

**TPAC Tryout Task**  
**Instructing Students and**  
**Supporting their Learning**

**Elementary Mathematics**  
**March 2010**

# Overview of the Instructing Students & Supporting their Learning Task

## *Focus on student learning*

In this task, you will show the strategies you use to make mathematics accessible to your students. You will explain the thinking underlying your teaching decisions and examine the effects of your instructional design and teaching practices on student learning, with particular attention to students with diverse cultural, language, and socio-economic backgrounds and learning needs.

## *Select a lesson*

For this task, you will film a lesson in which students are actively engaged in understanding mathematical concepts and participating in mathematical discourse. If you teach mathematics to more than one class of students, focus on only one class. A Glossary of terms used in this task appears near the end of this document.

## *Submit teaching artifacts and analysis*

You will submit 1-2 video clips from the lesson, the plan for that lesson, and copies of any writing on the board, overhead, or walls if it is not clearly visible on the video and is needed to understand what you and the students are doing. You will also write a commentary providing some context for the clip(s), identifying instructional strategies that you are using in the video, and analyzing their success for diverse students. The instructions in the following pages will guide you in putting together the materials required in this task.

## *Assessment of your task*

This is an initial draft of an assessment intended for national use. It may focus on some teaching competencies that have not yet been addressed in your preparation program. However, most of the questions are likely to be familiar and are questions that teachers ask themselves throughout their careers, answering at increasing levels of sophistication. A set of draft rubrics for this task is included; the level reflecting acceptable competence of student teachers is Level 2. We have asked the faculty member supporting you through this task to give you feedback on your work.

We are also asking you to give us feedback on the instructions and rubrics for this task through an open-ended survey at a link that we have provided to the faculty member supporting you. We appreciate any assistance you can give us in helping us improve this task.

# Context for Learning

## Purpose

The Context for Learning task is a brief overview of important features of your classroom context that influence your instructional decisions during the learning segment. It provides evidence of: 1) your knowledge of your students; and 2) your ability to identify and summarize important factors related to your students' learning and the school environment. You'll be referring to this description of students and the teaching context in your responses in subsequent tasks.

## What Do I Need to Do?

- ✓ Complete the **Context for Learning Form**. The form is located on the next page.
- ✓ Respond to each of the prompts in the Context Commentary. The prompts follow the Context for Learning form.

# Context for Learning Form

Provide the requested context information for the class selected for this assessment.

This form is designed to be completed electronically. The blank space does not represent the space needed. Use as much space as necessary.

## About the school where you are teaching

1. Are you teaching in a:

\_\_\_\_ Elementary school                      \_\_\_\_ Middle school

\_\_\_\_ Other (please describe) \_\_\_\_\_

## About the subject area/course you are teaching

2. How much time is devoted each day to mathematics instruction in your classroom?

\_\_\_\_\_

3. What is the degree of ability grouping or tracking in mathematics, if any?

## About the students in your class

4. How many students are in the class you are documenting? \_\_\_\_\_

5. What grade(s) are these students in? \_\_\_\_\_

6. How many students in the class are:    English language learners \_\_\_\_\_

Speakers of varieties of English (e.g., African-American Vernacular English, frequent use of slang) \_\_\_\_\_

7. If you have English Language Learners and your state/district/school has test scores reflecting their English language proficiency:

- a. Please complete the following table about your English Learners' latest English proficiency scores in modalities tested. Add rows as needed and label the levels.

Name of test: \_\_\_\_\_

<b># of Students at Each Level in Different Modalities</b>					
<b>Score Level</b>	<b>Listening</b>	<b>Speaking</b>	<b>Reading</b>	<b>Writing</b>	<b>Overall</b>

8. How many students have Individualized Education Plans (IEPs) or 504 plans? \_\_\_\_\_

- a. Briefly describe the required accommodations or modifications that will affect your mathematics instruction in the lessons seen in the video clip(s).

### About the school curriculum and resources

9. Describe any specialized features of your school or classroom setting (e.g., themed magnet, charter school, bilingual, Structured English Immersion, team taught with a special education teacher) that will affect the instruction seen in the video clip(s).

