A Grassroots Approach to Graduate Teaching Assistant Mentoring

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A GRASSROOTS APPROACH TO GRADUATE TEACHING ASSISTANT MENTORING

— How to Start Your Own Program —

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Introduction & Motivation

Graduate students, whether masters or doctoral candidates, benefit greatly from their academic experiences. However, graduate school is not limited to course work and research, but also includes teaching experiences as graduate teaching assistants (GTAs). Although GTAs are technically proficient in course materials, other factors can cause teaching experiences to go awry for them, their students, or the course supervisor. These factors arise out of a need for quality training on issues including pedagogy, interaction resolution, organizational concerns, and professional matters.

Currently, while graduate students are taught the basics of research, their ability to teach is not addressed. Also, departments don't have resources (time and money) to meet this need. This paper provides a grassroots approach to improve teaching techniques through GTA mentoring. GTAs are encouraged, with materials supplied here, to seek-out and consult with more experienced GTAs who will serve as their mentors.

What is GTA Mentoring?

GTA mentoring is an approach for improving teaching through peer-evaluation and supervision. In a mentoring program, each novice GTA is assigned a mentor who is an experienced teacher. The mentor supervises the novice GTA by sharing experiences, knowledge, and insights into the teaching process, as well as, insights into the research process.[1] *Mentors guide, they do not judge.*

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[1] While this document proposes mentors solely for pedagogic improvement, mentors can also help GTAs in issues related to research and departmental politics.

Peer-evaluation and supervision is not a new concept, and it has shown good results when applied. (Jerich, 1991; Smith, 1991; Symmes, 1991)

Do You need a Mentor?

If you've asked this question, or if you're a novice GTA then you probably need a mentor. Even if you have had previous teaching experience, you can benefit from a mentor's insights.

GTA mentoring provides evaluation by coequals (peer-evaluation) which is non-confrontational. By reducing the stress associated with evaluation, mentors can get a better picture of the GTAs teaching abilities and provide focused criticisms. Supervisor evaluation, on the other hand, is often confrontational and highly stressful.

There is no loss of pride in having a mentor. On the contrary, (peer) mentors can re-assert your strengths and build teaching confidence, while helping correct problems. Mentors can also learn from their GTA charges by re-examining their own teaching styles and conflict resolution schemes.

Having a mentor is a win/win situation for both the GTA and the mentor.

Starting Your Own Program

This document presents a framework in which novice GTAs can start their own mentoring program. This grassroots approach, which begins with the GTAs, proposes that novice GTAs seek-out more experienced people to serve as mentors. We believe that this approach is a cost effective method that can be combined within an

overall training program. It is not our intention that this be the sole resource available to novice GTAs, but one of many resources.

There are four distinct steps to create your own mentoring program:

Preliminary Work
① Select a Mentor

Evaluation Session
② Pre-Evaluation Conference
③ Evaluation
④ Post-Evaluation Conference

With the exception of the first step, these steps can be repeated over several *evaluation sessions*, thus providing an evolutionary approach to GTA training.

Selecting a Good Mentor

The first, and possibly most important, step is to select a mentor. Because of this grassroots approach to establishing a program, it is contingent on the novice GTA to select a mentor. There are many possibilities: yourself, your students, other GTAs, faculty, or course supervisor.

Yourself. *Can you be your own mentor? How good are your introspection skills? How objective can you be about your own performance and abilities?* In general, you will not be a good mentor for yourself. You will reinforce bad habits and fail to recognize deficiencies and problems in your teaching.

Your Students. Students, within your class, can provide valuable feedback. (Aleamoni, 1981) However, student feedback is suspect. Students have their own agendas which, more often than not, conflict with the GTA's evaluation. Also, undergraduate students are unaware of the graduate context with respect to GTA teaching duties and research responsibilities.

Other GTAs. *Experienced GTAs* are a good alternative for peer-evaluation. However, there is a wide range of teaching ability among experienced GTAs. (Having taught does not imply that one is a good teacher!) Departmental administrators can recommend good experienced GTAs based on past performance. Departmental rumor and scuttlebutt is also helpful in selecting an experienced GTA.

Other *novice GTAs* can also serve as mentors by raising issues for discussion; however, someone who has taught before might be a better mentor. A word of caution: try to avoid THE BLIND LEADING THE BLIND.

Faculty. Faculty, not associated with the GTA's assigned class, can be excellent mentors. Faculty have taught and performed research for many years and their insights are invaluable. However, faculty evaluations are *not* peer-evaluations.

