

## ISSUE DESCRIPTIONS

The issues that appear in this case study were chosen because examining these issues will help a novice TA prepare for situations he or she is likely to encounter in teaching assignments. This section contains a brief description of each issue that appears in the case study. The purpose of this section is to help you develop a better understanding of each issue.

The Issues Matrix is divided into two major sections: “General Advice” and “Managing & Teaching.” The “General Advice” section focuses mainly on issues that deal with planning and preparation before class. These are topics that you should give some thought to before your first class session. In the “Managing & Teaching” section, you will find issues that you may encounter and need to consider while you are actually in your classroom teaching. Examining and thinking about both sections of issues before you go to your first class will help you and your students to have a quality learning experience.

### GENERAL ADVICE

**Preparing for class:** Before you come into your class you should have a well thought plan for what you will do that session. It is important to consider what problems you will work through with your students as well as how you will structure the class period. Being prepared for class also means that you have all of your teaching materials as well as extra copies of handouts for students who were absent or may have misplaced theirs.

**Understanding course goals:** It is important for you to have an understanding of what is being taught all semester. Knowing what your students must know by the end of the semester will allow you to guide them in understanding what topics and problems are most important for them to master.

**International TAs:** This issue contains some advice for international TAs from an experienced TA from Kenya. In this multimedia case, you will see video clips from the classrooms of two international teaching assistants.

**Choosing sample problems:** It is important to have planned well before your class session what problems you would like to work through with your students. There are many reasons why you might select a particular problem to work through during your class session. Among the reasons for selecting a particular problem are: (a) the problem is similar to others students will be required to solve, (b) the problem is a bit easier than others and it will help students develop techniques to tackle harder problems.

**Communicating with professor:** You are likely assigned to teach a recitation section for a larger lecture course led by a professor. It is important that you maintain regular communication with him or her so that you can adjust your teaching to support

students' learning in the course. For example, it would be important to know which practice problems the professor is planning to work through in the lecture to ensure that you do not duplicate those problems in your session.

**Setting clear expectations:** Before your first class session, consider what expectations you have for your students. It is important to communicate these expectations clearly during the first class session. Expectations might include: arriving on time to the session, students bringing calculators with them, having homework completed by the start of the session so you can collect it.

## MANAGING & TEACHING

**Physical place in classroom:** Watch the video clips in this issue and you will see experienced TAs in a variety of positions around their classrooms. For example, while students are working on problems, you will see the TA circulating between groups of students. When students are asking questions, you'll notice the TA's body language shows that he or she is paying close attention to the question. Experienced TAs are sensitive to whether their body is blocking the overhead projector screen or chalkboard and they look frequently around the classroom to make sure all of their students are on the right page or have the correct handout.

**Handling late students:** Sometimes there are situations that cause a student to be late arriving at your class. In the video clips in this section, you will note students coming in late and you can study the TA's reaction.

**Beginning an activity:** As experienced TAs begin a new activity, they give instructions and make sure students understand what they are supposed to be doing. They structure the activity so students can be successful.

**Transitions:** In this issue, you will see video clips where TAs move between activities. Note how they get their students focused on the new activity and how they connect smoothly to the last activity.

**Student questions:** One of the purposes of your class sessions is to give students a forum to ask individual questions about the course material. You will want to structure this so that students feel comfortable asking questions and so that their questions can benefit everyone. It is likely that if one student asks a question on a particular topic, other students also have the same question. It is important to encourage questions.

**TA mistakes:** During the course of your teaching, you may make a mistake. It is important to realize that everyone makes errors especially when they are first teaching a topic. It is possible that you might tell students something incorrectly or make other mistakes. It is important to reflect on your teaching and how your

class session went, so you can realize it if you do make an error. During the next class session you will want to correct this error with your students.

**Working practice questions:** When you are planning for class, it is important to consider which problems you will assign as practice questions and how you will structure this with your students.

**Multiple teaching strategies:** Experienced teaching assistants often use a variety of approaches to teaching their classes. Some TAs might include group work for students to work on different problems during one session, while the next session, they might ask students to guide them in solving a problem with the class. The most effective teachers are often ones who use a variety of approaches in their teaching.

**Keeping students involved:** Your class session is likely at least 55 minutes. You will want to keep all of your students engaged during this time. While the course professor might deliver a lecture on a particular topic, you'll want to provide guidance to students in solving practice problems, and help them be engaged actively during your class session. The video clips will show you a variety of strategies for keeping your students involved in class.

**Going over past work:** One of the things you will likely want to do during your class sessions is go over past homework or tests and quizzes with students. You can help students who are struggling with particular problems and you can guide students in figuring out where they made errors.

**Unexpected student solutions:** Occasionally even experienced TAs are surprised when students have a different way to solve a problem than they expected. In this video clip you will observe an experienced TA working with a small group of students who have solved a problem differently than she expected.

**Using technology:** Mathematics classes often use calculators. One of the goals of the course is to help students learn to use their calculators in effective ways to solve problems more quickly and easily. If you are using a calculator or other technology in your class, you will want to make sure you have a firm grasp on it. You will be called upon to help students who are having difficulty using the technology, so you need to be sure you know how to use it correctly.

**Student errors:** Students will make errors. One purpose of your class sessions is to help students discover their errors and think through how to correct them. Students might make errors about how to solve a problem, using their technology, or even simple errors in calculation. Help your students to understand that it is okay to make errors. As a class you can help each other figure out where errors have been made and help students to understand how to do problems correctly.

Trouble-shooting student work: This issue is similar to student errors. With student errors, you will likely realize what mistake a student has made and can help correct it. There are times, however, when it may not be immediately clear to you what a student has done incorrectly. When this happens, you will want to work through the problem using the student's solution until you can figure out where his or her thinking was incorrect.

Interacting with students: In these video clips, you will see a variety of interactions between TAs and their students. Notice how they respond to each other. Keep in mind that your role is that of a teacher, a facilitator, and an encourager. Your role is vital to helping students be successful in their mathematics course. As you watch the video segments, notice that the TAs know their students' names and call them by name. Calling students by name is important to forming a connection with them.

Encouraging multiple solutions: Different students think differently about problems. If a given problem may be solved with a variety of solutions, this is something to encourage among your students. Even if you are most comfortable using one solution method, you may have students who are more comfortable using another method.

Students working together: Often having students work together in pairs or small groups is an effective way to help them solve problems. When one student understands something, he or she may be able to explain it better to a peer. When students work together they can try out solutions and talk through problem solving strategies.

Eliciting student responses: When TAs ask questions, it is important to wait some time before calling on a student to answer or providing an answer yourself. This time gives students a chance to think. When you are expecting students to respond, it is also important to plan the type of questions that you will ask. It might be more effective to ask students to explain something than to answer a question with a simple "yes" or "no." The reason for this is that when you elicit a more detailed response from a student it can help you see how he or she is thinking about a problem.

Getting students' attention: When you are transitioning between activities or starting a class session, it is very important that you have students' attention. The TAs in these video segments often wait a moment or two before launching into the next discussion to be sure they have everyone's attention. This is important so that students do not miss important concepts.