

Putting TAs Into Context:

Understanding the Graduate
Mathematics Teaching Assistant

Dissertation Study, by Jason Belnap

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Problem/Concerns

- Dependency on TAs for the teaching of many undergraduate courses
- Implementation of college math reform
- Large number and variety of training programs
- Lack of research showing effects of training
- Omission of complexity of MTA experience

Framework: Socioconstructivism

- MTAs build their own understanding of teaching
- Their understanding of teaching is grounded in their social experiences
- The various elements of the social context impact MTA teaching practice
- In exchange, MTA views and practices shape their social context

Goals of Study

- Describe the views and development of various MTAs
- Describe the complexity of their experience and identify factors influencing it
- Provide insight and information for development, selection, and implementation of MTA training programs

Pilot Study Implications Influencing Present Study

- Duration of study should be at least one year
 - Changes from one semester to another evident
- Narrow study to non-international MTAs
 - ITAs' experiences varied greatly, too much for inclusion in a single study
- Limit time demands of participants
 - Time demands was **leading** concern of MTAs

Methods: Year-long Study

- Interviews (individual, semistructured)
 - TAs, supervisors, and training faculty
- Observations
 - Classroom teaching, course meetings, supervisor debriefings, and training programs
- Document Analysis
 - Supervisor notes, related TA assignments, and others as available

Interviews

- TAs' supervisors
 - Views/concerns of TAs, advice/instruction given
- TA training faculty
 - Understanding of goals/changes in program
 - TA experiences, common concerns
- Year-long TAs: 4 interviews (2/semester) descriptions follow
- Additional TAs: 1 interview (Spring 2003)

TA Interview 2: End of Fall 2002

- Difficulties/challenges experienced
- Factors impacting teaching practices
- Interview Task: Teaching Practices
 - Description of teaching practices
 - View of “ideal” teaching practices
 - Identification of factors causing discrepancies
- Plans for Spring 2003

TA Interview 1: Early Fall 2002

- Teaching background/experience
- Supervisor interactions/involvement
- Current workload/experience
- Views of TA training
- Views of teaching

TA Interviews 3 & 4: Spring 2003

- Changes/consistencies in teaching practices
- Comparison with experience Fall 2002
- Interview Task: Teaching Influences
 - Discussion of sources of influence
- Interview Task: TA Priorities
 - Evaluation of responsibility priorities
- Looking ahead to future teaching

Participants

- **Current Participants**
 - Five new MTAs
 - Two experienced MTAs
 - Supervisors of participating MTAs
- **Additional Participants**
 - Two former MTAs
 - Two additional experienced MTAs
 - Two MTA training faculty

New MTAs

	NTA 1	NTA 2	NTA 3	NTA 4	NTA 5
Gender	F	F	M	M	M
Prior Teaching	ULab	H.S.	None	None	None
Degree Program	Ph.D.	Ph.D.	Ph.D.	Ph.D.	Ph.D.
Area of Study	App.	MEd.	App.	Math	App.
Year in Grad. School	1st	1st	2nd	2nd	1st

Experienced MTAs

- **Current participants**
 - Male, 3rd year, Ph.D. student studying Math.
 - Female, 2nd year, Ph.D. student studying Applied Math.
- **Participation limited due to MTA time concerns**

Additional Participants

- **Two former MTAs**
 - Include the experiences of MTAs with extensive TA experience
- **Two experienced MTAs**
 - Increase the representation of current, experienced MTAs
- **Two MTA training faculty members**
 - Gain insight into the background and goals of the MTA training programs

Mandatory TA Training for New TAs

- **Departmental Training**
 - Three days, a 1.5 weeks prior to start of classes
- **Campus-wide Training**
 - One day, a week prior to start of classes
- **Math 597T Course**
 - One unit course, meeting once a week (or every other week) for one hour
 - Regular assignments

Campus-wide Training (1 day)

- **Speakers talking about responsibilities and various campus resources**
 - TA benefits, policies and procedures, disability resources, sexual harassment, academic integrity, advising, student counseling, etc.
- **Two break-out sessions**
 - Learner-centered instruction
 - Cultural diversity in the classroom

Departmental Training (3 days)

- **Presentations/discussions on pedagogy**
 - Cooperative learning strategies, engaging students,
- **Presentations on duties/responsibilities/concerns**
 - Syllabus preparation, supervisor interactions, grading, departmental policies/procedures
 - Controlling workload, first day of class, student/teacher interaction
- **Open-topic question panel**
- **Case discussion (grading & fairness)**
- **Practice teaching with peer feedback**

Math 597T Course

- **Case discussions**
- **Practice teaching with peer feedback**
- **Homework Assignments (Fall 2002)**
 - Prepare two test questions
 - Write about uses/misuses of “minus sign”
 - Observe experienced teachers
 - Have videotaped and write report on own classroom teaching

Teaching Responsibilities/Duties

- Full responsibility for class
 - Prepare/teach class, assign/collect/grade homework, prepare exams, hold three office hours weekly
- Attend course meetings
- Submit grades after each exam
- Interact with supervisor
 - Debrief from two observed classes per semester
 - Get approval for all major quizzes/exams
- Serve in tutoring room at least one hour/wk.
- Participate in Math 597T (1st year MTAs only)

Preliminary Results

- Factors influencing TA teaching practices
 - Workload, time demands, course structure, supervisor suggestions, Math 597T assignments, individual reflection, past instructors, and more
- Varied attitudes toward TA training
 - Based on type of training and TA background
- Diverse impacts of supervision on TA practices
 - Based on prior teaching experience