THE UNIVERSITY OF NEW MEXICO SCHOOL OF MEDICINE
TEACHER & EDUCATIONAL DEVELOPMENT
*Growing Today's Educators and Tomorrow's Practitioners*

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THE UNIVERSITY OF NEW MEXICO ◆ HEALTH SCIENCES CENTER
SCHOOL OF MEDICINE

# Faculty & Student Guide

## To Problem-Based Learning (PBL) Tutorials In Phase I Curriculum

## of the

## University of New Mexico School of Medicine

**Problem-based learning at the University of New Mexico School of Medicine began in 1979. Many people have contributed meaningfully to its development, implementation, and continuous improvement.**


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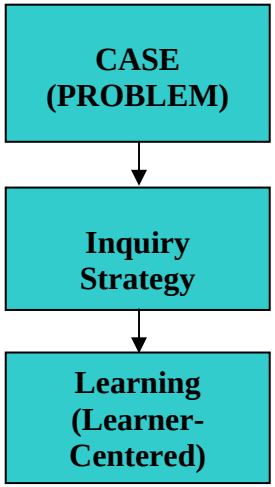
# What is Problem-Based Learning (PBL)?




**What does learner-centered mean?**

**What knowledge & skills does PBL develop?**

"Tutorial is…something that we could use for the rest of our lives and the rest of our careers to enhance our ability to understand a problem and to solve it."
Student in Class of 2001
During 1/01 Focus Group

Problem-based learning (PBL) is a method of learning in which learners first encounter a problem followed by a systematic, learner-centered inquiry and reflection process.[1] As applied to education for the health professions, PBL is a method designed to help students learn the sciences basic to medicine at the same time they develop the reasoning process used by physicians and other health professionals in their clinical practice.

- **The problem comes first without advance readings, lectures, or preparation.**
- **The problem serves as a stimulus for the need to know.**

Educational methods can be understood as part of a continuum, depending on who is responsible for directing the learning activities. In learner-centered methods such as PBL, **the learner decides what he/she needs to learn** rather than being told by the teacher.

Problem-based learning is designed to develop:

- Integrated, context-specific **knowledge** base
- **Decision-making/critical thinking** process and skills
- Self-directed, **life-long learning** skills
- **Interpersonal, collaboration, and communication** skills
- Constructive self and peer **assessment** skills
- **Professional ethics and behavior**

# Why is Problem-Based Learning an Integral Element of the UNM SOM Curriculum?

**PBL is consistent with basic principles related to how people learn.**

"I think it is really awesome that we can be in lecture such a minimum amount of time and have more time to be learning on our own. That's really what the process is about."
Student in Class of 2004 During 1/01 Focus Group

People come to a learning situation with pre-existing knowledge, skills, beliefs, and concepts that affect what they pay attention to and how they organize, interpret, and retrieve new information. New knowledge and understanding are constructed in relation to what a person already knows and believes. By applying the following educational principles, PBL helps learners build a bridge between what they already know and what they need to know to reach the next level:[2]

- Emphasizing **active learning**, which has been shown to be more satisfying than passive teacher-to-student learning and to enhance retention and recall
- Emphasizing student-centered learning in which **students are actively involved in setting their own learning goals**
- Enabling students to **learn in the context in which the information will be used**, which increases the ability to retrieve and apply information
- Focusing on important **concepts/prototypes/frameworks**, which helps learners organize and store new information in a way that facilitates retrieval and application
- Exploring prior knowledge, formulating inquiries **derived from and defined by the learners' need to know**, and **actively constructing meaning** through dialogue and reflection
- Utilizing problems designed to **simulate students' perception of their future profession**, which serves as a powerful stimulus for students' intrinsic motivation to learn
- Developing a **"community of learners"** by creating small groups of students who meet together regularly over a period of time and engage in collaborative problem-solving and questioning, helping them build on each other's knowledge
- Actively **involving students in monitoring their own progress** and reflecting on what works and what needs improvement; frequently **assessing** student performance **and providing feedback**

# Why is Problem-Based Learning an Integral Element of the UNM SOM Curriculum?

**Evidence supports the effectiveness of PBL.**

"For me, tutoring is learning made visible--both mine and the students'--through dialogue, questions, ah-has, connection, challenge, conflict, service and collegiality! And if I am lucky, I get to make an impact in someone's learning life!"

**Martha McGrew, MD - Tutor**

There is general agreement that students prefer the challenge, stimulation, and motivation afforded by PBL and that critical thinking skills represent an important element of medical education. A summary of the results of studies that have compared students in PBL programs with those in traditional programs is described below:[3]

- **Academic Achievement** – There does not appear to be a significant difference in performance or rate of progress through school based on pedagogy. There is some evidence to indicate **that long-term recall is enhanced for students in a PBL curriculum.**
- **Clinical Achievement** – In general, students from PBL programs appear to **have better clinical skills, to perform better in the clinical setting, and to score higher on tests of humanistic knowledge, attitudes, and skills** than do students from traditional programs.
- **Approaches to Learning** – PBL students more often report that **they study for understanding and meaning** (while traditional curricula students more often report studying for rote learning and memorization); that they **make more frequent use of the library, utilize a greater variety of learning resources, and select resources in a self-directed manner**; that they **are more satisfied, less stressed, and more positive about their learning environment**; and that their **early medical school years were challenging, engaging, and difficult** (whereas students in traditional programs are more likely to report their experience as being irrelevant, passive, and boring).
- **Post-Graduate Preparation** - Graduates of McMaster University and the University of New Mexico School of Medicine PBL programs reported **feeling as prepared as or more prepared for post-graduate study and practice** than did graduates of traditional programs. In clinical ratings, post-graduate supervisors found graduates from these two PBL programs to be **equal or superior to other students in specified areas and competencies**.
- **Teacher Satisfaction** – Faculty agree that PBL is a **satisfying** way to teach and interact with students, that it provides more opportunity for teachers to **spend quality time with students**, and that it enables faculty to develop an **enriching multi-disciplinary perspective**.

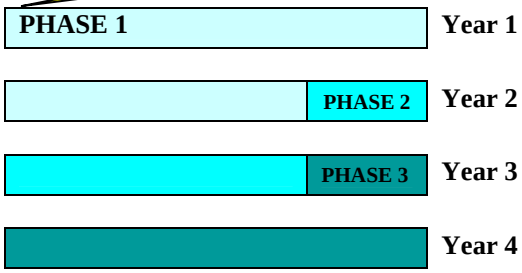
# How Does Problem-Based Learning Fit Into UNM SOM Curriculum?

## History of PBL at UNM

In the late 1970s, a small group of medical students and faculty began using PBL as part of their learning during the first two years of medical school. The response was very positive. From 1979-1993, UNM SOM ran two separate curricular tracks for Phase I—a traditional lecture/discipline-based track and a pure problem-based learning track (PCC—the Primary Care Curriculum).[4] In 1993, the two tracks were integrated to incorporate the best aspects of both programs. In the 2001-2002 academic year, plans designed to further refine and improve sequence, integration, and assessment, while maintaining the best practices and fundamental principles of the curriculum, were implemented.

## How the curriculum is structured

In the current curriculum, each week in Phase I is designed around one or more **conceptual themes reflected in the learning objectives for the week**. The case serves as a vehicle for integrating the concepts explored in the various formats and venues for learning that occur during the week. Typically, approximately 22-24 contact hours are scheduled, 6 hours of which are tutorial sessions, leaving 16-18 unscheduled hours for independent study. A "typical" week in a Phase I unit is represented below:




**Undergraduate Medical Education Curriculum**

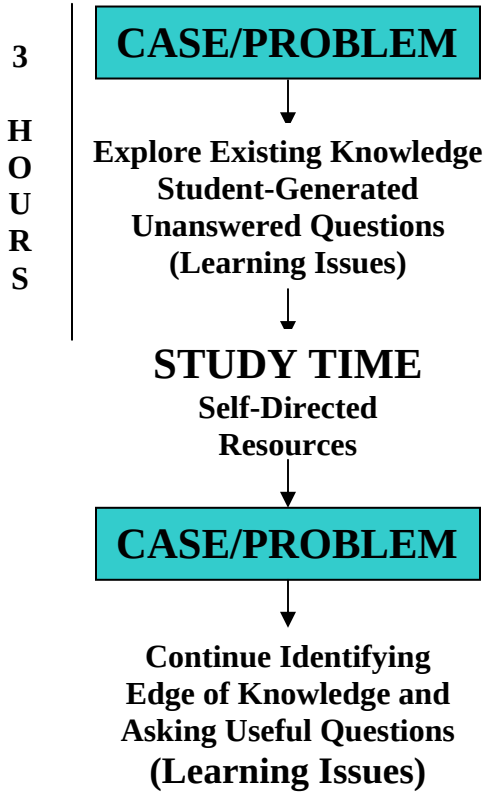
**Week 5 of Human Structure, Function, and Development**