Supervisors. Supervisor mentors, like faculty mentors, have much experience to draw on. But also like faculty mentors, supervisors may not provide a stress-reduced peer-evaluation. In fact, supervisor evaluations are very stressful and can affect the GTA abilities during the evaluation.

This approach requires *volunteer* mentors—remember this fact when you approach someone to serve as your mentor. Often, it is a case of finding someone who will *make* the time for you. And, as more people become involved, this process will build on itself.

Pre-Evaluation Conference

The next step, following mentor selection, is to identify critical issues for the mentor to evaluate in a *pre-evaluation conference*. Issues are selected by both the GTA and the mentor. There are four categories of issues that are important for mentors to evaluate GTAs against: pedagogical, interaction, organizational, and professional issues.

Pedagogical Issues. Teaching encompasses many different skills and abilities. This category represents skills associated with teaching such as *strategy, delivery, style,* and *effect*.

Interaction Issues. Interactions with students and supervisors can take on a range of possibilities, from ambivalence to fisticuffs. This category includes interaction issues such as *conflict resolution, negotiation,* and *listening*.

Organizational Issues. The timely delivery of materials and organization of classroom activities are represented by this category.

Professional Issues. Graduate school is a stepping-stone to careers in advanced education, industry, and government. It is contingent on the experiences in graduate school to impress and reinforce professionalism and ethics.

These categories, which do not represent all aspects of GTA involvement in teaching, help to define critical areas for evaluation. Appendix A contains example forms that address each category for mentor evaluation.

Evaluation Methods

Evaluation is the main purpose of the mentors, and what the GTAs need the most. There are several forms of evaluation that the mentors can perform for the GTAs: in-class evaluation, test/project material, presentation material, and organizational evaluation.

In-class Evaluation. By far the most telling of the evaluation techniques is in-class evaluation. In this case, the mentor visits the GTA's class and evaluates the GTA. Using evaluation criteria defined in the pre-evaluation conference the mentor will rate the GTA's performance. The mentor is also free to comment on other criteria. This method gives focused and pertinent feedback directly to the GTA. Also, we don't expect the GTA to *perform* for the mentor—the mentor is there to help and not to be impressed.

Testing/Project Material Evaluation. Tests and projects used by a GTA can be evaluated by mentors based on: *applicability*, *difficulty level*, *clarity*, etc. Mentor evaluation of these materials can also discriminate if the GTA has over- or under-expectations of the students, and if the classroom material is reflected in graded work. (This implies that the mentor is familiar with objectives of the class, as well as, techniques for presenting the material.)

Presentation Material Evaluation. The evaluation of presentation materials, if prepared by the GTA, is much like the evaluation of testing/project materials.

Organizational Evaluation. Finally the mentor's evaluation of the GTA's organization can help focus the course preparation, delivery, testing/project materials, and presentation materials.

Post-Evaluation Conference

Once the mentor has evaluated the GTA (either through an in-class visit or a review of materials), then a post-evaluation conference is necessary. At the post evaluation conference the GTA is presented with the mentor's findings. Because this is a peer-evaluation setting discussion should be free and honest. It is the purpose of the mentor to *help* the GTA, not simply to rate the GTA. Both mentor and GTA profit from this free exchange and teaching strategies and styles are improved.

However, remember that the mentor is *NOT* an expert, mentors only speak from their experience and knowledge. Differences of opinions will arise in which there will be no easy solution, and in fact, differences may not have solutions! This is not an artifact of either person being wrong, only that there *are different and valid* approaches

to teaching and grading. A good mentor will point out the different approaches and stimulate discussion about their relationships to the GTA's approach.

It is assumed that GTAs will take the mentor's feedback and incorporate changes if necessary.

Other Ways to Utilize Mentors

Mentors are your confidants concerning your teaching and research skills. They are very helpful, and with the right mentor, a GTA can flourish and enjoy their graduate experiences, while side-stepping many common first year problems.

Hallway Meetings. Often teaching crises don't wait for scheduled GTA-Mentor meetings. In this case, remembering that mentor's time is volunteered, the GTA could approach the mentor for a hallway meeting. These are informal meetings that typically last less and 5 minutes. The GTA outlines the problem for immediate mentor feedback. However, anything requiring more that 5 minutes should have a scheduled meeting.

Proof Readers. Proof reading is something that we all must endure; however, mentors willing to serve as a proof reader are invaluable. Mentors who proof read can look for common mistakes that novices make, as well as, identify problems in the materials. Mentors can help with outlines, research papers, and even proposals. However, mentors should be used sparingly in this capacity, and should be given credit when due.

