

MATHEMATICS STUDENT TEACHING IN JAPAN: WHERE'S THE MANAGEMENT?

Blake E. Peterson
Brigham Young University

Abstract: This study followed 3 Japanese preservice teachers during a 4-week student teaching experience in a Japanese junior high school during which each student teacher taught 3 lessons. Conversations with their cooperating teachers included talking about how to teach mathematics and how students would respond to various tasks but, unlike their counterparts in the United States, they never talked about classroom management issues. Although Japanese junior high school students are generally well behaved, management problems do exist. Where do they learn to deal with these kinds of problems? Primarily during their first year of teaching when they are closely mentored by other teachers in the school.

Introduction

In the early 1990's, the Third International Mathematics and Science Study (TIMSS) was conducted to measure the achievement of 4th, 8th, and 12th grade students in various countries around the world. In conjunction with the achievement portion of the study, a video study of mathematics teachers in Germany, Japan and the United States was also conducted beginning in 1993. The reported research discussed the clear distinction between the teaching that takes place in Japan as compared to the United States. These results, along with others, beg the question: "How do these Japanese teachers learn to teach the way they do?" In particular, how might the student teaching experiences in these two countries contribute to these differences in methods of teaching?

Peterson and Williams (2001) conducted a study of the dialogue and mentoring that occurs during student teaching near a large private university in the western United States. Eight student teacher-cooperating teacher pairs were selected for the study and all 16 participants were interviewed twice. The conversations that took place between the student teacher and cooperating teacher were also analyzed. The analysis found discussion themes such as subject matter knowledge, pedagogical content knowledge, classroom management, activities, individual students, and the relative difficulty of the mathematics they taught. In the conversations, preliminary results indicate that most pairs spent the majority of the time (as high as 77%) discussing classroom management. Some pairs spent little time (as low as 1%) discussing the mathematics that they were teaching (Peterson and Williams, 2001). While an emphasis on classroom management is not surprising, the lack of conversation about mathematics was disturbing.

The purpose of this paper is to describe a similar study that was conducted in Japan and compare the initial findings to the results of the study conducted in the United States.

Methods and Design

This study was conducted at the junior high school affiliated with a university in southern Japan. In the fall of 2003, there was a 4 week student teaching session for student teachers (ST) whose primary focus was teaching at the secondary level. During

this student teaching episode, there were 7 mathematics student teachers and 3 mathematics cooperating teachers (CT). Each of the 7 student teachers taught only 3 lessons (one with each cooperating teacher) during the 4 weeks of student teaching. Since the structure of the Japanese schools has the students in the same classroom all day long and a homeroom teacher assigned to that classroom, each of the student teachers was also assigned to a homeroom class. They participated in all of the homeroom class activities including morning and afternoon announcements, lunch, afternoon cleaning, and field day practice. The group of student teachers assigned to a specific homeroom also had the responsibility to plan and teach a moral education lesson. Because of this assignment, the student teachers had interactions with the homeroom teacher as well as the mathematics cooperating teachers.

Three student teachers were selected to participate in the study based on their teaching schedules. With this structure, the following types of video taped data were gathered: 1) Initial and Final interviews with all cooperating teachers; 2) Initial interviews with all student teachers; 3) Final interviews with the 3 selected student teachers; 4) All conversations between the 3 selected student teachers and the cooperating teachers; 5) All lessons taught by the 3 selected student teachers (9 total); 6) The corresponding *hanseikai* (reflection meeting) for each lesson taught.

Some of the questions that were asked of the cooperating teachers during the interviews were: 1) Does your method of teaching have an influence on the behavior and attitude of the students?; 2) Does the behavior and attitude of the students have an influence on your method of teaching?; 3) What is the most important thing that the student teachers should learn through student teaching?; 4) What are the strengths and weaknesses of the individual student teachers? The student teachers were asked the following types of questions: 1) What is your way of seeing or thoughts about the subject of mathematics?; 2) Regarding classroom management and discipline, what kinds of things did you and your cooperating teachers talk about? Because of the difference of the settings of student teaching in the two countries, there was not a one-to-one correspondence between the interview questions asked of the teachers in the two countries.

Results and Preliminary Analysis

In the reporting of the data the student teachers from Japan will be referred to as ST-Keiko, ST-Hideki or ST-Yoshi and the cooperating teachers from Japan will be referred to as CT-Honda, CT-Sasaki, or CT-Tanaka. The student teachers from the United States will be referred to as Anne, Blake, Connie, Dawn, Jennifer, Peter, Sunny, and Tara. Since the student teachers and cooperating teachers in the United States were paired together, the cooperating teachers are referred to as Ms. A worked with Anne, Mr. B worked with Blake etc.