**Self-Paced Histology – Gastrointestinal System**

| | Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|---|---|---|---|
| 8:00 | LECTURE Overview of the Abdomen | LECTURE Overview of GI Histology | LECTURE Membrane Structure & Transport | LECTURE Autonomic Nervous Sytems | **ANATOMY LAB** B teaches A |
| 9:00 | TUTORIAL Case 5.1 | ANATOMY LAB **Abdominal Cavity I** Group B | ANATOMY LAB **Abdominal Cavity II** Group B | TUTORIAL Case 5.2 And Mid-Block Assessment | |
| 10:00 | | | | | |
| 11:00 | | | | | |
| 12:00 | | | | | |
| 1:00 | LECTURE Clinical Skills | CLINICAL SKILLS Small Groups Group A (1/2 of the class) | CLINICAL SKILLS Small Groups (Group B (1/2 of the class) | | |
| 2:00 | | | | | |
| 3:00 | | | | | |
| 4:00 | | | | | |
| 5:00 | | | | | |

# How Does Problem-Based Learning Work?

## What does a typical tutorial look like and how does it flow?




The following description applies to a "typical" Phase I tutorial.

- Consists of **5-7 randomly assigned students** per group
- Facilitated by **one or more faculty tutors** who guide the process without contributing directly to the solution of the problem or being the primary source of information
- Meeting **two times a week for two or three hours** per session
- Completing a **case in two or three sessions**
- Spanning a **block of time from 6 weeks to a semester**

Although the sequence of activities involved in a group coming together and working through problems/cases may vary, it **typically involves certain predictable steps**. The process is not strictly linear—e.g., reevaluating/reprioritizing and developing learning issues occur throughout.

**LEARNING ISSUES**

**First Session**

1. Getting Started (Introductions, Ground Rules, Expectations)
2. Identifying Problem
3. Exploring Pre-Existing Knowledge
4. Generating Hypotheses and Explaining Mechanisms
5. Unfolding the Case Incrementally
6. Re-Evaluating/Reprioritizing Hypotheses Based on New Information
7. Assessment/Reflection

**Between Sessions (≈3 days)**

8. Independent Self-Directed Study of Learning Issues

**Next Session**

9. Discussion of Learning Issues and Application of New Knowledge to the Case
10. Continued Unfolding of the Case Incrementally
11. Assessment/Reflection

# How Does Problem-Based Learning Work?

## What are ground rules and how are they developed?

Ground rules are statements about **how the members of the tutorial group will interact with one another and honor the PBL tutorial process**. Ground rules are written down and posted for each tutorial session. They can be revised when necessary based on the needs of the group. Ground rules serve two **major functions**:[5]

- In establishing common expectations for how group members will work together, ground rules can **smooth group interactions and help prevent conflictual situations from escalating into crises**.

- In the event that conflict does precipitate crisis, ground rules **can serve as the basis for diagnosing problems and deciding what to do** to resolve them.

There are **two types** of ground rules—programmatic and group interaction.

- **Programmatic** ground rules are those that are considered to be **necessary for PBL learning to take place**. These expectations **are made explicit by the tutor** and deal with the following types of issues:
  - Punctuality and regular attendance
  - Roles of tutor and students
  - Following all the steps in the tutorial process
  - Having all students research major learning issues (rather than dividing them)
  - Integrating multiple perspectives (biology, population, behavior/mental health, and others such as end-of-life issues, integrative medicine, cultural diversity, ethics and professionalism, etc.)
  - Conducting regular reflection and assessment

- **Group interaction** ground rules make explicit expectations for **how group members will treat each other** in their interpersonal interactions. The **tutor and students work together to develop** these. Examples of issues often addressed include the following:
  - Types and balance of participation
  - Handling conflict and sensitive issues
  - Being courteous and respectful
  - Providing constructive feedback

# How Does Problem-Based Learning Work?

## What is a learning issue?

"The prerequisite skill needed for self-directed study is the ability to formulate questions that can be answered by data."
--Malcolm Knowles, 1975--[6]

Learning issues are **questions that cannot be answered with students' current knowledge and that can be explored and answered through systematic, self-directed inquiry**. The use of learning issues in tutorials prepares students to handle similar challenges in clinical practice and life-long learning. Essential characteristics of learning issues include that they:

- Are best **phrased as "how"** (rather than "what") focused questions
- Identify what is needed to **move students to the next level** of understanding
- Provide a bridge for **linking pre-existing knowledge to new knowledge**
- Can be **identified at any step and at any time** as the learning process unfolds
- Should be **researched between sessions and discussed/explained at the following session**
- Should be **researched by all members of the group** rather than divided up (at least the top 3-5 learning issues)

## How are cases constructed?

Cases are constructed to incorporate the following characteristics:

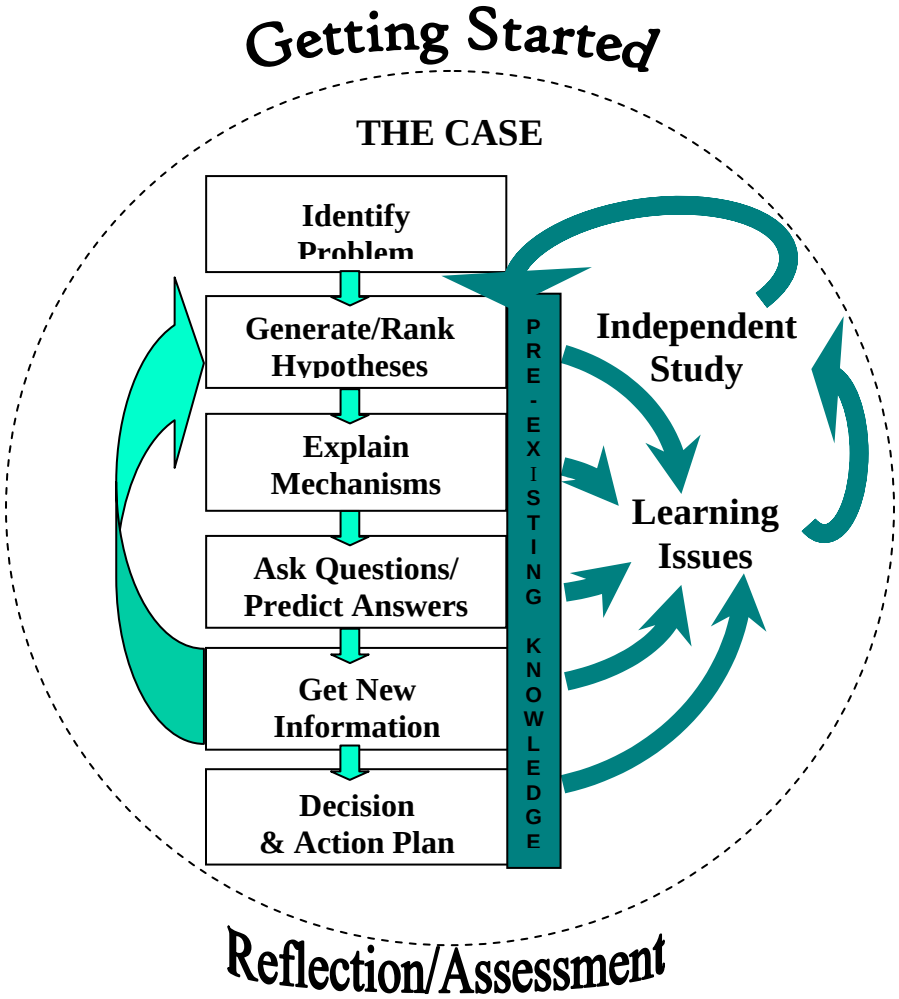
- Relate to **priority health needs** of a defined population
- Represent important **prototypical** situations and knowledge domains[7]
- **Simulate professional practice** and real life situations
- Involve real or standardized **patients** or patient presentations utilizing print, video, internet, and/or computer media
- **Stimulate the need to know** as the case unfolds through progressive disclosure and students discover that they do not have enough information to decide among multiple hypotheses they have developed

# How Does Problem-Based Learning Work?

**How does a case serve as a stimulus for learning?**

"If we want this tutorial to be a learning environment, we need to acknowledge that there are things we understand and things that we do not understand. We then need to help each other learn."
Student in Class of 2003
During 2/01 Focus Group

During progressive disclosure and discussion of a case, students identify problems, suggest possible causes, activate their prior knowledge, explain their reasoning in terms of basic mechanisms, explore the limits of their understanding, ask questions and formulate learning issues, discover and incorporate new information, and revise their thinking.



