to know where you are going before you can make the necessary travel arrangements. In education students need to know what the end requirements are in order for them to become successful practitioners. To clarify what it means to be a pharmacist, please complete the following exercise.

BE SURE TO WRITE YOUR ANSWERS IN THE "EXERCISE BOOKLET."

Exercise Eleven

(You may outline your answers using general statements. You do not have to go into great detail.)

- 1. What does it mean to be a member of your profession? How does pharmacy differ from all other professions? What body of knowledge, skills, and values does your profession possess that NO OTHER PROFESSION possesses?**
- 2. How does one elect or how is one chosen to become a pharmacist?**
- 3. What is the process for a person to become a pharmacist?**

You probably listed a unique "fund of knowledge" as one of the characteristics that distinguishes your profession from every other profession. Often this includes unique skills and values as well as knowledge. Please answer the following question.

Exercise Twelve

Please write your definition of knowledge.

Two definitions of knowledge according to Webster's Ninth New Collegiate Dictionary that are relevant to helping teachers understand how novices become experts: OBJECTIVISM and CONSTRUCTIVISM.

Definitions:

OBJECTIVISM – The sum of what is known: the body of truth, information, and principles acquired by mankind.

CONSTRUCTIVISM – The fact or condition of knowing something with familiarity gained through experience or association.

A few years ago this headline appeared in the local paper, "Dental Researchers Discover New Jaw Muscle in Humans." The story went on to say that two researchers, Drs. Dunn and Hack, proclaimed that they had discovered a fifth muscle used in mastication. Most health science students who studied anatomy were taught that there were only four muscles of mastication. They published the results of their research in the *Journal of Craniomandibular Practice*. Are Drs. Dunn and Hack correct or are the anatomy books that taught there are four muscles of mastication correct?

This example helps explain the difference between OBJECTIVISM and CONSTRUCTIVISM. The OBJECTIVISTS would look to the anatomy books for the correct answer and conclude that there are four muscles of mastication. The CONSTRUCTIVISTS would say that the correct answer is the consensus of the professional community. This is an important distinction regarding how teachers view knowledge.

How will this discrepancy be resolved? After this article was published the scientific community will have a long discussion and other researchers will look for the fifth muscle of mastication. If they find that there is a fifth muscle of mastication the anatomy books will have to be changed and future students will learn something different than students learned in the past. The important point of this story is that what is known today does NOT remain static. As more research is conducted and new discoveries are made textbooks have to change and so do teachers. Professionals are continually faced with the dilemma of what to believe. Do I accept what I learned from my professors and textbooks during my professional education or do I accept what I read in the current

peer-reviewed professional journals? Objectivists would accept what they learned in school and the Constructivists would more likely accept what they read in current peer-reviewed professional journals. Constructivists would more likely seek additional information by doing further research or discussing this new information with other professionals.

Here are two examples from Pharmacy of what was once considered the best treatment for patients has changed as more research was conducted and a new "truth" was accepted by the professional community.

The long-standing treatment of ulcers involving antacids, H₂ antagonists and other drugs has been replaced by antibiotic treatment of h.pylori.

It used to be thought that beta-blockers were contraindicated in patients with heart failure, the thought being that their negative inotropic effect would affect the heart detrimentally. Now we know that the sympathetic blockade outweighs the negative inotropism, making beta blockers one of the few therapies to decrease morbidity and mortality in patients with heart failure.

How did these changes come about and what is its significance to clinical teachers? Were the health care providers wrong when they believed that treating ulcers involving antacids or that beta-blockers were contraindicated in patients with heart failure? No, that was the best information accepted by the professional community at that time. Further research changed that information and the health care community now uses different information to guide the treatment of patients with ulcers and heart failure.

It is incumbent on clinical teachers to help students develop a willingness to continually learn and to question in a professional manner any new information that is presented to them.

BE SURE TO WRITE YOUR ANSWERS IN THE "EXERCISE BOOKLET."

Exercise Thirteen

Think about some facts, principles, or uses of prescription or OTC drugs that you learned while you were going through your educational experience that are no longer accepted as true by your professional community.