Initial Interviews

During the initial interviews, the responses of the Japanese cooperating teachers had two things that were of interest. They were 1) the lack of reference to classroom management issues and 2) the emphasis they placed on communicating to the student teachers the fun of math and a true sense of the joy and difficulty of teachers' work.

When the cooperating teachers were asked if they felt their method of teaching affected the behavior of the students, the word *furumai* was used for behavior or conduct

in addition to the word *taido* which means attitude. The first two teachers both seemed to focus on the student's attitude toward the math and made little reference to classroom behavior. Thus, the word *taido* was not used in the third interview so it wouldn't bias the cooperating teacher toward students' attitudes. However, the third cooperating teacher still gave a response that was void of any reference to classroom management. In response to this question, CT-Tanaka talked about "paying attention to students facial expression and adjusting the teaching accordingly." CT-Honda was "even willing to allow some whispering that was unrelated to mathematics as long as the mathematics was understood by everyone." The main focus of all three responses was a goal of "teaching mathematics because I want students to like mathematics" (CT-Honda).

In response to similar questions about teaching affecting the behavior of the students, 6 out of 8 United States cooperating teachers referred to some aspect of discipline, control or classroom management. Ms. A commented, "if it's [an activity] not well planned out then it can be chaos and no learning takes place." Mr. B said, "when you've got ninth graders still in pre-algebra, you have a room full of behavior problems." He was implying that when older students are still in lower mathematics classes, they usually haven't had much success in mathematics and so there are more behavior problems. Many of the US teachers related their comments about classroom management to their attempts to do activities with the students. The students behavior while doing the activities would determine whether such activities could be used again. Ms. S summarized this idea, "if I can't have a fun activity and have them, even though they are noisier, have them in a controlled situation, it doesn't help to do the activity because they don't get anything out of it. Then I choose something where then I can keep them controlled and in their seats."

When the Japanese cooperating teachers were asked what they thought the most important thing for the student teachers to learn was, they all focused on the human element of teaching and developing an understanding of the profession. CT-Sasaki talked about how much she loved being with the students and how important it was for teachers to possess that "human like attribute." CT-Honda stressed the importance of considering the human element of the students when preparing a lecture, having a desire for students to understand and "to enjoy learning with students. Finally CT-Tanaka said that he wanted student teachers to "feel that teaching is fun. It is a hard job but worth it." None of the cooperating teachers made any reference to managing a class or controlling students like was heard from the U.S. teachers in response to similar questions (Peterson & Williams, 2001). The responses to these questions also suggested the importance of the human element that they seemed to place on teaching. They felt that developing a relationship with the students and "wanting them to understand" was very important. This emphasis on a human relationship with the students was consistent with the inherent desire to have students understand the mathematics and see the fun in it.

In a similar vein, the Japanese student teachers' responses to the initial interview questions had no focus on student behavior or classroom management. When asked, prior to their student teacher, what they were nervous about, they responded that they were concerned about teaching a good lesson. There was no reference to concerns about being able to handle the students or dealing with student behaviors.

The student teachers from the United States were interviewed midway through their 14 week student teaching experience and were asked what they felt their strengths

and weaknesses. Seven out of the eight student teachers made reference to their ability to manage a classroom or manage and control the students. Dawn said, "I am a wimp. I'm horrible at discipline. I have a hard time with classroom management." Blake said that his strengths were "probably, right now, management, class control." In his final interview, Blake made a comment when talking about overcoming his weaknesses that directly addressed the question asked of the Japanese student teachers. He said, "One of my big fears early on was 'how do I deal with 25 kids?'" This comment was in direct contrast to anything stated by the Japanese student teachers about their concerns prior to student teaching.

Conversations and Reflection Meetings

During the conversations between the three student teachers and the three cooperating teachers as the lessons were prepared, statements that focused on anticipating poor student behavior and how one might deal with it, were not heard. The majority of the conversations centered on what the students would be able to do mathematically or how they might think about or respond to the wording of a certain mathematical question. In the reflection meetings that followed the lessons, there were still no conversations about classroom management.