# How Does Problem-Based Learning Work?

## Why include assessment/ reflection as a regular element of the process?

"…one thing I'm growing to like in the first year—and it's kind of a hard transition—is that there's more concentration on you being responsible for your own learning."
Student in Class of 2004 During 12/00 Focus Group

## What common pitfalls should tutors avoid in facilitating the process?

A tutorial group that opts out of regular assessment limits opportunities for improvement, both as individuals and as a group. The **abilities to assess self and others and to work effectively with others are critical skills for health care professionals**. Practicing clinicians are continuously assessed by others, such as peers, administrators, governing authorities, and patients. The best clinicians appear to be able to self-assess effectively, create a plan for development and implement it. Taking time (15-20 minutes) at the end of each session to reflect on how well the members of the group are working together, how the tutor is doing, and how individual learners are progressing in relation to tutorial performance criteria has the following benefits:

- Helps the **group function more effectively** as a team.
- Allows people to **develop and implement plans for improvement**.
- Provides opportunity for **improvement to be recognized and reinforced**.
- Provides a safe place for students and tutors to **develop and improve assessment skills**.

Comments from students indicate that they are concerned that tutors remain true to the tutorial process. Some of the **pitfalls** students identify in relation to tutor facilitation of the elements of the tutorial process include the following:

- **Pitfalls** Related to Generating Hypotheses
  - Not asking students to individually list hypotheses before having the group list them on the board
  - Developing diagnoses rather than hypotheses relating to mechanisms
- **Pitfalls** Related to Explaining Mechanisms
  - Focusing on diagnoses and treatment rather than on mechanisms

# How Does Problem-Based Learning Work?

**What common pitfalls should tutors avoid in facilitating the process?**

A common misperception among faculty may be that students don't want to do assessment. Comments from students such as the following tell a different story:

"Assessment has been very lacking. People may not like assessment, but performing assessment helps people improve. I think doing assessment in a more structured way which encourages everyone to participate is better."
Comment from Student Evaluation of the Tutor Form, 2001-2002

- **Pitfalls** Related to Developing, Researching, and Discussing Learning Issues
  - □ Telling students what the learning issues should be rather than letting them develop as a result of the need to know stimulated by the case
  - □ Providing information rather than having students explore whether question should be a learning issue
  - □ Not encouraging students to integrate population and behavior issues
  - □ Not guiding students to develop well-defined, appropriately deep and broad learning issues
  - □ Not asking students questions about their sources for researching learning issues—e.g., How current is the information? Is the source commercial? Has the information been peer reviewed? Is it credible, valid, reliable?
  - □ Not relating new information researched from learning issues back to the case
  - □ Not connecting tutorial cases to other learning activities that are occurring
  - □ Not finishing learning issues/cases
- **Pitfalls** Related to Regular Reflection and Assessment
  - □ Not allowing time for and conducting reflection/assessment at the end of each session
  - □ Superficial assessment
  - □ Lack of feedback to individuals
  - □ Lack of focus on how to improve in identified areas
  - □ Lack of positive reinforcement
  - □ Non-constructive criticism

# What are Expectations of Students in a Tutorial?

**During tutorial sessions**, students will:

- Come **prepared** to discuss the case and learning issues researched since the last tutorial.
- **Actively participate** in group discussions and contribute to the learning process in a manner that allows for the balanced participation of everyone in the group.
- **Develop learning issues** at each session, phrase them as full-sentence questions, write them on the board, and post them on the course web page.
- **Consider biological, population, behavior/mental health** issues/explanations and questions of **professional attitudes, values, and ethics** related to the patient's problem(s) described in the case.
- **Go to the board** to diagram, outline, draw, etc. in explanation of mechanisms related to hypotheses.
- **Debate evidence** related to the case and **avoid personal attacks** on others.
- **Comply with ground rules** with regard to how the group will function and how its members treat one another.
- Participate in end-of-session reflection and assessment by **giving and receiving constructive criticism** regarding self, tutor, student, and group performance.

**Between tutorial sessions**, students will:

- **Research key learning issues** using a variety of resources.
- Critically **evaluate the credibility of sources and the validity of the information** they have obtained in their research.
- **Integrate what they have learned** through research, lectures, labs, clinical skills, Perspectives in Medicine (PIM), etc. into what is discussed in tutorials
- **Synthesize** what they have learned and be prepared to **discuss it without reading directly** from their materials, as much as possible, **and apply it to the case** at the next tutorial session.

# How Are Students Assessed in Tutorials?

## What are the goals of assessment in tutorials?

Goals of student assessment in tutorials include that:

- Students, tutors, and the group receive performance **feedback**
- Effective performance is **reinforced**
- **Opportunities for improvement** are identified
- **Suggestions for improvement** are provided
- A **learning prescription** is developed and implemented
- Student abilities and performance **develop and improve over time**

## How are tutorial assessments conducted?

## Formally & Informally Orally & In Writing

Both formal and informal assessment occurs in tutorials:

- On a routine basis, **assessment of/reflection on tutor, student, and group performance** is conducted at the end of tutorial sessions. The purpose of this oral assessment is to provide feedback about performance and identify ways in which knowledge, skills, and abilities can be further developed.
- The group also conducts more **formal oral mid- and end-unit assessments**. In conjunction with this, students write learning prescriptions that describe how they plan to develop their skills in areas that have been identified during regular tutorial assessment sessions.
- At the end of a tutorial unit, each student is assessed to have **"passed" or "failed"** by his/her tutor(s). The student must pass tutorial in order to pass the corresponding summative examination and unit.
- In addition to assigning pass or fail, the tutor(s) also prepares a **written narrative evaluation** of each student's performance that goes into his/her official file.

## How Are Students Assessed in Tutorials?

**What are the criteria on which tutorial performance is based?**

- ✓**Medical Knowledge, Integration & Critical Reasoning**
- ✓**Patient Care**
- ✓**Practice-Based Learning & Improvement**
- ✓**Professionalism, Ethics & Self-Assessment**
- ✓**Interpersonal & Communication Skills**
- ✓**Systems- & Community-Based Practice**

Students are assessed on six competencies, which are listed below along with behavioral descriptors for each:

### Medical Knowledge, Integration & Critical Reasoning

- Knowledge base in basic and clinical sciences
- Understands mechanisms & relationship to patient signs and symptoms
- Develops clear, relevant learning issues
- Defends thinking and reasoning
- Integrates biology, behavior, and population perspectives
- Uses multiple sources of information
- Demonstrates intellectual curiosity

### Patient Care

- Identifies patient problems
- Seeks and justifies appropriate follow-up information as a case progresses
- Integrates patient education principles

### Practice-Based Learning & Improvement

- Locates and assimilates information
- Facilitates the learning of self and group

# How Are Students Assessed in Tutorials?

**What are the criteria on which tutorial performance is based?**

From Tutor Narrative Evaluation of Student Performance:
"Professional Behavior: (Student) was very professional in her behavior and contributions to the group. She came prepared and punctually and was respectful of others. She truly incorporated feedback from the mid-unit evaluation by going to the board more and explaining concepts. (Student) demonstrated a clinical respectfulness to our "patients" by never laughing at or discounting any of their issues or problems."
Tutor in Human Structure, Function & Development Unit,
Fall 2001

## Professionalism, Ethics & Self-Assessment

- Regular and punctual attendance
- Behaves courteously and respectfully
- Recognizes strengths and limitations in self and others
- Gives, receives, and incorporates feedback
- Is committed to excellence

## Interpersonal & Communication Skills

- Promotes team learning and team work
- Uses questions, comments, and summaries to advance discussion
- Listens actively, checks for understanding

## Systems- & Community-Based Practice

- Understands how health care professionals and systems affect patient care
- Understands effects of societal structures and policies on health

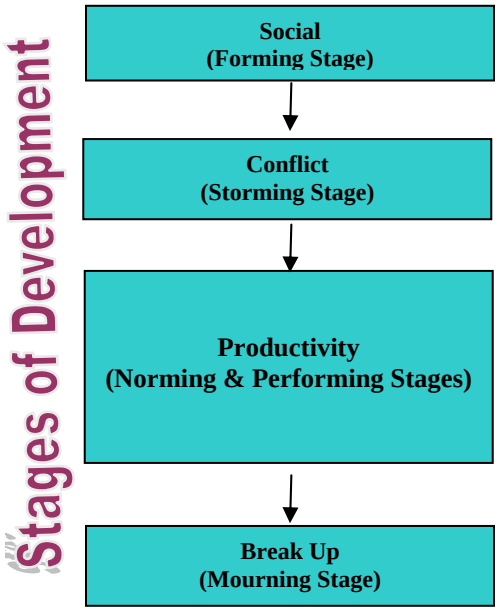
## How Are Students Assessed in Tutorials?