Examples:**Causes of disease****Treatment of disease****Side effects of medications**

For the OBJECTIVISTS we can say that knowledge exists in the library or textbooks, outside anyone person's mind. CONSTRUCTIVISTS, on the other hand, would say that knowledge is only a consensus among the community of professionals based on continuing research and new discoveries. This distinction can have tremendous consequences in education. The following chart points out some of these differences

Two Views of Knowledge**OBJECTIVISM****CONSTRUCTIVISM**

Outside oneself in textbooks and other external sources.	TRUTH	Within oneself tested in discussion with other professionals.
Right answers	FOCUS	Enlarged understanding of ideas.
How can I teach? Lectures Teacher centered	TEACHING	How can students learn best? Small groups Student centered groups
Teacher	AUTHORITY	Group consensus
Large fund of knowledge	TEACHER PREPARATION	Learning the language and using the experience of students.
Correct vs incorrect	EVALUATION	Supporting answers with a rational.

TRUTH

This chart describes how OBJECTIVISM and CONSTRUCTIVISM differ regarding six factors that are important in teaching. People who look at knowledge from the objectivists view believe that truth is found in sources of information that are external to themselves, e.g. in the library, textbooks, etc. People who look at knowledge from the constructivists view believe that each person must decide for him/herself what is true based upon the best possible information available. *THIS DOES NOT MEAN THAT ONE PERSON'S OPINION IS AS GOOD AS ANOTHER.* It does mean that each person, after studying all the resources available, talking with colleagues, observing other professionals decides what is truth. Articles that appear in peer-reviewed journals always are viewed as more credible than articles that are not peer reviewed. This is the professional community deciding what is "true" and what is just opinion. What students are taught as truth during their professional education will continue to change throughout their professional lives. Truth changes because of new research discoveries and each person's clinical experience.

It has been thought that HIV patients on triple-cocktail therapy whose viral loads are (almost) undetectable and CD4 counts are elevated should continue their trimethoprim/sulfamethoxazole (Bactrim®) therapy because of the increased risk of pneumocystic carinii pneumonia. A recent study has shown that the risk of pneumocystic carinii pneumonia is, in fact, not increased and that patients on triple-cocktail therapy with low viral loads and increased CD4 counts do not need to continue their Bactrim®.

FOCUS

During their pre-clinical professional education students are often focused on "getting the right answer." Some teachers are upset about this but the system often forces students to concentrate on the right answer because that is the only way they can be successful in the current educational system. Think about all the time elementary and secondary students spend in preparing for the state sponsored examinations. Unless students pass these tests they are not allowed to proceed to the next grade level or to graduate. It is no wonder that when they come to professional school they focus on getting the correct answer rather than understanding the rational for WHY an answer is correct. CONSTRUCTIVISTS are just as concerned with helping students understand the supporting information for an answer as they are in helping students get the correct answer.

TEACHING

Teachers who subscribe to the OBJECTIVIST'S view of knowledge focus on what they can do as a teacher. This is often displayed by the comment, "I must cover the material." Lecturing is the preferred teaching method for objectivists because they can be in control of the teaching-learning situation. Students are usually passive in this learning environment. CONSTRUCTIVISTS focus on what can be done to help students learn. Their primary method of teaching is to design the learning environment so that students become active learners. Constructivists like to organize students into small groups and present problems for the students to solve. These teachers put the burden of learning on students and function as a resource of information. Rather than answering students' questions directly they might ask a series of questions to help students solve the problems themselves. This type of questioning helps students to organize their fund of knowledge and develop thought processes to help them solve future problems.

If a student gives incorrect answers or makes a mistake the OBJECTIVIST teacher would say something like, "You are wrong because the experts say . . ." or "What does your textbook say about this?" The CONSTRUCTIVIST teacher would probably say, "Why do you think you came to a different conclusion than your colleagues?" or "What do you see in the patient data that led you to your conclusion?" or "Have you considered that the patient has these symptoms and what do these symptoms represent?"

AUTHORITY

OBJECTIVISTS maintain that what the teacher says or what appears in textbooks is considered the truth. CONSTRUCTIVISTS believe that the professional community decides what is truth. Many states require professionals to participate in continuing education because they believe that knowledge changes and that if professionals do not continue to learn they will not be up to date with the latest discoveries and practices. Think about all the changes that have taken place in the last five years regarding prescription and OTC medications. It would be difficult for pharmacists to offer the best health care for their patients if they relied solely on what they learned in pharmacy school. Many new drugs and alternative treatments are discovered and made available each year. The professional community, NOT THE TEXTBOOK PUBLISHERS, approves these new treatments. Students must develop a habit of continuing to learn if they are going to provide the best health care for their patients. Students, also, must develop a sense of caution and not believe every study they hear about or read. Knowing the underlying research is important in determining whether or not to

accept the conclusions of a study. Clinical teachers can help students develop this cautious skepticism by discussing articles in current professional journals.