Research Presentation Feedback. Mentors can also help critique your presentation of your research materials, e.g., preliminary exams, conference presentations, and technical meetings. Like proof reading, use your mentor sparingly.

Conclusion

This paper has presented a grassroots approach to GTA mentoring. GTAs create an evaluation system which serves to improve their own teaching abilities. Mentors serve as the evaluation agent providing both pedagogic evaluation and guidelines of *academic citizenship*.

The main goal of a GTA is to support their department's teaching mission. In this spirit, experienced GTAs should recycle what they know to new incoming graduate students. Next year this will mean you! Recycle what you know!

Appendix A: Example Issues for Discussion and/or Evaluation

This appendix outlines some issues that can be used to generate discussion between mentor and GTA. *This list is not intended to be complete.*

Pedagogic Issues

❖ Issue: Teaching Style

Probably the most important aspect of teaching is teaching style. Currently GTAs are not required to undergo any in-depth training in teaching style, pacing, or public speaking.

❖ Issue: Classroom Control

Keeping control of students in a classroom is paramount to a good learning environment. Specific issues include:

- How is control established and maintained?
- How can control be re-established?
- Alternative methods for classroom control

❖ Issue: Questions & Answers

Dealing with questions and answers is critical to every day classroom activities. Specific issues include:

- Do you allow enough time for answers?
- Who do you ask the questions to? (yourself? students?)

❖ Issue: Getting Student Attention

Getting and sustaining the students attention can be a difficult matter depending on the GTA's teaching style.

❖ Issue: Special Needs Students

Many students have special needs, e.g., learning disorders, physical or mental handicaps, family problems. GTAs need to know how to prioritize these special needs and dispense individual help when necessary.

❖ Issue: Classroom Diversity

With the growing diversity in the classroom, considerations must be made for ethnic, gender, sexual, and religious orientations. In particular, the current lack of women and people of color in computer science hurts the industry in terms of diversity. GTAs need to be aware of actions, whether intentional or not, that could be misinterpreted in a negative fashion. Specific diversity issues include:

- Effect of diversity on classroom make-up
- Gender/Ethnic/Religious concerns in public speaking
- Pitfalls to avoid while speaking to a diverse group
- "Political Correctness"
- Departmental concerns related to diversity (How does our teaching affect our ability to get and maintain students of diversity? What more can we do as GTAs?)

Diversity of the GTA is also an issue (e.g., International GTA). A GTA could be working from a different set of implied assumptions that the students may not be aware. Also, because of the GTA's diversity, interactions with students may be strained.

❖ Issue: Student/GTA Health and welfare

GTAs and students are all human, and therefore, they can suffer from a number of disorders. While it is not proposed that GTAs have paramedic training, GTAs should be able to assess a medical situation and know the proper response. A student's life could count on a GTAs knowledge and action. Currently, GTAs are not trained to deal with any sort of medical situation, from common health episodes (e.g., epileptic fit) to life threatening disorders (e.g., heart conditions).

Interaction Issues

❖ Issue: Interaction with Individual Students

There are many forms of interaction that can occur between GTAs and students. Interactions can be academic or social, further interactions can be friendly or adversarial. GTAs are not taught proper conflict resolution for classroom or office situations. GTAs are often left to their own experience in personal relations to dictate the solutions.

Specific interaction issues include:

- emotion (student/GTA) in the classroom/office
- social setting encounters (restaurants, bars, social occasions)
- students who want to "Be the GTAs friend"
- teacher's pet, and how to avoid the appearance
- cheating
- how much (or little) to help an individual student
- how (and to what extent) to help a student catch up (who has missed a lot of work)
- tutoring students in other classes
- departmental specific interaction issues

❖ Issue: Interactions with Supervisors

The relationship between GTAs and supervising professors should always be open and congenial. However, in reality there do arise cases where

'personality conflicts' and 'misunderstandings' occur. Guidelines are needed to address the ambiguous GTA-professor relationship. In other words, a GTA needs to know what is expected of their performance, *as well as* what the GTA can expect from the supervising professor.

- time deadlines
- non-class related work

❖ Issue: Conflict Resolution (GTA & Policies)

The proper use of and adherence to department, college, and university policies are very important in the everyday life of GTAs. Cases that could possibly be addressed are:

- Breaking of department/university policy by student.
  Did the student know the policy? Was it malicious? Is this an important distinction? When would this distinction become important? Is it reported? How is it reported? What are possible steps for resolution?
- Department/University policy hinders teaching ability.
  Ignore the policy? What are resolutions to this problem?
- Overseeing instructor/professor breaks department / university policy.
  Does GTA ignore this? What are the GTA's responsibilities toward the professor and toward the department/university in this case?

