Preparing undergraduate teaching assistants for success

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Need effective, responsible TAs
Size of CS major tripled in 4 years

Increased recruitment of undergrad TAs
Increased need to provide training

CS major students 2005-2015

- 213 in 2011
- 627 in 2015

Increased need to provide training
Want to improve learning experience and climate for CS undergrads

- Prior to 2014, undergraduate TA training was required only for one intro programming course. (Grad TA training was compulsory.)
- Concerns of implicit bias
- Elitism exhibited by some TAs
CS undergraduate TA/consultant training

- Focus on responsibilities and concerns common to all TAs:
  - **In-person interaction, e.g., office hour**
  - **Grading and written interaction online**
  - **Diversity and ethical considerations**

- Does not include classroom teaching as few undergraduate TAs have that responsibility
Highly interactive training (3 hours)

Skits!
- Unprepared or underprepared students (be a helper not gatekeeper)
- Crowded office hours and academic integrity
- Grading that respects students and their privacy
- Distressed students
- Advising students on non-course topics, e.g., choosing a major
- Keeping boundaries

Discussion based on written scenarios
- Strategies for office hour (and what to avoid)
- Effective and fair grading
- Written communication on online forum

Game and presentation
- Implicit bias
Why use skits or role-play?

- Pushes participants to move beyond simple rules to engage in analysis given a set of realistic circumstances
- Widely used in ethics training
- No simple right or wrong: must consider possible actions and their implications
- A safe environment to confront a dilemma for the first time
The setting:

*TA has just finished helping student with a homework problem*
Thanks! Now I understand why my program kept crashing.

You’re welcome. Remember that next time you want to start testing your program earlier; test each function independently. Do you have any other questions?
[Hesitantly] No... Actually, I sort of have a question... I’m kinda thinking of majoring in CS, but I just don’t want to be programming all the time, hacking at the computer all night long. I want to do other stuff, you know? Talk to people, hang out with friends. Do you think I belong in CS?
When the skit ends, analysis begins

• What’s the immediate need?
  • Participants suggest how TA should respond and analyze options

• What are the broader issues?
  • Skit set us up for broader discussion of related issues
  • Most of the training time is spent on post-skit discussion
  • TAs participate readily (usually)
The setting:

*Student has just walked into TA’s office hour*
I don’t know what I need to do for this assignment.

OK. Let’s see where you are. Can you show me what you have so far? Are you getting specific error messages?
I don’t have much yet. Can you show me what I need to do?

Let’s start from the specifications. What does this [pointing to something] mean?

I wonder if he/she really has started yet.
It’s 3 hours to the deadline. Stop asking and just give me the answer!

I dunno...

I wonder if he/she really has started yet.

Let’s start from the specifications. What does this [pointing to something] mean?
I’ve read the question and notes over and over and I still don’t understand. Ahhhhh!

I dunno...

I wonder if he/she really has started yet.

Let’s start from the specifications. What does this [pointing to something] mean?
Trainer—moderator—makes sure that important issues are vetted

- This is not an easy task
- Must insert missing ideas without “taking over”
- If a bad idea persists, intervene without shutting down the atmosphere of open discussion
Trial, optional training in Fall 2014, Compulsory training from Spring 2015

- High demand for training: 128 returning and new TAs choose to participate in first semester
- 149, 130, 103 in subsequent semesters
Basic feedback gathered

- “Training provided valuable insight and advice for how to run effective office/consulting hours”  
  84% rated  
  4 or 5 out of 5

- “Training provided valuable insight and advice for how to grade well and effectively”  
  76% rated  
  4 or 5 out of 5

- “Training informed and reminded me of my ethical responsibilities as a TA or consultant”  
  91% rated  
  4 or 5 out of 5
Representative comments from participants

- Skits and role playing was great
- [I liked the] implicit bias presentation
- Would like to hear more about what is and isn’t acceptable
- Acting out skits very well described difficult situations
- I liked the situations as they were very probable
- The skits are particularly fun and memorable
- The part about implicit bias is also surprising and informative
- Advice from more experienced TAs was very helpful
The most productive discussion include the voice of experienced TAs—must invite experienced TAs to return.

So many things to cover, so little time.

Direct evaluation—impact on students—difficult to measure.

Evaluating individual undergraduate TAs also a challenge.
Thanks to all my collaborators!

Linda Tompkins
David Gries
Eva Tardos
Steve Marschner
Michael Clarkson
Anne Bracy
Mike George