**What are the criteria for group performance in tutorials?**

Tutorial groups function most effectively and harmoniously when members of the group demonstrate the following:

- Taking responsibility for self and others' learning
- Task orientation
- Time management
- Balanced participation
- Effective interpersonal skills
- Conflict management
- Constructive feedback
- Adherence to ground rules

### How Groups Develop[8]




It is helpful to bear in mind that over time **groups go through predictable stages of development**, as illustrated in the flow chart to the left. This is not necessarily a linear process, and groups may jump back and forth between stages, particularly if some event occurs that affects/changes the group. Functional groups are skilled in the behaviors identified above, enabling them to move quickly to the high productivity stages and to avoid becoming stuck in the conflict stage.

# How Are Students Assessed in Tutorials?

**What are the logistics of assessment in tutorials?**

**What & Who?**

**When?**

**Where?**

**Based On What?**

**Why?**

| Each Session | Mid-Unit | End-Unit | Formal Reporting |
|---|---|---|---|
| Oral tutor and student self-assessment; oral assessment by all of how well individuals and group are functioning | Written student self-assessment with learning prescription for last half of unit; oral assessment by all of how well individuals and group are functioning and plans for development | Written student self-assessment with learning prescription for next unit; oral assessment by all of how individuals and group have grown and progressed and how students can continue to develop in the next unit | On-line completion and submission of pass or fail for each student and narrative evaluation of each student's performance; Student Evaluation of the Tutor Form (by students) |
| At the end of each tutorial session (approx 15 minutes) | At a time specifically scheduled for this purpose toward the middle of the unit | At a time specifically scheduled for this purpose at the end of the unit | At conclusion of unit |
| In the tutorial room | In the tutorial room or at some other location such as someone's house | In the tutorial room or at some other location such as someone's house | Completed on-line at http://hsc.unm.edu/som/faces (password needed). Click on <Phase I Evaluations; select appropriate year. Student Eval of Tutor through WebCT link |
| Observation of performance in relation to Tutorial Performance Criteria (individual and group); new and previously identified opportunities for development | Observation of performance in relation to Tutorial Performance Criteria (individual and group); new and previously identified opportunities for development | Observation of performance in relation to Tutorial Performance Criteria (individual and group); growth and development over unit; progress implementing learning prescription | Tutor observation/ documentation of student performance and progress over the course of the unit in relation to Tutorial Performance Competencies and learning prescriptions; student observation of tutor performance |
| Formative—reinforce effective performance and improvement, identify individual and group performance opportunities for development, develop plan for improving | Formative—reinforce effective performance and improvement, identify individual and group performance opportunities for development, develop plan for improving | Formative—reinforce effective performance and improvement and identify ways student can continue to improve in next unit Summative—though the oral feedback is not officially recorded, it serves as the basis for formal pass-fail and narrative evaluation | Summative—certify that student has passed or failed tutorial; provide written documentation of student performance that goes in student file and is used in writing Dean's Letter; provide written documentation of tutor performance that goes to tutor, Block Chair, and Department Chair; satisfy institutional reporting requirements |

## What Are the Roles of a Tutor in the Tutorial Process?

**What activities are involved in each of these tutor roles?**

# 1. Facilitator
# 2. Resource
# 3. Evaluator

Faculty in a traditional curriculum generally do most of the talking during the learning process. In general, PBL tutors should be the least talkative members of the tutorial group, serving the three primary roles of **facilitator, resource, and evaluator.** Thoughtful and reflective observation and patience are core skills needed for effective tutoring. Following is a checklist of behaviors demonstrated by an effective tutor:

### Facilitating the Tutorial Process

- ☐ Helps students focus on broad systems and mechanisms in generating initial hypotheses
- ☐ Encourages students to make thinking visible/provide rationales
- ☐ Helps students explore pre-existing knowledge
- ☐ Helps students integrate multiple perspectives and the sciences basic to the case
- ☐ Facilitates student development of high-level thinking learning issues
- ☐ Helps students apply new information to the case, re-rank hypotheses, make connections, and create meaning

### Facilitating Group Dynamics

- ☐ Develops/maintains positive, supportive learning environment in which students are free to identify what they don't know
- ☐ Facilitates/maintains ground rules
- ☐ Helps students stay on track
- ☐ Ensures opportunity for equitable participation
- ☐ Facilitates win-win resolution of conflict
- ☐ Models criticism of behavior, not personality, receiving feedback non-defensively, and changing behavior based on feedback

### Serving as a Resource

- ☐ Acts primarily as a facilitator rather than as a primary source of information (avoids "teaching" and dominating)
- ☐ Provides guidance to students in the identification and critical evaluation of learning resources

### Evaluating Performance

- ☐ Provides, facilitates, and models self-assessment and giving and receiving constructive feedback
- ☐ Facilitates regular group and self-assessment/reflection
- ☐ Documents student behaviors and progress each session

# What Skills Does a Tutor Need To Develop to be an Effective Tutor?

## TUTOR SKILLS:

- ✓Being Student-Centered
- ✓Creating a Motivating Environment
- ✓Managing Time & Process
- ✓Using Questions Effectively
- ✓Managing Group Dynamics
- ✓Providing/Ensuring Constructive Feedback

## TUTOR BEHAVIORS STUDENTS CRITICIZE:

- ×Interrupting students
- ×Over-participating/directing
- ×Telling too many stories
- ×Promoting competition rather than cooperation

The following **skills** are essential to effectively tutoring a PBL group:

### Being Student-Centered

- "Facilitate" (make easier) learning rather than "teach"—concentrate on the unfolding of the process.
- Encourage students to assume responsibility for their own learning. Help them discover what they know and don't know, what they can do and can't do.
- Let "wrong" information hang for a while.
- Be sensitive to when to provide students with information that will help move the process along, and when they need to create a learning issue.
- Don't play "What am I thinking?" Use open-ended questions as much as possible.
- When you feel it is important to "teach" to move the process along, ask permission to switch to content expert and keep it short.
- Involve all learners in all aspects of the learning situation, including facilitating the process. Ask each student to respond; suggest taking turns at the board, presenting, leading, etc.
- Turn questions back to the learner/group. *"Good question--what ideas do you have?"*
- Be comfortable with silence.

### Creating a Motivating Environment

- Relate tutorial issues to real life and to the learner's current situation as well as to future practice.
- Be enthusiastic about content, process, and learners.
- Make your expectations clear. Let students know how they can succeed in tutorial.
- Be sensitive and responsive to group needs and flexible in meeting them.
- Don't put learners down—maintain/enhance self-esteem. *"You're on the right track."*
- Listen to student issues and concerns and respond empathically. *"I can see how you would feel frustrated."*
- Encourage learner involvement in all aspects of the process. *"We seem to be stuck on this point. Where do you think we should go from here?"*
- Walk the talk—role model clinical reasoning, dealing with uncertainty, accessing information, formulating questions, constructive feedback, intellectual curiosity.

# What Skills Does a Tutor Need To Develop to be an Effective Tutor?

**TUTOR BEHAVIORS STUDENTS CRITICIZE:**

- ✕**Dictating pace/rushing things**
- ✕**Going off/letting group go off on tangents**
- ✕**Not encouraging students to go to the board**
- ✕**Not pushing students to the edge of their knowledge**
- ✕**Not pushing students hard enough or pushing too hard**

## Managing Time and the Tutorial Process

- Be patient!
- Help group develop agenda for each session and use it to guide direction and use of time. *"It seems we have wandered away from our agenda."*
- Take notes about student performance, cases, organization of material, etc. for later action and documentation (e.g., student evaluation, case revision). Let students know at the beginning of the unit that you will take notes and use them to provide feedback that will help individuals and the group develop.
- Make procedural suggestions. *"May I suggest we x?"*
- Prompt/probe when needed. *"What would you do next?" "If you did x, what do you think would happen?"*
- Part of the process is to take students to the edge of their learning. It is important to reward rather than punish students for acknowledging they don't know.
- Keep the group on track. Redirect when necessary. *"We seem to have gotten off on an interesting side track. The main issue here is…."*
- Emphasize purpose, value, and key content. *"Taking this approach will help us focus on our goal of…"*
- Help students make connections and create meaning.
- Check for understanding. *"So what you're saying is…"*
- Periodically ask group to summarize and synthesize.