Organizational Issues

❖ Issue: Classroom Administration

There are several administrative concerns that can confront GTAs. Specific issues concerning classroom administration include:

- record keeping
- using departmental *office* help
- using *standard* department teaching materials
- who can cover missed classes for you
- making a *good* course syllabus
- organizing a lesson plan

❖ Issue: GTAs with subordinate GTAs

In some cases a GTA with teaching duties may have another GTA assigned to perform grading. This creates a *class structure* in departmental graduate students. Specific issues include:

- GTAs in charge of GTAs.
  - *how to divide the work load*
  - *checking/reporting/evaluating GTA's performance*
- Department specific issues *(e.g., managing several GTAs in a Computer Lab setting.)*

❖ Issue: Grading and Assigning Grades

GTAs, in some cases, are responsible for assigning grades (as well as the grading). GTAs need to realize that some students deserve As and some students deserve Fs. GTAs *do not give* grades, they record achievement.

Professional Issues

❖ Issue: Sexual harassment

Sexual harassment, as of late, has been recognized as a serious threat to the well being of both male and female workers and students. GTAs need to be aware of actions, whether intentional or not, that could be misconstrued as sexual harassment.

Specific issues on sexual harassment include:

- Verbal sexual harassment. *Jokes are not jokes.*
- Non-verbal sexual harassment. *Actions speak louder than words.*
- How to avoid misunderstandings and misinterpretations.

❖ Issue: Dual Role and Research Responsibilities

GTAs have the dual responsibility of teaching *and* research. The balance that GTAs must maintain often comes at the expense of personal and social relations. GTAs must be able to prioritize their activities in such a way to main an acceptable balance.

❖ Issue: Professionalism in Research & Publication

Professionalism in research includes issues spanning from the *use of human/animal test subjects* to *statistical methods used in analysis.* These issues vary depending on research area.

Appendix B: Example Evaluation Materials

This section contains several forms that can be used by mentors when evaluating GTA performance and materials. These forms are general and should be modified to include department specific issues. Therefore, please adapt these forms to suit your specific needs. For information on other methods of evaluation see the Reference section.

Example Materials Evaluation Form	
GTA Directions:	Give your mentor the set of presentation materials you want evaluated along with this form.
Mentor Directions:	Please evaluate the presentation materials given to you using this form. Also, I would appreciate any other feedback you can give me concerning these materials.

Please Rate the *Materials* on the Following Scales:

```
              frustrating  ☹ ◆ ☺ ◆ ☺  satisfying
           dull for students  ☹ ◆ ☺ ◆ ☺  stimulating for students
         difficult to follow  ☹ ◆ ☺ ◆ ☺  easy to follow
              poor examples  ☹ ◆ ☺ ◆ ☺  good examples
         inadequate material  ☹ ◆ ☺ ◆ ☺  adequate material
              not usable  ☹ ◆ ☺ ◆ ☺  very usable
```

Do the materials support the student's learning of the course material?

Is it apparent what the presentation materials are conveying?

Are the presentation materials clear and concise? (e.g., Chalkboard vs. Overhead; Readability)

Please Rate the *Material Order* (i.e., presentation sequence) on the Following Scales:

```
                    dull for students  ☹ ◆ ☺ ◆ ☺  stimulating for students
          difficult for students to follow  ☹ ◆ ☺ ◆ ☺  easy for students to follow
  rigid ordering (allows no excursions)  ☹ ◆ ☺ ◆ ☺  flexible ordering (can be changed)
                    not usable  ☹ ◆ ☺ ◆ ☺  very usable
```

Is there a logical ordering to the presentation order?

Please Rate Your Estimate of *Using the Materials* on the Following Scales:

```
  too much material (volume)  ☹ ◆ ☺ ◆ ☺  too little material (volume)
              too much time  ☹ ◆ ☺ ◆ ☺  too little time
              too complex  ☹ ◆ ☺ ◆ ☺  too simplistic
              unclear focus  ☹ ◆ ☺ ◆ ☺  clear focus
```

Please include other comments as you see fit.

Thank you for your time and effort.

GTA Directions:	Invite your mentor to sit-in on your class for evaluation purposes, and provide this form.
Mentor Directions:	Please visit the GTAs class and evaluate the GTA based on this form. Also, any other feedback you can provide concerning the GTA teaching is appreciated.