The settings of these lessons, however, made discussions of classroom management less needed. In general, the students in this Japanese junior high school were better behaved than what is found in the United States. However, the mathematics lessons were not necessarily quiet. Since most Japanese mathematics lessons are problem based and students work in groups, teachers are tolerant of higher noise levels. In addition to these general factors that influenced student behavior during the student teachers' lessons, there were influences specifically related to student teaching that may have helped student behavior. Since the student teachers only teach 3 lessons over the course of the 4 weeks of student teaching, each time one of them teaches a lesson, it is a big event. Many of the other student teachers observe the lesson along with the cooperating teacher. This also makes each student teacher's lesson a special event for which the students behave differently. The student teachers in the United States, however, take on most of the responsibilities of the classroom including many administrative ones such as taking roll or grading homework. Jennifer's comment describes her response to dealing with some of those responsibilities. She said "At first I felt overwhelmed with grading papers, entering them in the grade book, entering them in the computer, and that has nothing to do with your teaching." After a period of time, the student teachers in the United States teach all of the classes and perform all of the duties of a regular teacher. Thus a student teacher's lesson is not a special event and the students behave as they normally would.

In order to understand the context in which the Japanese cooperating teachers made their comments, each of the 3 cooperating teachers was observed teaching mathematics lessons on almost a daily basis over a 6 week time frame surrounding student teaching. During these observations, some student misbehaviors similar to those in the United States were observed. For example, one of the cooperating teachers would have to occasionally remind the students to stop their excessive whispering or talking. While these incidents were not common, they were observed in some of the regular day to day lessons taught by the cooperating teachers. Because the teaching of a lesson by a

student teacher was a special event for the students, their behavior was better for those lessons than what it was on a day to day basis.

Final Interviews

In the final interviews, the Japanese cooperating teachers and the US cooperating teachers were both asked to discuss the strengths and weaknesses of the student teachers with whom they had worked. Seven out of the 8 US cooperating teachers made mention of classroom management as either a strength or a weakness. They described these strengths and weaknesses with comments like “his big weakness (that he overcame) was learning to be aware of what was going on in the classroom” (Mr. B). Another cooperating teacher commented that his student teacher had developed a strength of “how to discipline and ways to take care of discipline” (Mr. P). Mr. D described Dawn’s new strengths as “Probably the most noticeable is that she’s become more assertive, and maybe more confident in taking charge of her class and controlling her class.”

On the other hand, when the Japanese cooperating teachers were asked to describe the strengths and/or weaknesses of their student teachers, none of them made any mention of classroom management. Instead they talked about personality characteristics like “she was positive and cheerful” or “He is sweet.” They also talked about the student teacher’s preparation of their lessons and their willingness to accept guidance. CT-Sasalo said the following about ST-Yoshi: “At least, he understood he couldn’t teach well without considering the student’s feelings. After the first lesson, I told him to prepare better and his response was something like ‘I can teach well without preparing it.’ But he prepared much more for his last lesson than he did for his first.” (CT-Sasaki on ST-Yoshi). CT-Sasaki described ST-Keiko as “a person who could accept others’ suggestions gratefully and it really helped her grow gradually.

During the final interviews, a different emphasis can be seen in the responses of the Japanese teachers and the US teachers. Again, there were few comments by the Japanese on classroom management. Even though the student behavior problems in this Japanese junior high school were minimal, they did exist and yet there was no evidence from the initial interviews or during the conversations between the student teachers and cooperating teachers that classroom management was a topic of discussion. The question, “Where will these student teachers learn to deal with the classroom management issues of student misbehavior?” became a focus in the final interviews of the Japanese student teachers and cooperating teachers.

When ST-Hideki was asked about classroom management in his final interview, the following dialogue ensued.

Interviewer: The next question is about classroom management. It is about discipline. What kind of things have you and your instructors talked about? What sticks out in your mind?

ST-Hideki: Do you mean the student greeting?.

Interviewer: I am not asking you about the student greeting. For example, if a student doesn’t listen to a teachers’ lecture and the teacher tells him/her to be quiet. Did you talk about this kind of thing?

ST-Hideki: I don’t think we talked about it. I talked about it with a homeroom teacher though. The homeroom teacher told me that I could tell the students anything because this was my student teaching. She also told

me that I am not God so if I make mistakes, I should apologize to a student. I should just do what I think is right. What I actually did was when a school was conducting a field day practice; I talked to the students who did not practice seriously or were complaining.

Interviewer: OK. Where do you think you can learn to deal with this kind of thing? You and your cooperating teachers did not talk about students who didn't participate in a mathematics lesson.

ST-Hideki. We did not talk about this, but we took a survey after each of my 3 math lessons to get students' ideas about my teaching. Some students wrote on the survey after my 2nd lesson that I did not pay attention to the students who were chatting during a lecture. The 3 instructors did not directly tell me about it, but I felt I should have paid more attention to chatting during a lesson since students mentioned it to me.