10. If there is a particular textbook or instructional program you primarily use for mathematics instruction, what is it? (If a textbook, please provide the name, publisher, and date of publication.)

## Context Commentary

Write a commentary of about **3-4 single-spaced pages** (including prompts) that addresses the following prompts. (The page length is a suggestion to give you an idea of how much detail to provide.) You can address each prompt separately, through a holistic essay, or a combination of both, as long as all prompts are addressed.

1. Describe the **variation** across your class with respect to the features listed below. **Focus on key factors that influence your planning and teaching of this learning segment.** Be sure to describe what your students can do as well as what they are still learning to do.
  - a. Academic development  
Consider students' prior knowledge, key skills, developmental levels, and other special educational needs.
  - b. Language development  
Consider aspects of language proficiency in relation to the academic language, i.e., the oral and written English, required to participate in classroom learning and assessment tasks. Describe the range in vocabulary and levels of complexity of language use within your entire class, not just for your English Language Learners.
  - c. Patterns of social interaction  
Consider factors such as the students' ability and experience in expressing themselves in constructive ways, working with others to negotiate and solve problems, and getting along with other students.
  - d. Family and community contexts  
Consider key factors such as cultural context, knowledge acquired outside of school, socio-economic background, access to technology, and home/community resources.
2. Describe any district, school, or cooperating teacher requirements or expectations that might impact your planning or delivery of instruction, such as co-planning, required curricula, pacing, use of specific instructional strategies, or standardized tests including interim or benchmark assessments.

# Instructing Students & Supporting Learning

## Purpose

The Instructing Students & Supporting Learning task illustrates how you work with your students to improve their understanding of mathematical concepts and their ability to engage in mathematical discourse. It provides evidence of your ability to engage students in meaningful mathematics tasks and monitor their understanding.

## What Do I Need to Do?

### Videotape your classroom teaching

- ✓ Identify lessons with learning tasks in which students are actively engaged in understanding mathematical concepts and participating in mathematical discourse.
- ✓ Obtain consent from parents/guardians of your students for them to appear on the video, using the form given to you by the faculty member supporting you. Seat students for whom consent was not given outside of camera range.
- ✓ View the video(s) to check the quality, analyze your teaching, and select the most appropriate clip(s) to submit.
- ✓ Provide **one or two video clips of no more than fifteen minutes total**. Select clip(s) that demonstrate how you engage students in understanding mathematical concepts and participating in mathematical discourse. (You may select conceptual understanding either as the primary focus of instruction or integrate it with the development of your students' understanding of a computation or procedure.) The clip(s) should include interactions among you and your students and your responses to student comments, questions, and needs.

### Videotape Guidelines

- A video clip should be continuous and unedited, with no interruption in the events. If you elect to use two clips, they should portray key events that cannot be portrayed in a fifteen minute clip. **The two clips must come from the same lesson.**
- The clip(s) can feature either the whole class or a targeted group of students.
- Both you and your students should be visible and clearly heard on the video submitted.
- Before you videotape, ensure that you have the appropriate permission from the parents/guardians of your students and from adults that appear on the videotape.

- ✓ Provide a copy of the lesson plan for each lesson from which the video clip(s) come. Attach them to the Instruction Commentary.

- ✓ Provide a copy of any relevant writing on the board, overhead, or walls if it is not clearly visible on the video. Attach this document to the Instruction Commentary after the lesson plan(s) or provide a separate file.
- ✓ Complete the Video Label Form and either attach it to the videotape or put it in a folder with the video file(s). The form is located after the rubrics for this task.
- ✓ Respond to each of the prompts in the Instruction Commentary.

## Instruction Commentary

Write a commentary of about **3-5 single-spaced pages** (including prompts) that addresses the following prompts. (The page length is a suggestion to give you an idea of how much detail to provide.) You can address each prompt separately, through a holistic essay, or a combination of both, as long as all prompts are addressed.

