

# What Are Classroom Management Issues For Undergraduate Science Teaching Assistants?

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## ABSTRACT

The purpose of this study was to explore and discover classroom management problems encountered by undergraduate science teaching assistants (TAs). Information about TA perceptions of classroom management problems was obtained to better understand how gender, teaching experience, and academic discipline affected their classroom management experiences. Study subjects consisted of 25 TAs in various science departments (e.g. physics, chemistry, and biology) at a large Midwestern University. Sixty percent (n=15) of them were male, and forty percent (n=10) were female. Regarding subjects' teaching experience with undergraduate level students, twenty percent (n=5) of them possessed three years or more teaching experience, forty percent (n=10) had teaching experience between one and three years, and the other forty percent (n=10) had a teaching experience of one year at the time of the study. An Email survey was used for data collection from 125 graduate TAs in various science departments. TAs' responded to ten challenging student behaviors in the classroom that were developed from DiGiulio's (1995) questionnaire. Results from this study reveal a variance in classroom management problems were primarily due to TA type (United States Teaching Assistants or International Teaching Assistants).

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## INTRODUCTION

Graduate students serving as teaching assistants (TAs), especially science (e.g. physics, biology, and chemistry) TAs have become increasingly responsible for much of the instruction occurring at the undergraduate level at many universities in the United States.<sup>1</sup> According to Jackson and Simpson,<sup>2</sup> a large percentage of TAs are serving as primary instructors in addition to laboratory instructors. Rosati (unpublished paper) reported that in some universities (e.g. Yale), the proportion of undergraduate instruction delivered by science TAs has reached more than 50%. Allen and Reuter,<sup>1</sup> Cano, Hones and Chism (unpublished report); Pica, Barnes and Finger,<sup>3</sup> all discovered that TAs play a major role in undergraduate instruction, many institutions have implemented training programs to prepare TAs for grading tests and papers, holding office hours, supervising laboratories, leading recitations, and/or assuming full responsibility of a course. However in contrast to this role, very little research has been conducted on factors that influence TA teaching effectiveness.

The purpose of this study is to explore factors that affect TA effectiveness by examining classroom management problems encountered by TAs. This study was conducted to accumulate information about TA's perceptions of their

classroom management problems that they experienced in their undergraduate instructional activities.

Specifically, this study was conducted to address the following three research questions:

1. What are the similarities and differences in classroom management issues experienced between male and females TAs?
2. What student attitudes are of concern to science TAs?
3. What are similarities and differences between United States Teaching Assistants (USTAs) and International Teaching Assistants (ITAs) with respect to solving classroom problems?

In this study, a TA is characterized as a graduate student employed as a teaching assistant. An ITA is a graduate student born and previously educated outside the United States. In contrast, a USTA is a graduate student born and educated in the United States. Classroom management is defined as the task of planning, organizing, motivating, and controlling college classroom environments.<sup>4</sup>

## TA Type

Allen and Rueter,<sup>1</sup> report that universities are focusing more on developing training programs to help prepare TAs for their classroom responsibilities. They also found that some

TA training programs are designed specifically for the needs of ITAs. These programs emphasize teaching style, educational and cultural differences, and English proficiency. While studying as an International student for four years I have witnessed, on many occasions, that ITAs are unaware of U.S. educational settings and the nature of interactive teaching in a U.S. classroom environment. ITAs usually see their responsibilities as conveying information and for this reason approach teaching more formally, as opposed to the more interactive ways of the USTAs. Many ITAs experience major obstacles related to their undergraduate educational background, such as lack of speaking English effectively and differences in cultural expectations.<sup>5</sup>

Many people assume that international teaching assistants perceive and experience more problems in classroom than do USTAs.<sup>6</sup> Ronkowski,<sup>7</sup> focused on the differences and similarities between USTAs and ITAs in terms of teaching style, expectations of students, and views on the TA-student relationship. Results from this study revealed more similarities than differences between the two types of TAs.<sup>7</sup> He concluded that differences in experiences and perceptions between ITAs and USTAs were of degree and not of kind. Twale, Shannon, and Moore,<sup>6</sup> investigated TA's self-ratings and students' ratings of native-speaking TAs and ITAs on a total of nine teaching effectiveness factors. Their results showed that international TA's self-ratings were significantly higher than USTA's self-ratings. However, students' ratings of USTAs were significantly higher than their ratings of ITAs. The findings revealed by the current study indirectly suggested that cultural differences influence both USTA's and ITA's perceptions of classroom management.