ST-Hideki agreed that he had not talked about classroom management with the cooperating teachers even when there may have been cause to do so. Neither of the other two Japanese student teachers made any mention of talking about classroom management issues with their mathematics cooperating teachers. In contrast, every student teacher in the United States study talked about classroom management issues that they had discussed with their cooperating teachers when they were asked a similar question in their final interview. Peter said that they talked about "how to handle kids that are talking and especially when the whole class is kind of rowdy." Connie said "We've talked a lot about that [classroom management], more so than the mathematics, because the math you can usually find in the books. We talked about seating charts and how that affects the atmosphere in the class. We also talked about letting the class decide on the rules, how that affects management, and also about enforcing the rules."

In the initial interviews with the Japanese cooperating teachers, any questions about classroom management were responded to with an emphasis on student attitude toward mathematics. In the final interview with the student teachers, the term "classroom management" had to be described with specific example. Thus, the phrasing of classroom management questions in the cooperating teacher final interviews were carefully worded to clarify any misconceptions about what was meant by classroom management.

The direct translation of classroom management into Japanese is *kyoshitsu unei*. When U.S. teachers talk about classroom management they are primarily referring to managing student behavior. However, when Japanese teachers hear *kyoshitsu unei* they think of the administrative aspects of a homeroom teacher. Using other Japanese words for management such as discipline seems to further reinforce the image of classroom management being about the administrative duties and teaching that takes place in the homeroom.

By describing the specific student misbehaviors that were observed in the mathematics lessons and attributing them to "classroom management," the researcher was then able to ask questions about how new teachers learn these "classroom management" skills.

When asked if they talked about classroom management to the student teachers, the cooperating teachers indicated that they did not. The cooperating teachers also acknowledged that the behavior of the students at this university affiliated junior high school was better than what the student teachers would experience as new teachers in

public schools. The following dialogue between the interviewer and CT-Tanaka sheds light on where student teachers learn to handle student misbehavior.

Interviewer: The last two questions are about classroom management. If you see students' bad behavior, for example, and one student says something inappropriate to another student during class or they don't participate in the class or their conversation really interrupts the whole class. If this problem occurs, how would you solve the problem? Do you solve it by yourself or solve it with the homeroom teacher?

CT-Tanaka: There are many levels. For example, suppose there is a fire. If the fire is put out when it is small, then there is no problem. But after this fire gets bigger, then I have no way to put it out by myself. Class is the same. If the problem is solved when it is small, I can handle it. Every student has possibility to chat in a class even though they are not especially bad students if a lecture is boring. So if a class is boring and it caused chatting, then I have to do something during this class period. Otherwise there will be many other fires coming out from other places. We need to instruct students when fire is small. If the fire extends to whole class then I need to get the homeroom teacher's help and work with him/her. Students have the right to study. If a student interrupts another student who wants to study then I will kick this student out of the classroom. Then I will talk to him/her in person. Otherwise I feel sorry for students who have desire to study.

Interviewer: Yeah, but you did not talk much about it with student teacher, did you?

CT-Tanaka: That is true.

Interviewer: So where can they learn about it?

CT-Tanaka: Teachers?

Interviewer: Student teachers don't have many experiences on classroom management, especially at this school. But most student teachers will teach at public schools where they will face many of these problems. So where can they learn about it?

Interviewer: Well, presently the first year teachers, I mean new teachers, will have instructors with them every day for a year to be taught. Usually these instructors are someone who just retired from their junior high school president position. So if something happens on the first year, these instructors will teach them well. New teachers actually will learn many things after becoming a teacher.

CT-Tanaka clearly addresses when and where new Japanese teachers learn about classroom management.

Discussion

In the final interviews, the comments by CT-Tanaka and ST-Hideki confirmed that there is no discussion about classroom management between the mathematics cooperating teachers and student teachers. This was in direct contrast to the nature of the conversations observed between US cooperating teachers and student teachers. Although problems with student behaviors are less in Japan, they do exist and teachers must develop skills to deal with them. New Japanese teachers learn some classroom

management skills as they relate to the homeroom from the homeroom teacher during student teaching. The problems that may occur during a mathematics lesson, however, go unaddressed. New Japanese teachers learn to work with misbehaving students during their first year of teaching under the careful mentoring of a more experienced teacher.

In summary, it appears as if the Japanese mathematics student teachers spend their time during student teaching learning how to prepare, teach and reflect upon their lessons and leave the discussions of dealing with student behavior until they are in their first year of teaching. Student teachers in the United States, however, spend the majority of their time learning about classroom management. It is clear that student teaching has a different focus and purpose in each country.

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