

Patterns, Promise, and Pitfalls of a Graduate Teaching Certificate Program¹

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Introduction

Preparing graduate students for academic careers disproportionately involves training in research (Bok, 2017; Trautmann, 2008). Coursework, research papers, and ultimately a dissertation are requirements for a doctoral degree, and all test the ability of students to understand and conduct research. In many of the sciences, research in the field or a laboratory is *de rigueur* as well. Much less effort is devoted to pedagogical training for graduate students, and rarely, if ever, is teaching experience or instruction-related coursework a prerequisite for a degree. Recent commentaries in *The Chronicle of Higher Education* reinforce this observation (Alsop, 2018; Patel, 2017; Supiano, 2019), always with expressions of surprise and dismay. Even if research skills are considered vastly more important for hiring, tenure, and promotion at research-intensive universities, the number of such universities and associated tenure-track research positions are far fewer than those that are teaching-focused. As Manzo and Mitchell (2018) point out, only 4% of colleges and universities in the U.S. are classified as R1 and therefore explicitly value research over teaching. Furthermore, if R2 and R3 institutions are included in this calculation, only 11% can be seen as encouraging research as much or more as they do teaching. Nevertheless, faculty members continue to report that their graduate training includes little emphasis on teaching, even as this has been changing in recent years.

Graduate teaching assistants primarily “learn by doing,” with respect to pedagogy, stumbling through their mistakes with variable guidance from faculty and often modelling themselves on faculty members that they admired as undergraduate or graduate students (Trautmann, 2008). Some graduate students who go on to academic careers never serve as a teaching assistant during their studies. Rather, they become research assistants from the outset of graduate studies and continue in that role until they receive their degrees; this research orientation to the exclusion of teaching might extend to post-doctoral employment prior to assuming faculty positions. One explanation for this trend is likely the common belief that investment in teaching takes valuable time away from research (Shortlidge & Eddy, 2018; Skelton, 2013).

The emphasis on research for graduate training does not mean that instructional training is wholly absent for all graduate students. Some universities have extensive training regimens (e.g., Kenny, Watson, & Watton, 2014; Ridgway, Ligocki, Horn, Szezyller, & Breitenberger, 2017; Reeves, Hake, Chen, Frederick, Rudenga, Ludlow, & O’Connor, 2017), although these are the exception rather than the rule. For example, the University of Illinois has mandatory pre-semester training for all new teaching assistants.² This involves multi-day general and discipline specific workshops, as well as a “micro-teaching” session in which prospective teaching assistants are filmed and receive feedback from an instruction specialist. Such training is supplemented by voluntary workshops and other events that are specifically designed for or open to teaching assistants during their time at the university. At the other extreme are universities that offer no initial or subsequent training, other than what might or might not be given on an *ad hoc* basis by faculty supervisors under whom teaching assistants serve.

Supplementing best practices and filling the void when little guidance exists are graduate teaching certificate programs, which have become increasingly common over the past ten years. These may be discipline-specific (e.g., Beers, Hill, & Thompson, 2012) or general, such as the Graduate Certificate in Teaching and Learning that was

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² See <https://citl.illinois.edu/citl-101/teaching-learning/conferences-workshops>

launched at Rice University in 2014.³ Such certificates attest to graduate teaching assistants having completed a set of requirements, typically acquiring some minimum instructional experience, mentoring, and participation in instructional-related workshops and activities. This paper examines the experiences of one such program at the University of Texas-Dallas (UTD). We begin by describing the UTD context, including the number and types of assignments for its graduate teaching assistants. We then move to a summary of the four teaching certificate programs there, two each for graduate teaching assistants and post-doctoral associates respectively. With these in mind, we provide a series of empirical patterns on the participation in and completion of the certifications. Based on these patterns, we offer a series of lessons or issues encountered, and conclude with a brief discussion of changes to the program and the context in which it operates.