### **Gender**

Gender has been reported to have a significant influence on classroom interactions between TAs and students. Boggs and Wiemann, (unpublished Eric document) reported that student gender influenced academic faculty member-student interactions. They cited that male graduate students spoke more frequently in class and for longer periods. It has been reported that they tended to interrupt female students and professors more frequently in classes taught by female instructors than male instructors.<sup>8</sup> In Brook's<sup>8</sup> study, they found male professors were judged favorably when they spent a large proportion of class time presenting material and information and when the amount of input by students was high. In contrast, female professors were evaluated negatively when using an interactive teaching style with involvement of their personalities in the learning process. The authors suggested that students might have perceived female professors' interactive style as lacking competence in the subject matter. These findings suggest that gender may play a significant role in TA's classroom management experiences.

### **Teaching Experience**

The work of Prieto and Altmaier<sup>10</sup> and Davis<sup>5</sup> shows that TAs with more teaching experience reported higher levels of self-efficacy toward teaching, and are rated more highly by their students than those with less experience. In their study of the impact of teaching experience on TA's teaching effectiveness, Shannon, Twale, and Moore<sup>6</sup> divided TA's teaching experiences into three categories: 1) no previous teaching experience, 2) college teaching experience, and 3) K-12 teaching experience. They concluded that TAs with K-12 or college teaching experience were rated as more effective than those without such experience. However, the authors suggested that poor or nonexistent supervision may have affected these findings. We suspect that if TAs do not have any teaching experience, their responses to students coming to class unprepared, missing class, failing to complete homework, or not participating in class may be adversely affected. In contrast, TAs with teaching experience may be more able to identify and find possible solutions to undesirable student behaviors. Therefore, we expect TAs with previous teaching experience to report fewer problems than TAs with no previous teaching experience.

Austin<sup>11</sup> noted that researchers have reported disciplinary differences in teaching and learning in higher education. In addition, faculties teach and conduct research in a cultural context of their particular discipline and institution. Instructors from different disciplines differ in attitudes and personal characteristics. We assume that, based on the findings of previous research on classroom management problems, the academic discipline may influence how TAs handles classroom management issues.

## **MATERIALS AND METHODS**

### **Participants**

Before beginning the study, an IRB approval to survey human subjects was secured. A sample of 125 individuals who received the Email regarding this study were selected using a stratified random sampling from a list of over 450 TAs employed by the university during our set time period. Then an Email was sent to 125 graduate TAs in science (physics, biology, and chemistry) departments at a large midwestern research university. Twenty-five graduate TAs who hold positions in various science departments responded to the survey. We did not attempt a follow-up email because the response number was considered sufficient for the study. Eighteen (70%) were USTAs and seven (30%) were ITAs. Sixty percent were male, and forty percent were female. Our subgroups were the science departments of physics, chemistry, and biology. A blank survey was sent to 125 TAs. Each TA was asked to respond to a ten item-questionnaire (Table 1). The questionnaires consisted of self-assessment items related to classroom instruction and were items selected from published literature. The specific items in the questionnaire were developed from DiGiulio's questionnaire.<sup>9</sup>

## RESULTS

The top five classroom management problems encountered by all TAs were: 1) student comes to class unprepared, 2) student missing classes, 3) student coming to class late, 4) student eating and/or drinking during the class, and 5) student challenging the instructor's comments or lecture. Also included are the top five classroom management problems reported by USTAs and ITAs. Four of the top five classroom management problems experienced by USTAs were also experience by ITAs. However, each type of TA experienced different behavior problems. USTAs reported problems with students who pack up before the class is over and with students who read non-class materials during class. On the other hand, ITA reported having to deal with students who make offensive personal comments to them.

As shown in Table 1, USTAs and ITAs each reported differing student behaviors to be of high concern; USTAs reported the following: Students pack up before class is over. ITAs reported student's behavior as missed classes. In addition, Table 2 indicates the most important differences between male/female USTAs and ITAs. For instance, male USTAs reported four different student behaviors that were not reported by male ITAs: students eating and/or drinking in the class, students packing up before the class is over, students flirting with other students, and students reading non class materials in the class. If compared to the classroom behaviors experienced by male ITAs and female ITAs, students packing up before the class is over and students reading non- class materials in class are classroom behaviors never encountered by both male and female ITAs.

## DISCUSSION AND CONCLUSIONS

In this study, undergraduate classroom management problems as perceived by TAs' were investigated. TAs' responses to ten student classroom behaviors described in the survey instrument were used to assess: 1 differences between USTAs and ITAs, 2 gender differences, and 3 disciplinary differences.

The differences found between USTAs and ITAs on student classroom behaviors may be based on TA's educational backgrounds, previous experiences, or perspectives on students. It can also be explained by the differences between the U.S. and international educational systems and cultures. In Althen's (unpublished report) paper, because the U.S. culture values discussion and divergent thinking student behaviors such as "Student challenges my comments or lecture," and "Student makes offensive comments to me during lecture" were of little concern to UTSAs.