TEACHER PREPARATION

OBJECTIVISTS believe that having a large fund of knowledge is the best preparation for becoming a teacher. Knowing a lot of facts qualifies a person to be a teacher. This approach ignores the fact that knowledge changes and that what is believed as truth today will not necessarily be considered as truth tomorrow. CONSTRUCTIVISTS believe that having an adequate fund of knowledge is important but equally important is to understand the learner. Knowing what students know and their cultural background is equally important. All people interpret what they see and hear from their own experience. If students are not prepared by past experience and education to understand what teachers say they will not learn or they will learn the wrong facts and concepts. A good example occurred in the past decades with the introduction of computers. Many computer science teachers used a new language that their students did not understand and as a consequence students learned very little from their computer courses. Teachers must always speak to students in the language the students understand. True, students must learn the professional language to become experts but while they are novices, teachers must speak to them in a language the students understand. One word of caution; teachers should NOT use acronyms that students may not understand unless they explain these acronyms. Each profession has its own language and becoming an expert means learning this language. Understanding what students know is critical to being a good teacher. Unless students have the necessary prerequisite knowledge and experience they will NOT be able to understand the meaning of what is said. Teachers must use language that students understand.

Here are some examples of acronyms that students may not immediately understand and it is best to make sure they know what you are talking about.

BMT (bone marrow transplant)

ESRD (end stage renal disease)

HC (hydrocortisone or home care)

MCV (mean corpuscular volume)

NAD (no acute [or apparent] distress)

RDW (red cell distribution width)

One difficulty with the English language is the fact that the same word can have many different meanings. There is an old cliché, "Beauty is in the eye of the beholder." There is a similar statement that applies here. "Meaning is in the mind of the listener." What teachers say is not necessarily what students hear.

WRITE YOUR ANSWERS IN THE "EXERCISE BOOKLET."

Exercise Fourteen

Write as many word or phrases that you can think of when you hear the work "BAR."

One method teachers can use to determine whether or not students understood what they said is to ask them. The best questions to ask is, "Tell me what you understand about . . ." Do NOT ask, "Did you understand . . .?" The second question allows students to answer yes without any demonstration that they do understand.

Experts versus Novices

Please review pages 86-89 of the section on "Teaching Challenging Students."

One method that teachers can use to help students become experts is to describe their own thought processes when solving problems. Experts are UNCONSCIOUSLY COMPETENT and their thought processes are automatic. In order for experts to explain their thought processes to students it is necessary for them to bring to consciousness how they solve problems. To illustrate this process complete the following exercise.

WRITE YOUR ANSWERS IN THE "EXERCISE BOOKLET."

Exercise Fifteen

Write the schema (thought processes) that you have in your long-term memory for the following scenario.

"Mr. Chesterfield, a patient who has been a customer of yours for three years comes into your store at 7:00 PM with a prescription for Terfenadine. Mr. Chesterfield says he has a terrible sinus infection and severe headache. You check the man's medical profile and determine that this prescription may have an adverse reaction to other medications he is already taking."

Outline the thought process you would use to solve this problem.

By thinking through their own thought processes teachers can be better prepared to help explain to students how they solve problems. Students can benefit greatly from hearing how experts solve problems. This is not an easy task for teachers because they have been operating at the UNCONSCIOUSLY COMPETENT level and do not think about how they arrive at their decisions when working with patients who present with problems they have addressed many times in the past.

Summary

The differences between experts and novices are significant for two reasons.

1. Experts have a large fund of knowledge in a specific domain that is well organized and easily accessible while novices may know many facts but these are not well organized into useable schemas and are NOT easily accessible when needed.
2. Experts have developed strong reasoning and problem-solving skills so they can use their fund of knowledge efficiently. Novices have not yet developed their reasoning and problem solving skills to a very high level.

Clinical teachers are in a unique position to help novices become experts by requiring students to be active learners (see section on "One Model of Clinical Teaching). Rather than providing answers to students' questions, teachers can ask questions that guide students to the correct answers as well as help them develop the necessary thought processes to become experts.

**AFTER YOU HAVE COMPLETED THIS MODULE AND ALL THE EXERCISES
RETURN THE EXERCISE BOOKLET TO YOUR PROGRAM COORDINATOR IN
ORDER TO RECEIVE CONTINUING EDUCATION CREDIT.**