The UTD Context

Programs to enhance teaching performance by graduate students depend on the context of a given university. UTD has approximately 700 graduate students who work as teaching assistants (GTAs) during any given regular academic year (fall and spring semesters). These are primarily doctoral students whose appointment as teaching assistants begin immediately with their graduate enrollment and could extend until the time of graduation, although more commonly there is some rotation in and out of teaching assistant positions along with research assistant ones. GTAs assume a variety of roles, depending on their seniority and the particular instructional needs of their departments or programs. At many universities, GTAs are independent instructors (i.e., instructors of record) or they may lead discussion or recitation sections of a large lecture course. These roles exist at UTD, primarily in certain schools, but those models are less common overall than at other institutions. Rather, UTD teaching assistants are more often graders, laboratory assistants, tutors, and the like for courses taught by a faculty member with a terminal degree.

The certificate programs described below are also available to those post-doctoral associates

who have instructional roles at UTD, most commonly as independent instructors or laboratory supervisors; the decentralized features of these kinds of university employment make it difficult to estimate how many post-doctoral positions exist on campus as well as which ones have instructional responsibilities.⁴

All graduate teaching assistants participate in several orientation processes, but these are inadequate preparation for assuming instructional roles. A day-long and pre-semester orientation occurs twice a year for new GTAs.⁵ Much of this, however, deals with employment issues (payroll, health insurance) or research. To the extent that instructional issues are addressed, they deal with what might be the “dark side of teaching,” avoiding or dealing with negative things that assistants might encounter and are contrary to University policy or state/federal law: sexual harassment, cheating, improper relationships, and student privacy, among others. These are informational sessions that are designed to meet state mandates. They certainly are not inspirational, and might even overcome the two sessions on what good teaching is and valid assessment respectively that are designed to be inspirational, but collectively last less than 45 minutes. In no case does the initial orientation involve training in good pedagogical practice. There is no campus orientation for post-doctoral associates.

UTD has eight schools (akin to colleges in other universities), and seven of those employ teaching assistants. The modal approach for schools is to offer no additional training for assistants. A few schools have half-day or less sessions addressing a few issues – leading discussions or grading – but these have been offered inconsistently over time. Only one school, which uses GTAs as independent instructors more frequently than others, has an extensive program that includes micro-teaching and feedback, as well as workshops during the academic year.

Below the school-level, any training that GTAs receive tends to be *ad hoc* and specific to their assignments for that semester; individual faculty

³ <http://cte.rice.edu/grads/#GCTL>

⁴ Post-doctoral scholars might also supervise undergraduate students in a lab, a form of teaching outside of the classroom.

⁵ The format and content of these sessions are under revision; we describe past practices here.

instructors or course supervisors are responsible for this. It is unclear whether such guidance reflects best practices or is empirically grounded in the education literature. There is no record of how much or how little training occurs at this level. One exception is in the Mathematical Sciences. GTAs in this program engage in two days of training with experienced graduate student mentors in the active learning strategies they will later use with undergraduates. GTAs learn how to implement active learning in calculus problem sessions, and practice delivering these sessions, including conducting mock sessions with verbal and written feedback provided by mentors and peers.

Overall, UTD has a large number of rotating teaching assistants that play a variety of teaching roles. Nevertheless, there are no institutional programs (save the certificate programs described below) that are dedicated to improving GTA performance.

The UTD Certificate Programs

UTD offers two teaching certificate programs for graduate students who have teaching responsibilities: Graduate Teaching Certificate (GTC) and Advanced Graduate Teaching Certificate (AGTC). It offers the same two certificates with identical requirements for post-doctoral associates who have instructional responsibilities. The certificate programs began in January, 2016 with the founding of the Center for Teaching and Learning (CTL) at UTD.