Four of the top five classroom management problems experienced by USTAs were also experienced by ITAs. There were three differing classroom management problems reported by each TA group. USTAs reported students who pack up their books before the class was over, whereas ITAs

**Table 1.** Top Five Classroom Management Problems experienced by TA

Problems	All TA (N=25)	USTA (N=18)	ITA (N=7)
Student comes to class unprepared.*+	97.7%	98.2%	92.6%
Student misses classes.*	85.9%	90.7%	75.0%
Student comes to class late.*+	83.6%	88.0%	73.9%
Student is eating and/or Drinking during the class.*+	63.2%	64.3%	60.0%
Student challenges my comments Or lecture.*+	46.4%	35.0%	75.0%
Student packs up books before the class is over.+	45.3%	20.5%	---
Student blames me for his/her unsuccessful performance.	32.6%	30.0%	37.5%
Student flirts with other students.	30.0%	37.5%	16.7%
Student reads <i>Indiana Daily Service</i> or other non-class materials in class.	15.0%	20.7%	---
Student makes comments that are Offensive to me	9.70%	---	27.0%

*Notes:* The items listed with frequencies indicate the top five classroom management problems reported by all TA, USTA, and ITA respectively. \*These are the top five classroom management problems that were of the high concern to ITA. + These are the top five classroom management problems that were of the high concern to USTA.

reported problems with students missing class, and students who made offensive comments.

Table 2 presents the gender differences concerning classroom management problems. Female TAs, from both groups (ITAs and USTAs), reported experiencing four different student behaviors than male TAs from both groups: 1 student comes to class unprepared; 2 student misses the class; 3 student comes to class late; and 4 student is eating and/or drinking during class. On the other hand, Male USTA reported six different student behaviors than male ITAs. Briefly, these are associated with students who miss the class, comes to class late, eats/drinks in class, and reads other materials.

When comparing female USTAs to female ITAs, we have found that more female USTAs than female ITAs reported experiencing three student behaviors that are problems: students who comes late, miss class, and students that pack up before the class is over. Similarly, male USTAs differed from male ITAs on four student behavior problems: student eating and/or drinking in the class during the lecture, student packs up the books before the class is over, student flirting with other students, and students reading other non-class materials (e.g. Daily Newspaper) in class.

**Table 2.** Comparison of Male and Female USTAs vs. Male and Female ITAs on Student Behaviors

	M.USTA (N=6)	M.ITA (N=4)	F.USTA (N=11)	F.ITA (N=4)
Student Behaviors				
Student comes to class unprepared.	75%	75%	100%	75%
Student misses class.	75%	50%	89%	75%
Student comes to class late.	75%	50%	78%	75%
Student is eating and/or drinking during the class.	75%	0%	56%	75%
Student challenges My comments or Lecture.	25%	75%	18%	25%
Student packs up books before the class is over.	50%	0%	44%	0%
Student blames me for his/her unsuccessful performance.	50%	25%	10%	25%
Student flirts with other students.	17%	0%	20%	50%
Student reads <i>Indiana Daily Service</i> or other non-class materials in class.	33%	0%	0%	0%
Student makes comments that are offensive to me.	20%	25%	0%	0%

Three variables (e.g. TA type, gender, and academic discipline) relative to TA's classroom management problems were studied. In this study, USTAs reported significantly more classroom management problems than ITAs. Although "learning can take place in the absence of good learning" Welch,<sup>12</sup> good teaching plays a definite role in teaching. The results of this study provide specific information about TA's perceptions of classroom management concerns. TA's responses to open-ended questions in the survey revealed some interesting findings. For example, one TA wrote, "Students have a rather casual attitude toward education and authority, but I wouldn't say it is a problem. It is only problem when they are disruptive...". One of the primary goals of classroom management is to provide the best conditions and climate for learning.<sup>9, 13</sup>

Based on the results from this study, TAs can anticipate potential problems in terms of classroom management. Administration must be committed to providing TAs with quality classroom management instruction. We propose the

following: 1 we should train all graduate TAs because they have a significant role in higher education. 2 we should help ITAs to better understand U.S. classroom culture in terms of the U.S. educational system, in elementary and secondary schools (such as ITAs should become familiar with a more teacher oriented classroom style), in order to more effectively communicate with American students. 3 we should provide both USTAs and ITAs with instructional techniques. Teaching relies strongly on a communication process between the teacher and students.<sup>9</sup> Although students are expected to attend class prepared for class discussions, TAs need to challenge and motivate students in order to facilitate the learning process. For that reason, TAs should be provided with at least one instructional course from the Department of Education to learn about instructional techniques and other instructional information that he/she will need to use in the classroom (e.g. how to handle a student if he/she is coming late or being obstructive).

TA developers might use the findings to improve TA training programs. New TAs can be provided with the mock classroom management problems they are likely to experience. This study describes the investigation of TA's classroom management problems in terms of TA type, gender, and academic discipline. The results of this study provide specific information for TAs training programs that helps TA to improve their teaching skills and effectiveness.

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