Mentoring TAs: Lessons Learned from the Physics GTA Development Program

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Background and Motivation

- **Previous TA training:**
  - General TA orientation (pedagogy & policies)
  - Weekly “next week’s lab” meetings (content)

  ➞ Disconnect!

- **Problems:**
  - TAs’ lack of effective teaching skills
  - Overworked TAs (research vs teaching)
  - Low TA motivation (“why does this matter anyway?”)

(context: large enrollment intro physics)
Course Structure

- **JumpStart to Teaching**
  - First Day of Class
  - Active Learning
  - Engaging Explanations
  - GT Policies
  - Time Management
  - Microteaching
  - Classroom Management

- **Semester Meetings**
  - Group Work
  - Grading
  - Leading Discussions
  - Midterm Evaluations
  - Professional Development (teaching philosophy)

Focus on both pedagogy and physics content, but also include professional development strategies.
Usefulness of Course Topics

- Microteaching
- Midterm Evaluations
- Grading

Active Learning
- Classroom Management
- Group Work
- Time Mngmnt.
- Explanations

Teaching Phil.
- Discussions
- First Day

From TAs’ in-class participation and engagement, and comments in their final class reports

Arrows indicate:
- Most useful
- Least useful

Highlighted: Immediately applicable topics
Cycle 1 (pilot): Fall 2013

PEDAGOGY
- group work

PHYSICS
- active learning
- discussions
- grading

PROFESSIONAL DEVELOPMENT
- teaching philosophy
- time management
- GT policies

where’s the mentoring?

gaps

little bit here
Cycle 2 (current): Fall 2014

**removed:**
- group work
- explanations
- discussions
- teaching philosophy

**modified:**
- classroom management
- active learning
- time management

**new topics**
- more mentoring!

**PEDAGOGY**
- classroom observations
- teaching as leadership
- time management
- GT policies

**PHYSICS**
- problem solving
- active learning
- grading
- midterm evaluations

**PROFESSIONAL DEVELOPMENT**
- becoming a physics TA
Course Structure

- **JumpStart to Teaching**
  - Being a TA at Georgia Tech
    ‣ teaching and learning
    ‣ physics TA identity
    ‣ TA duties and responsibilities
    ‣ GT policies
  - Teaching Physics
    ‣ active learning in physics
    ‣ explanations and preconceptions
    ‣ problem solving
  - Microteaching
  - Inside and Outside the Classroom
    ‣ classroom management
    ‣ time management

- **Application Meetings**
  - Grading
  - Not-So-Candid Camera
  - Midterm Evaluations
  - Teaching as Leadership
Mentoring TAs

- Provide guidance in pedagogy, content, and professional development
  - Experienced TAs can help a lot (classroom anecdotes; they know how the labs work, etc)
  - Observe TAs while teaching and give them feedback so they can reflect and improve
  - Show them how their new teaching skills can be relevant to their future career goals

Don’t throw them head-first into the deep end and expect them to swim!
Mentoring Elements (Fall 2014)

• Being a TA at Georgia Tech
  - Probe TAs for their ideas on teaching and learning
  - Get new TAs to think about their new roles as educators
    ‣ how to juggle many ‘hats’?
    ‣ what will motivate them to be good TAs?
    ‣ what kind of support do they need?
  - Explicitly state their new duties and responsibilities

• Time Management
  - Where does the time go?
  - Identify essential and important tasks, and eliminate time-sinks
  - Short-term and long-term planning
  - Setting boundaries on TAing time
Mentoring Elements (Fall 2014)

• **Observations and Feedback**
  - **Not-So-Candid Camera**
    ‣ new TAs watch videos of old TAs in the classroom, and critically analyze their actions
  - **Classroom Observations**
    ‣ every new TA is observed while teaching at least once per semester
    ‣ option to be video recorded is available
    ‣ mentor provides one-on-one feedback to TA

• **Teaching as Leadership**
  - Help TAs identify transferable skills in teaching that can be used beyond the classroom
Lessons Learned

• **Content is Important**
  - need to make sure TAs and instructors are on the same page

• **Pedagogy is Important**
  - just because they know the content, doesn’t mean they know how to teach it

• **Professional Development is Important**
  - better motivation when they can see how teaching helps them achieve their professional goals

★ **Mentoring is Important**
  - in all three aspects!
What can you do?

• **What do you need your TAs to be able to do?**
  - content knowledge, teaching tasks, administrative tasks...

• **Where do your TAs struggle the most?**
  - insufficient content knowledge
  - managing time and/or setting boundaries
  - difficulty with classroom management
  - low motivation
  - ...?

• **How can you provide mentorship?**
  - be explicit about your expectations
  - guide them through what they need to know and do
  - encourage them to embrace their role as educators, both for the sake of the students and for the benefits to the TAs’ future careers
  - give them feedback so they can improve
  - listen to them and provide support where needed, including referring them to more experienced TAs or campus services