## Using Questions Effectively

- Ask rather than tell whenever possible.
- Ask one question at a time, as concisely as possible.
- Adjust difficulty of the question to the learners' abilities.
- Ask stimulating, probing, clarifying questions.
- Ask open-ended rather than close-ended questions and avoid the "What am I thinking" game.

# What Skills Does a Tutor Need To Develop to be an Effective Tutor?

From Student Evaluation of the Tutor Form:
"(Tutor) has been a great tutorial leader. She is able to challenge me without being intimidating. I think her greatest strengths are 1) her ability to ask thought-provoking questions that pushed the group, 2) give immediate feedback to us during tutorial, 3) warm, generous personality, 4) lots of experience and knowledge to share, 5) a great understanding of how tutorial is supposed to work."
Class of 2005 Student in Human Structure, Function & Development Unit

## TUTOR BEHAVIORS STUDENTS CRITICIZE:

- ✕**Allowing student(s) to dominate group**
- ✕**Not helping group address/ effectively resolve conflict**

## Using Questions Effectively (continued)

- Wait at least 10 seconds of silence after a question before saying/doing anything else.
- When asked a question, don't respond immediately.
  - See if person can answer his/her own question.
  - Ask if anyone else in the group can answer it.
  - Find out if questioner wants you to answer it or wants to try to find the answer him/herself first.
  - Provide answer or suggest it as something the group may want to explore.
- Use the following stock questions to help you facilitate:
  - *"Can you sketch that for us?"*
  - *"What is the evidence for that?"*
  - *"Are you sure"?*
  - *"What exactly is your question?"*
  - *"Where can you go to find that information?"*
- Help students learn to question each other effectively.

## Managing Group Dynamics

- Help balance participation.
  - Draw in quiet participants. *"X, would you agree?" "What do you think, X?".*
  - Manage dominators. *"Why don't we go around the group and hear from everyone on this."* Don't make eye contact with or reinforce dominator.
- Don't allow personal attacks or let group gang up on one or two members.
  - *"I'd like to ask that we stick to talking about behaviors rather than personalities."*
  - *"I'm feeling uncomfortable about the way this is going..."*
- Refer to and/or renegotiate ground rules as needed.
- Facilitate win-win resolution of interpersonal conflicts.
  - *"Would it help the group function more effectively if we took a few minutes to try to resolve our differences?"*
  - *"Seems like we have a problem (or disagreement). What would you like to do?"*
- Give each person a chance to state his/her case; make sure it is understood by all.

# What Skills Does a Tutor Need To Develop to be an Effective Tutor?

## TUTOR BEHAVIORS STUDENTS CRITICIZE:

- ✕**Giving quieter/slower students more attention**
- ✕**Using sarcasm**
- ✕**Being argumentative, confrontational, intimidating, and/or condescending**
- ✕**Expressing bias/strong opinions; being close-minded**

"Individuals need to be able to work together and interact productively. Health-care delivery is a team effort. As a group facilitator, you need to act as a model to promote open, honest, and comfortable feedback about the performance of individuals and of the group as a whole."

--Waterman, Duban, Mennin, & Kaufman, 1988[9]--

## Providing/Ensuring Constructive Feedback

- Use "I" messages and focus on observable behaviors.
  - *"When you illustrate your thinking on the board, I feel more confident about our ability to follow your line of thought. I'd like to see everyone in the group go to the board more often."*
  - *"When I am interrupted, it derails my train of thought. I'd appreciate your letting me finish before you respond so that I don't forget something."*
- Describe specific behaviors (not personality or character traits) related to agreed upon performance criteria (individual and group).
  - Focus on observable performance.
  - Consider cultural values and differences.
  - Be truthful and descriptive rather than judgmental.
  - Reinforce change and growth.
- Direct feedback to actions which receiver can change.
- Include both strengths and opportunities for further development in a balanced way.
  - Provide specific examples of what was good and why it was good (what-why model)—*"That was a very complete agenda. By including breaks, your time estimate was quite accurate."*
  - Provide specific examples of how something could be improved and why it would be better (what-what-why model)—*"I observed that you said (did)…Next time, you might consider saying (doing)…because…"*
- Model the process by self-assessing at each tutorial and by modifying behavior based on feedback.
- Ask students to self-assess. *"What things do you think went well for you today?" "What things would you do differently next time?" "How are you feeling about…?"*
- Involve students in developing a plan for improving in identified areas. Offer suggestions and recommendations.
- "Check in" for accuracy and listen actively to verbal and nonverbal responses.
- Help students begin tutorials with a reflection about what core skills and abilities they are working on developing.

## What Are a Tutor's Responsibilities at UNM SOM?

# Due Dates:

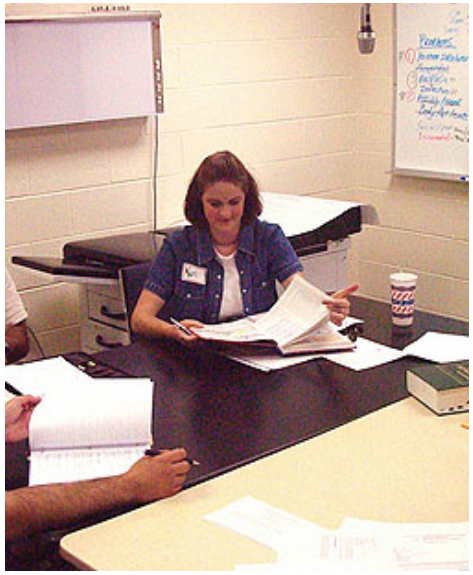
✓**Pass-Fail Certification for Each Student Completed On-Line by All Tutors of Group – Due by Monday Following Last Tutorial Session**

✓**Narrative Evaluation for Each Student Completed On-Line – Due by Three Weeks Following End of Unit**

The following are standard expectations regarding a **tutor's responsibilities** during the tutorial process:

- Attend regularly scheduled **tutor meetings**.
- Arrive to tutorials **on time**.
- Work with block chair to get **a substitute when needed**.
- **During the last week of tutorials, encourage students to complete the Student Evaluation of the Tutor form on WebCT—let them know their feedback is important to you.** Assure students that the forms go to Teacher & Educational Development, which distributes them to tutors only after all their pass-fail certifications and narrative evaluations have been submitted.
- **Complete an on-line tutorial pass-fail certification form for each student** no later than the Monday following the last scheduled tutorial session of the unit.
- **Complete for each student an on-line narrative evaluation** that meets the criteria listed below no later than three weeks after the end of the unit.
  - Address each competency—medical knowledge, integration & critical reasoning; patient care; practice-based learning & improvement; professionalism, ethics & self-assessment; interpersonal & communication skills; systems- & community-based practice.
  - Provide specific, clear descriptions and examples of student behavior in each competency.
  - Individualize feedback.
  - Provide specific suggestions to guide student improvement.
- **Review feedback** from Student Evaluation of the Tutor forms. Identify opportunities for development. Create and implement a plan to **grow your tutorial skills**.

# End Notes/References



[1]Citations related to the definition of problem-based learning include the following:


Barrows, H.S. (2000). *Problem-Based Learning Applied to Medical Education, Rev. Ed.* Southern Illinois University School of Medicine, Springfield, Illinois.

Boud, D., & Feletti, G. (1998). *The Challenge of Problem-Based Learning, 2nd Ed.* London: Kogan Page.

Neufeld, V.R., & Barrows, H.S. (1974). The McMaster Philosophy: An Approach to Medical Education. *Journal of Medical Education* 49(11): 1040-1050.

Schmidt, H.S. (1993). Foundations of Problem-Based Learning: Some Explanatory Notes. *Medical Education* 27: 442-452.


[2]Bransford, J.D., Brown, A.L., & Cocking, R.R. (Eds.) (2000). *How People Learn: Brain, Mind, Experience, and School.* National Academy of Sciences. Washington, D.C.: National Academy Press.

