A Comparison between Three Modes of Instruction

	Lecture-based Learning	Problem-based Learning	Team Learning
Key Principles and Assumptions about Learning	• Emphasizes efficient transmission of teacher-specified knowledge to support learner note-taking for later study. • Learners benefit most from organized presentations of information that will be included on the exam.	• Emphasizes student-directed learning and use of knowledge stimulated by the challenge of solving real-world problems in tutor-led small groups. • Learners benefit most from opportunities to solve authentic problems in tutor-led groups which stimulate study of individually-determined "learning issues" followed by application of the information.	• Emphasizes application of teacher-specified knowledge to address real-world problems in autonomous teams in a lecture-hall setting. • Learners benefit most from the opportunity to apply through problem-solving discussions in teams previously-learned information and to receive immediate feedback about their teams' solutions.
Basic Instructional Methods/Learning Sequence	• Lecturers didactically provide content. Many lecturers use teaching aids such as a syllabus or lecture notes to guide student note taking. • Learners capture content in notes. They study the notes in preparation for the end of unit exams. The lectures and notes often complement assigned readings.	• Tutors progressively disclose previously prepared cases. Learners analyze disclosed information to identify important facts and surface deficiencies in their knowledge needed to "solve the case." • Between sessions, learners address knowledge deficiencies and come prepared to apply their new knowledge in tutor-led discussions.	• Course directors clearly identify content learners are to learn. Learners come to class prepared to demonstrate their knowledge of this content on "readiness assurance tests," first as individuals and then as groups. Learners then apply this knowledge to select and share solutions to given problems in intra- and inter-group discussions.
Incentives Which Shape Learner Behavior	• Learners tend to be motivated to attend class and to study lecture notes in order to perform well on the end-of-unit exam. This exam tends to emphasize multiple-choice type questions.	• Learners tend to be motivated to participate in group discussions and to study outside of class because of their interest in the case and to contribute their share. Preparation for an end-of-unit exam is a motivation, but to a lesser extent. The exam tends to emphasize essay questions.	• Learners tend to be motivated to prepare for class to perform well--both as individuals and as teams--on readiness assurance tests. Motivation to participate in team discussions is enhanced by the nature of the case. Preparation for an end-of-unit exam is a motivation, but to a lesser extent.
Desired Outcomes	• Content acquisition; conceptual understanding.	• Improved ability to solve problems and reason critically; content acquisition; understanding; ability to communicate effectively and work effectively in tutor-led groups.	• Content acquisition; understanding; improved ability to apply content to solve problems, reason critically; communicate effectively and work collaboratively in autonomous teams.
Role of Instructor in the Learning Process	• Set learning objectives; select content; identify learning resources; prepare well-organized presentations with appropriate learning aids (syllabus, slides, handouts); address learners' questions.	• Construct cases in such a way that they will stimulate learners to pursue relevant learning issues; facilitate small group discussions; give learners feedback and guidance as needed.	• Set learning objectives; select content and resources; prepare readiness assurance tests; address learners' questions and misconceptions; prepare applications to stimulate meaningful group discussions.
Role of Expert	• Serve as instructor: Provide content to learners, including case examples.	• Serve as consultant: Assist learners with their independent study, upon request.	• Serve as instructor: Provide content to students, including opportunity to apply concepts to solve cases.
Role of Student	• Attend class; study notes; prepare for end-of-unit exam.	• Identify appropriate learning issues; do independent, out-of-class study; contribute to group discussions.	• Do independent, out-of-class study; contribute to team discussions; help defend team solutions to class.