Please Rate the GTA's *Presentation Style* on the Following Scales:

```
           frustrating  ☹  ♦  ☺  ♦  ☺   satisfying
      dull for students  ☹  ♦  ☺  ♦  ☺   stimulating for students
     difficult to follow  ☹  ♦  ☺  ♦  ☺   easy to follow
  difficult to understand  ☹  ♦  ☺  ♦  ☺   easy to understand
         unclear speech  ☹  ♦  ☺  ♦  ☺   clear speech
   inadequate eye-contact  ☹  ♦  ☺  ♦  ☺   adequate eye-contact
          not confident  ☹  ♦  ☺  ♦  ☺   very confident
          not effective  ☹  ♦  ☺  ♦  ☺   very effective
```

How can the GTA's presentation style be improved?

How can the GTA's pace, volume, and interactions be improved?

What other aspects of the GTA's presentation style need improvement?

Please Rate the GTA's *Questioning & Answering Ability* on the Following Scales:

```
                frustrating  ☹  ♦  ☺  ♦  ☺   satisfying
           dull for students  ☹  ♦  ☺  ♦  ☺   stimulating for students
          difficult questions  ☹  ♦  ☺  ♦  ☺   easy questions
  difficult to understand questions  ☹  ♦  ☺  ♦  ☺   easy to understand question
questions are not related to material  ☹  ♦  ☺  ♦  ☺   questions follow material presented
 inadequate (not enough) questioning  ☹  ♦  ☺  ♦  ☺   adequate (enough) questioning
       inadequate response time  ☹  ♦  ☺  ♦  ☺   adequate response time
              not effective  ☹  ♦  ☺  ♦  ☺   very effective
```

Who answered most of the questions (e.g., one student, a group of students, or the GTA)?

Was the quality of the GTA's answers dependent on the student(s) that asked the question?

How can the GTA's question & answering abilities be improved?

Please Rate the GTA's *Classroom Control* on the Following Scales:

```
              no control  ☹  ♦  ☺  ♦  ☺   too much control
      poor level of control  ☹  ♦  ☺  ♦  ☺   good level of control
      difficult for students-              easy for students-
       to express themselves  ☹  ♦  ☺  ♦  ☺   to express themselves
            not effective  ☹  ♦  ☺  ♦  ☺   very effective
```

How can the GTA's classroom control be improved?

Example In-Class Evaluation Form

Please Rate the GTA's **Organization** on the Following Scales:

no organization	☹	◆	☺	◆	☺ too much organization
poor organization	☹	◆	☺	◆	☺ good organization
difficult for students to follow	☹	◆	☺	◆	☺ easy for students to follow
not effective	☹	◆	☺	◆	☺ very effective

How can the GTA's Organization be improved?

Please Comment on the Following:

GTA interaction with individual students

Conflict Resolution (comment if possible)

Please use this space to identify other areas that need improvement or modification. If possible, list specific situations of GTA-student interaction that supports your comments.

Thank you for your time and effort.

Appendix C: Example Evaluation Schedule

Here we present an example schedule designed for the Fall semester at Virginia Tech:

Aug. 16-18   Graduate School Training
Aug. 24   Classes Begin

Select a Mentor
Aug. 30   Approach Department Administration to get names of possible mentors
Sept. 1-8   Approach possible mentors and ask *nicely*

Evaluation Session One
Sept. 13-17   Meet with Mentor to outline evaluation of class or materials
Sept. 20-24   Have Mentor evaluate your class (i.e., *sit-in*) or review some materials
Sept. 27-30   Meet with Mentor to discuss evaluation of class or materials

Evaluation Session Two
Oct. 25-29   Meet with Mentor to outline evaluation of class or materials
Nov. 1-5   Have Mentor evaluate your class (i.e., *sit-in*) or review some materials
Nov. 8-12   Meet with Mentor to discuss evaluation of class or materials

Nov. 15-19   Thank your mentor (e.g., Dinner, Happy-Hour, Movie, etc.)

Nov. 19   *Contact Kevin Mayo and let him know how your mentoring program worked. (mayo@cs.vt.edu, or at Computer Science Department)*

Repeat this for Spring Semester

Select a New Mentor
Jan.   Approach Department Administration to get names of possible mentors
Jan.   Approach possible mentors and ask *nicely*

... etc. ...

Remember, your mentor is helping you for the sole reason to improve your teaching. Mentors are acting out of the kindness of their hearts, so treat them nicely and respect their time and efforts.

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