[3]Mennin, S.P., Gordon, P., Al Shazali, H., & Majoor, G. (2001). Problem-Based Learning: A Position Paper for the Network. Community Partnership for Health Through Innovative Education, Service, and Research. http:///www.network.unimaas.nl/position.

Reviews and discussions of PBL cited in the position paper are listed below:


Albanese, M. (2000). Problem-Based Learning: Why Curricula Are Likely to Show Little Effect on Knowledge and Clinical Skills. *Medical Education* 34: 729-738.

Barrows, H.S. (2000). *Problem-Based Learning Applied to Medical Education, Rev. Ed.* Southern Illinois University School of Medicine, Springfield, Illinois.

Nendaz, M.R., & Tekain, A. (1999). Assessment in Problem-Based Learning Medical Schools: A Literature Review. *Teaching and Learning in Medicine* 11(4): 232-243.

Norman, G.R., & Schmidt, H.G. (2000). Effectiveness of Problem-Based Learning Curricula: Theory, Practice and Paper Darts. *Medical Education* 69(9): 557-565.

Norman, G.R., & Schmidt, H.G. (1992). The Psychological Basis of Problem-Based Learning: A Review of the Evidence. *Academic Medicine* 67: 557-565.

# End Notes/References


Regehr, G., & Norman, G.R. (1996). Issues in Cognitive Psychology: Implications for Professional Education. *Academic Medicine* 71: 998-1001.

Schmidt, H.G. (1993). Foundations of Problem-Based Learning: Some Explanatory Notes. *Medical Education* 27: 422-432.

Vernon, D.T.A., & Blake, R.L. (1993). Does Problem-Based Learning Work? A Meta-Analysis of Evaluative Research. *Academic Medicine* 68: 550-563.

[4]Kaufman, A. (1985). *Implementing Problem-Based Medical Education: Lessons from Successful Innovations.* NY: Springer Publishing Company.

[5]Hitchcock, M.A. & Anderson, A.S. (1997). Dealing with Dysfunctional Tutorial Groups. *Teaching and Learning in Medicine 9* (1): 19-24.

[6]Knowles, Malcolm (1975). *Self-Directed Learning: A Guide for Learners and Teachers.* NY: Association Press.

[7]Bordage, G. (1987). The Curriculum: Overloaded and Too General? *Medical Education* 21: 183-188.

[8]Tuchman, B.W. (1965). Developmental Sequence in Small Groups. *Psychological Bulletin 63*: 384-399.

Tuchman, B.W., Jensen, M.C. (1977). Stages of Small Group Development Revisited. *Group and Organizational Studies 2*: 419-425.

[9]Waterman, R.E., Duban, S.L., Mennin, S.P., & Kaufman, A. (1988). *Clinical Problem-Based Learning.* Albuquerque, NM: University of New Mexico Press, p. 7.

# Quick Reference Guides

Quick Reference Guides that summarize, checklist, and/or illustrate the tutorial process are provided on subsequent pages:

- **Guide to Tutorial Process and Skills**
- **Tutor Checklist**
- **Guidelines for Student Performance: Behavioral Indicators for Each Category**
- **Strategies for Giving Useful, Constructive Feedback**
- **Assessment Checklist**
- **Example of Ineffective Narrative Evaluation**
- **Example of Effective Narrative Evaluation**

# GUIDE TO TUTORIAL PROCESS AND SKILLS



## THE TUTORIAL PROCESS

### 1. Getting Started

**First Session**

- Allow time for introductions.
- Develop an agenda for the day.
- Establish and write down ground rules for how the tutorial will run.
  - o You may establish some (e.g., be on time; integrate behavior, population, and biology perspectives; reflect after every session).
  - o Involve students in the development of other ground rules (e.g., how conflicts will be handled, how sessions will be conducted, etc.).
- Establish expectations (e.g., your role, how students should contribute, how sessions will flow, how students will be assessed, etc.).

**Subsequent Sessions**

- Identify and record agenda and roles for day.
- Refocus on agreed-upon tasks/learning issues.

### 2. Introducing the Case, Identifying Problems

- Have a student read the first section of the case (patient presentation for medical assistance).
- Have students identify and list key information (factors that either increase or decrease the likelihood of certain risk factors; e.g., age, sex, etc.).
- Have students identify patient's presenting issues and problems (individually and/or as a group on board).
- Facilitate discussion about problems identified by patient and/or observed by physician.

### 3. Forming and Ranking Hypotheses

- Ask students to generate broad hypotheses and rationales for patient's problems (individually and/or as a group) using blackboard, white board, flip chart.
- Emphasize that initial thinking should be on broad systems and mechanisms.
- Suggest VINDICATE SLEEP, in combination with systems/organs, as an aid:
  - **V**ascular
  - **I**nflammatory
  - **N**eoplastic
  - **D**egenerative
  - **I**ntoxication
  - **C**ongenital
  - **Al**lergic/ Autoimmune
  - **T**raumatic
  - **E**ndocrine
  - **S**ocial
  - **L**egal
  - **E**nvironmental
  - **E**conomical
  - **P**sychological
- Ask students to rank order hypotheses on white board (individually and/or as a group).
- Facilitate a discussion on level of agreement across group & identifying #1 hypothesis of the whole group.

### 4. Recalling Information, Testing Hypotheses

- Ask students to detail step-by-step sequence of processes/events/mechanisms by which top hypothesis explains presenting problems.
- Students may write hypothesis on one side of board and problems on other and then connect the two by explaining how one leads to another. (One or more students can work at the board and trade off as others have information to add.)
- Emphasis should be on mechanisms—on "how."
- Facilitate reworking of hypotheses at any time, using new information, rationales, and/or mechanisms.
- Help students discover what they know, explore the group's current knowledge, and lead them to discover what they need to know to understand and address problems.

### 5. Developing Learning Issues

- Questions necessary to explain a hypothesis that cannot be answered by the group at the moment constitute learning issues.
- Learning issues can be identified at any step and at any time as the process unfolds.
- Questions (learning issues) should be written on the board as complete sentences that generate higher levels of thinking and focus on mechanisms/systems.
- They should not be "yes/no" and solely "what" questions; they should involve "how" and "why."
- Students should research learning issues between sessions and come prepared to discuss/explain them at the next session.

### 6. Unfolding the Case Incrementally

- At each step in the unfolding of the case, students should consider what information is needed to help make hypotheses more or less likely. If their hypothesis is correct, what predictions would they make?
- Using framework above, move through elements of the case:
  - o History
  - o Physical examination
  - ° Laboratory tests
  - ° Management
- Facilitate discussion of how new information changes and/or helps them distinguish between hypotheses and eliminate, re-rank, and/or add any possibilities.
- When case is complete, ask if students can summarize and make a diagnosis. If not, what additional information would they need and why? If so, what comes next?
- Facilitate discussion of diagnosis, treatment, and follow-up, as appropriate

### 7. Reflection and Feedback

- Facilitate reflection on individual and group performance based on following criteria:

Medical knowledge, integration & critical reasoning; patient care; practice-based learning & improvement; professionalism, ethics & self-assessment; interpersonal & communication skills; systems- & community-based practice

- Model the process by starting with self.
- Provide constructive feedback to each student.
- Include feedback from each person about him/herself and the group process.

# TUTOR SKILLS

## Being Student-Centered

- "Facilitate" (make easy) learning rather than "teach"—concentrate on the unfolding of the process.
- Allow students to assume responsibility for their own learning. Help them discover what they know and don't know, what they can do and can't do.
- Let "wrong" information hang for a while.
- Be sensitive to when to provide students with information that will help move the process along, and when they need to create a learning issue.
- Don't play "What am I thinking?"
- When you feel it is important to "teach" to move the process along, ask permission to switch to content expert and keep it short.
- Involve all learners in all aspects of the learning situation, including facilitating the process. Ask each student to respond; suggest taking turns at the board, presenting, leading, etc.
- Turn questions back to the learner/group. *"That's a good questions. What ideas do you have?"*
- Be comfortable with silence.