1. Other than what is stated in the lesson plan(s), what occurred immediately prior to and after the video clip(s) that is important to know in order to understand and interpret the interactions between and among you and your students? Please provide any other information needed to interpret the events and interactions in the video clip(s).
2. Describe any norms, routines, or working structures of the class (e.g., group work roles, class discussion norms) that you are drawing upon in the clip(s) to help provide a safe intellectual environment for student discourse and to encourage the engagement of diverse students with mathematics at levels that challenge them. If specific routines or working structures are new to the students, how did you prepare students for them?
3. In the instruction seen in the clip(s), what did you say or do to further the students' knowledge and skills and engage them intellectually in understanding mathematical concepts and participating in mathematical discourse? Cite examples from the clip(s) of both general strategies to address the needs of all of your students and strategies to address specific individual needs.
4. Given the language abilities of your students as described in Context for Learning commentary, describe any examples of language supports seen in the clip(s) to help your students understand the content and/or participate in mathematical discourse central to the lesson.
5. Describe the success – or differences in success – of the key instructional strategies seen in the clip(s) for students in your class. To support your conclusions, cite examples of what students said and/or did in the video clip(s) and in assessments related to the lesson that indicated their progress toward accomplishing the lesson's learning objectives.

## Procedures for Classroom Videotaping

### Introduction

These procedures are provided to help you produce video clips that clearly represent the teaching and learning in your classroom. In order to capture elements of instruction and student learning, you will need to produce video clips of high audio and video quality. If not using a digital camera, be sure to use a new, better quality VHS videotape. The procedures below will help you successfully produce video clips with minimum problems.

### Preparation and Practice

First, we do NOT expect a Hollywood production. It is important, however, that the quality of the videotaped activities be sufficient for reviewers to understand what happened in your classroom. As a general rule of thumb, sound quality is more important than video quality to understanding the teaching and learning being captured.

- ⇒ If you are unfamiliar with the videotaping process and/or do not have access to video equipment, **consider the following resources** for equipment and videotaping assistance.
  - your cooperating/master teacher (who can identify potential resources in the school as well as assist you with videotaping);
  - your university supervisor;
  - technology staff within your program's institution who are knowledgeable about videotaping;
  - another student teacher who has done or is doing videotaping; or
  - friends and family (for equipment).
- ⇒ **Schedule/reserve** the necessary video equipment well in advance.
- ⇒ **Advise your cooperating/master teacher and the principal** at your school of your need to videotape lessons for the tryout task. Discuss any arrangements for a camera operator with them. If you use a camera operator, look to people who already have approval to be in classrooms, e.g., your cooperating teacher, your university supervisor, designated student helpers. You will need to request formal approval of others (e.g., fellow student teachers, family friends) from the principal, and it may not be forthcoming.
- ⇒ **Think** about where you and your students will be during the activities to be portrayed on the videotape. Will different activities require students to regroup and move around the classroom? How will the use of instructional materials be recorded? What will the camera need to capture? If applicable, when should a camera operator zoom in or rotate the camera to a new position?
- ⇒ If you use a camera operator, **meet** with the person to plan the taping prior to videotaping your lesson. Share your lesson plan and discuss your plans to capture the teaching and learning.

- ⇒ **If available, use a sturdy tripod** to avoid shaking images which often stem from shots from a hand-held camera.
- ⇒ **If possible, practice the videotaping process.** This will provide a chance to test the equipment and give your students an opportunity to grow accustomed to the camera.
- ⇒ **Adjust**, if necessary, **for the light source** each time a recording is made. Newer cameras may have a switch for recording in incandescent, florescent, or daylight or may be completely automatic. Do not place the camera facing the window or other bright sources of light.
- ⇒ If you are having trouble hearing yourself and/or the students, try placing the camera closer to the action OR use an external omnidirectional dynamic microphone plugged into the “EXT MIC” jack on the camera. Confirm that this turns the internal microphone off. If a camera operator wears headphones plugged into the camera, the sound quality can be monitored during taping.
- ⇒ For safety reasons, as much as possible, **tape extension cords** to the floor with duct tape.
- ⇒ During videotaping, don’t worry about calling students by name, or having them address you by name. Note that names or other identifying information heard on the videotape will remain confidential to the scorers.

Elementary Mathematics Rubrics  
Instructing Students and Supporting their Learning Task