## Using Questions Effectively

- Ask rather than tell whenever possible.
- Ask one question at a time, as concisely as possible.
- Adjust difficulty of the question to the learners' abilities.
- Ask stimulating, probing, clarifying questions.
- Ask open-ended rather than close-ended questions and avoid the "What am I thinking" game.
- Wait through <u>at least</u> 10 seconds of silence after a question is asked before saying or doing anything else.
- When asked a question, don't respond immediately:
  - See if person can answer his/her own question.
  - Ask if anyone else in the group can answer it.
  - Find out if questioner wants you to answer it or wants to try to find the answer him/herself first.
  - Provide answer or suggest it as a learning issue.
- Use the following stock questions to help you facilitate:
  - *"Can you sketch that for us?"*
  - *"What is the evidence for that?"*
  - *"Are you sure?"*
  - *What exactly is your question?"*
  - *"Where can you go to find that information?"*

## Creating a Motivating Environment

- Relate tutorial issues to real life and to the learner's present and future practice.
- Be enthusiastic about content, process, and learners.
- Make your expectations clear. Let students know how they can succeed in tutorial.
- Be sensitive and responsive to group needs and flexible in meeting them.
- Don't put learners down—maintain or enhance their self-esteem. *"You're on the right track…"*
- Listen to student issues and concerns and respond empathically. *"I can see how you would feel frustrated."*
- Encourage learner involvement in all aspects of the process. *"We seem to be stuck on this point. Where do you think we should go from here?"*
- Walk the talk—role model clinical reasoning, dealing with uncertainty, accessing information, formulating questions, constructive feedback, intellectual curiosity.

## Managing Group Dynamics

- Help balance participation. Draw in quiet participants *"X, would you agree with that?" "What do you think, X?".* Manage dominators. *"Why don't we go around the group and hear from everyone on this."* Don't make eye contact with dominator or reinforce contributions.
- Don't allow personal attacks or let group gang up on one or two members. *"I'd like to ask that we stick to talking about behaviors rather than personalities." "I'm feeling uncomfortable about the way this is going..."*
- Refer to or renegotiate ground rules as needed.
- Facilitate win-win resolution of interpersonal conflicts. *"Would it help the group function more effectively if we took a few minutes to try to resolve our differences?" "It seems like we have a problem (or disagreement). How would you like to resolve it?"*
- Give each person a chance to state his/her case; make sure it is understood by all (ask others to paraphrase).

## Managing Time and the Process

- Be patient!
- Help group develop agenda for each session and use it to guide direction and use of time. *"It seems we have wandered away from our agenda."*
- Take notes about student performance, cases, organization of material, etc. for later action and documentation (e.g., student eval, case revision).
- Make procedural suggestions. *"May I suggest we x?"*
- Prompt/probe when needed. *"What would you do next?" "If you did x, what do you think would happen?"*
- Part of the process is to take students to the edge of their learning. It is important to reward rather than punish students for acknowledging they don't know.
- Keep the group on track. Redirect when necessary. *"We seem to have gotten off on an interesting side track. The main issue here is…."*
- Emphasize purpose, value, and key content. *"Taking this approach will help us focus on our goal of…"*
- Help students make connections and create meaning.
- Check for understanding. *"So what you're saying is…"*
- Periodically ask group to summarize and synthesize.

## Providing/Ensuring Constructive Feedback

- Use "I" messages and focus on observable behaviors. *"When you illustrate your thinking on the board, I feel more confident about our ability to follow your line of thought. I'd like to see everyone in the group go to the board more often." "When I am interrupted, it derails my train of thought. I'd appreciate your letting me finish before you respond so that I don't forget something."*
- Provide specific examples of what was good and why it was good (what-why model)—*"That was a very complete agenda. By including breaks, your time estimate was quite accurate."*—and of how something could be improved and why it would be better (what-what-why model)--*"I observed that you said (did)…Next time, you might consider saying (doing)…because…"*
- Model the process by self-assessing at each tutorial.
- Ask students to self-assess. *"What things do you think went well for you today?" "What things would you do differently next time?" "How are you feeling about…?"*
- Involve students in developing a plan for improving in identified areas.
- Consider cultural values and differences.

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# TUTOR CHECKLIST



## Facilitating the Tutorial Process

- ☐ Helps students focus on broad systems and mechanisms in generating hypotheses
- ☐ Challenges students to make thinking visible/provide rationales
- ☐ Helps students explore pre-existing knowledge
- ☐ Helps students consider and integrate multiple perspectives and the sciences basic to the case
- ☐ Facilitates student development of high-level thinking learning issues
- ☐ Helps students apply new information to the case, re-rank hypotheses, make connections, and create meaning

## Facilitating Group Dynamics

- ☐ Develops/maintains positive, risk-supportive learning environment
- ☐ Facilitates/maintains ground rules
- ☐ Helps students stay on track
- ☐ Ensures opportunity for equitable participation
- ☐ Facilitates win-win resolution of conflict
- ☐ Models criticism of behavior, not personality, receiving feedback non-defensively, and changing behavior based on feedback

## Serving as a Resource

- ☐ Acts primarily as a facilitator rather than as a primary source of information (avoids "teaching" and dominating)
- ☐ Provides guidance to students in the identification and critical evaluation of learning resources

## Evaluating Performance

- ☐ Provides, facilitates, and models self-assessment and giving and receiving constructive feedback
- ☐ Facilitates regular group and self-assessment/reflection
- ☐ Documents student behaviors and progress each session

# GUIDELINES FOR ASSESSING STUDENT PERFORMANCE: Competencies & Descriptors



Listed below are UNM SOM competencies on which students are assessed throughout their undergraduate medical education. Bulleted behavioral indicators describe and define each competency. Tutors and students should use these competencies as a basis for assessing performance, developing learning prescriptions, and monitoring/documenting progress during regular tutorial assessments and mid-unit and end-unit evaluations. At the end of the unit, tutors should review their notes, considering a student's growth and development over time, his/her level of performance in each competency, and the consistency with which level-appropriate behaviors are demonstrated as the basis for assigning "pass" or "fail" and for writing a narrative evaluation that describes the student's performance and makes suggestions for continued development.

## Medical Knowledge, Integration & Critical Reasoning

- Knowledge base in basic and clinical sciences
- Understands mechanisms & relationship to patient signs and symptoms
- Develops clear, relevant learning issues
- Defends thinking and reasoning
- Integrates biology, behavior, and population perspectives
- Uses multiple sources of information
- Demonstrates intellectual curiosity

## Patient Care

- Identifies patient problems
- Seeks and justifies appropriate follow-up information as a case progresses
- Integrates patient education principles

## Practice-Based Learning & Improvement

- Locates and assimilates information
- Facilitates the learning of self and group

## Professionalism, Ethics & Self-Assessment

- Regular and punctual attendance
- Behaves courteously and respectfully
- Recognizes strengths and limitations in self and others
- Gives, receives and incorporates feedback
- Is committed to excellence

## Interpersonal & Communication Skills

- Promotes group learning and team work
- Uses questions, comments, and summaries to advance discussion
- Listens actively, checks for understanding

## Systems- & Community-Based Practice

- Understands how health care professionals and systems affect patient care
- Understands effects of societal structures and policies on health


# STRATEGIES FOR GIVING USEFUL, CONSTRUCTIVE FEEDBACK



- Use "I" messages and focus on observable behaviors.
    - *"When you illustrate your thinking on the board, I feel more confident about our ability to follow your line of thought. I'd like to see everyone in the group go to the board more often."*
    - *"When I am interrupted, it derails my train of thought. I'd appreciate your letting me finish before you respond so that I don't forget something."*
- Describe specific behaviors (not personality or character traits) related to agreed upon performance criteria (individual and group).
    - Focus on observable performance.
    - Consider cultural values and differences.
    - Be truthful and descriptive rather than judgmental.
    - Reinforce change and growth.
- Direct feedback to actions that the receiver can change.
- Include both strengths and opportunities for further development in a balanced way.
    - Provide specific examples of what was good and why it was good (what-why model)—*"That was a very complete agenda. By including breaks, your time estimate was quite accurate."*
    - Provide specific examples of how something could be improved and why it would be better (what-what-why model)—*"I observed that you said (did)… Next time, you might consider saying (doing)…because…"*
- Model the process by self-assessing at each tutorial and by modifying behavior based on feedback.
- Ask students to self-assess.
    - *"What things do you think went well for you today?"*
    - *"What things would you do differently next time?"*
    - *"How are you feeling about…?"*
- Involve students in developing a plan for improving in identified areas. Offer suggestions and recommendations.
- "Check in" for accuracy and listen actively to verbal and nonverbal responses.
- Help students begin tutorials with a reflection about what core skills and abilities they are working on developing.

## Assessment/Reflection at the End of Tutorial Sessions

- ☐ Leave adequate time (10-15 minutes) at the end of each session for reflection and feedback.
- ☐ Base assessment on established criteria relating to:
  - Individual performance (medical knowledge, integration & critical reasoning; patient care; practice-based learning & improvement; professionalism, ethics & self-assessment; interpersonal & communication skills; systems- & community-based practice)
  - Group performance (helping behaviors, task orientation, time management, balanced participation, interpersonal skills, conflict management, constructive feedback, adherence to ground rules).
- ☐ Model self-assessment and behavior change based on feedback.
- ☐ Model honest, substantive, constructive feedback to individuals and the group.
- ☐ Provide a balanced perspective of both strengths and opportunities for development.
- ☐ Model/ensure criticism of behaviors rather than personalities or character.
- ☐ Help students recognize their own biases and values and to factor in cultural differences.
- ☐ Model use of "I" messages rather than "you" barrages.
- ☐ Help group to use specific behavioral examples when providing feedback.
- ☐ Guide students in planning what they can do better next time.

## Formal Mid- and End-Unit Assessment

- ☐ Set a time for, facilitate, and participate in a formal mid-unit evaluation, to include each student's development of a written plan for development.
- ☐ Set a time for, facilitate, and participate in a formal end-unit evaluation, to include feedback about each student's progress over the course of the tutorial.
- ☐ Encourage and allow time for students to complete Student Evaluation of the Tutor form.
- ☐ Assign each student a "pass" or "fail;" Complete on-line submission by Monday following last tutorial session.
- ☐ Based on documentation of student performance over the course of the tutorial, prepare a written narrative evaluation of each student's performance based on the competencies listed below. Submit on-line within three weeks following the end of the unit.
  - Address each competency (medical knowledge, integration & critical reasoning; patient care; practice-based learning & improvement; professionalism, ethics & self-assessment; interpersonal & communication skills; systems- & community-based practice)
  - Provide specific, clear descriptions and examples of student behavior.
  - Individualize feedback to each student.
  - Provide specific suggestions to guide student improvement.
  - Ensure that the narrative clearly reflects and supports the pass or fail grade assigned.

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# EXAMPLE OF <u>INEFFECTIVE</u> NARRATIVE EVALUATION



| Why Not Effective | Narrative |
|---|---|
| | **Narrative for XXXX**: |
| The tutor has relied on a "template" approach, providing essentially the same information to each student in the group with very little meaningful individualized feedback. Although the group overview may be helpful, it is not enough by itself and cannot replace specific individualized feedback to this student. | I was very impressed with the degree to which individuals in this group worked together in terms of respecting each other, as well as with the ease in which an animated discussion spontaneously moved from student to student. Members of the group were articulate. Most participated to a high degree and grew into the material. I felt at the end of the unit that they had not only learned but were also appreciating the complex mechanisms that culminate in neoplasia. Because they did a good job struggling with, researching, and focusing on the molecular lesions that potentiate malignancy, I thought the overall goals of this unit were successfully achieved. |
| It is difficult to identify which assessment criteria are being addressed, or even whether each category has been addressed. The feedback is not provided in separate, headed paragraphs by category. | |
| No specific behavioral examples of this student's performance are provided to support conclusions and generalizations. | Although XXXX appeared able to analyze problems and provide evidence to support her ideas, she was quiet and needed to participate more. |
| Tutor did not identify what the student **did** contribute, describe the **quality** of the student's contributions, indicate consideration of the **reason** for the student's quietness (cultural, lack of confidence or preparation, style, etc,), or **identify specific ways** in which the student could increase participation (e.g., go to board, serve as facilitator, summarize, formulate learning issues, etc.) | |
| It is the tutor's responsibility to model assessment and ensure that it is an integral element of tutorials. Lack of sufficient opportunity to observe assessment is a reflection on the tutor, not on the students. | Because the group in general was reluctant to assess themselves and the tutor, there was little opportunity for observation of students' skills in this area. When assessment did occur, XXXX's skills were good. |
| Tutor did not describe what it was about the student's assessment skills that made them "good." This type of non-specific, non-descriptive evaluation does not help student identify behaviors to do more and/or less of. | |
| Recommendation is nonspecific—it does not provide (and document) a summary of the individual student's strengths and weaknesses along with specific recommendations for development. The last statement (a "feel good" comment) does not provide information useful to the student about his/her current and/or future performance—it might be appropriate as a conclusion if specific information were provided previously that supported and illustrated it. | I would recommend that this student continue to work hard to develop in areas identified during tutorials and end-unit discussion. XXXX will make a fine physician. |
| Not enough information has been provided about this particular student's performance to justify whatever grade was assigned. | |

# EXAMPLE OF EFFECTIVE NARRATIVE EVALUATION



| Why Effective | Narrative |
|---|---|
| Specific feedback to student is individualized rather than relying on a "template" approach.<br><br>Each of the competencies for assessing students in tutorial is addressed. | **Narrative for XXXX:**<br>Medical Knowledge, Integration & Critical Reasoning – This is an articulate student who has a well-developed sense of respect for information. XXXX came to the discussions well-prepared with background information regarding the mechanisms responsible for neoplasia, particularly as concerns FAP and HNPCC, which was helpful to other members of the group. She was also adept at integrating various perspectives, as illustrated by the connections she made in the biological, behavioral, and population causes of cancer. Her preparation for discussions from a variety of reputable sources gave me a sense that she did her homework thoroughly and took the course material very seriously. XXXX was never completely satisfied leaving a topic unless she felt comfortable and assured with a working understanding of the concepts involved--for example, how the molecular assay for HNPCC works. Although she never pretended to know more than she did, XXXX offered reasonable and well-thought hypotheses when in uncharted territory, especially in the HNPCC discussion. She was able to analyze problems in a logical manner. More use of the board to map out and connect ideas would help her clarify her thinking and better demonstrate her reasoning process to others.<br><br>Patient Care – XXXX routinely accurately identified patient problems, asked pertinent follow-up questions as the case progressed, and predicted answers based on her hypothesis. She was particularly interested in molecular biology concepts, but she also demonstrated an ability to think about the implications of basic science issues to clinical care. She was interested in exploring how patient education could be effectively applied in the neoplasia case and helped to generate relevant learning issues on the topic. |
| Specific behavioral examples support conclusions. | Practice-Based Learning & Improvement – XXXX consistently demonstrated that she was seeking and evaluating evidence to further her knowledge and understanding of the case. For example,.... Her comments in our discussion of the reliability of an internet resource one group member brought forth demonstrated an ability to critically evaluate based on sound criteria. Her preparation for and discussion of learning issues consistently facilitated and contributed to group learning. |
| Includes both positives and areas for improvement, provided in behavioral terms.<br><br>Provides information about student's progress over time. | Professionalism, Ethics & Assessment Skills – XXXX was keenly aware of and brought to the group's attention ethical issues involved in a case, such as the issue of a patient's right to know versus a family member's desire to withhold information. She was also not always open, however, to perspectives different from her own, an example of which occurred in the ethics discussion mentioned above. XXXX was actively involved in both seeking and giving clear and relevant feedback. She listened intently and nondefensively to feedback provided her. Her feedback to others was recognized by the group to be specific, constructive, and supportive. Her self-assessment was consistent with that of the tutor and the group. XXXX made a good faith effort to change her behavior based on self-assessment and feedback from others. For example, she realized that she sometimes went too quickly to a particular solution and worked to hold back on those ideas and maintain a broader perspective. On the one occasion she had little to contribute to the discussion, she took responsibility by acknowledging that she had not completed the learning issues. An area of concern is that XXXX arrived late on several occasions.<br><br>Interpersonal & Communication Skills – XXXX is very articulate and speaks intelligently. She was an active member of the group and offered suggestions on how to proceed in various discussions, such as in the case involving signal transduction. She led the group in the second session of case 2 and was very effective in facilitating the identification of hypotheses and learning issues. XXXX recognized a tendency to talk too much and made some progress in balancing talking and listening over the unit. Continued focus on this area, as well as on checking others' perceptions, is recommended.<br><br>Systems- & Community-Based Practice - XXXX tended to focus her attention on the biochemical level of cases and did not really identify system issues and policies that affect patient care and health. For example, in the cystic fibrosis case, it would have been valuable for her and others in the group to consider how the health care system interacts with social services organizations to provide comprehensive care. |
| Provides summary paragraph of strengths and weaknesses and specific recommendations for development. | Overall Assessment & Recommendations – XXXX has numerous strengths, especially in the areas of grasping complex ideas, communicating articulately, and providing and receiving feedback, which I hope she will continue to grow and develop. Some specific areas in which XXXX could focus her efforts to improve performance include more use of the board, balancing talking and listening, checking in on what others are thinking, keeping an open mind, accepting others' perspectives, and arriving punctually. |