For the GTC, there are five objectives:

- Improve the instructional performance of GTAs while at UTD.
- Encourage the use of evidence-based best practices in instruction.
- Improve instructional performance for those pursuing a career in higher education.
- Encourage reflection and innovation in pedagogy for those new to teaching.
- Enhance employment prospects by developing professional skills and strategies related to teaching.

For the AGTC, the same objectives apply, but there are two in addition:

- Provide a structured process for the exploration of pedagogy from a discipline-based perspective.
- Assist GTAs in developing a deeper understanding of the duties required in an academic position.

Participants for the programs are recruited in a variety of ways, including at a presentation during orientation, school-level and faculty encouragement, and word of mouth, among others. We do not have survey data on the motivations of participants, but recruitment efforts emphasize three things that mirror the objectives noted above. The lead rationale for the certificate is an appeal to altruism, namely that GTAs can change the lives of their undergraduate students. Assistants are encouraged to consider the teachers in their own lives who had a profound influence on their studies and career. A second appeal focuses more on utilitarian elements; good teaching is often more efficient than lower quality instruction. Whether it is the use of rubrics or other techniques, effective instruction can be time-saving relative to over-preparation and failed communication; this resonates with graduate students who have competing demands on their schedules. Finally, potential participants are reminded that teaching certificates enhance a vita or resume. For those seeking academic careers, the increasingly difficult tenure track market and the increase in nontenure-track track positions make it incumbent on candidates to have distinctive training and experience in order to stand out (for the perceived value of such credentials, see Kanuka and Smith, 2019). Those pursuing non-academic employment are reminded of the transferrable skills sets (e.g., ability to make a presentation, provide effective feedback) that can be acquired as part of the certificate programs.

Requirements

The requirements for the GTC are identical for GTAs and post-docs. It was expected that far more individuals would attempt the GTC than the AGTC below, and an emphasis was put on assuring that the requirements would not be so onerous so as to discourage participation or inhibit completion. Such concerns, however, were balanced against the need for meaningful training that would improve instruction immediately and in the future.

The first requirement is that participants “pass” (achieving a score of 80% or greater) four online courses on teaching. These cover the topics that reflect a range of different roles for GTAs and post-docs: (1) Avoiding Plagiarism, (2) Lecturing 1, (3) Making the Most of Discussion, and (4) Marking and Giving Feedback. These are courses developed by Epigeum, an education company owned by Oxford University Press.⁶ The courses are short (expected to be completed in 1-2 hours each), online courses that can be completed in a self-paced manner. A test at the end measures comprehension. The courses are hosted through UTD’s LMS or learning management system (Blackboard), which is the platform for all other courses in the university and easily accessible. Using these propriety courses is superior in many ways to self-providing such instruction; advantages include saved staff time, expertise in course design, and flexible delivery.

The second requirement is that participants attend a minimum of three teaching development workshops or events. CTL offers some 20 different workshops at the campus level during the calendar year, and there are numerous other workshops at the school/college level that qualify. Participants are required to submit a one page reflective essay through the LMS on the experience for each of the workshops or events. This is superior administratively to sign-in sheets or other methods of recording attendance, and it ensures that participants must think about the topic that was the subject of the workshop.

Third is that participants complete a full semester of teaching at UTD. Teaching is broadly defined as having regularly scheduled instructional duties with students in a classroom, studio, laboratory, or online, in which the GTA or post-doc has some responsibility for learning activities over an extended period of time. Thus, participants can serve as a grader, lab supervisor, tutor, discussion leader, independent instructor, or another pedagogical role appropriate to the course or school. The variety of instructional roles provides flexibility to mirror the different duties that GTAs and post-docs perform at UTD. Finally, participants must have a faculty mentor or designated UTD personnel observe at least one session of that participant’s teaching and receive

feedback from that individual. The participant is then required to complete a one page reflective essay on the experience.

A prerequisite for the Advanced GTC is that participants complete the GTC, as the former builds on the foundation of that original certificate. Nevertheless, there are some similar requirements for the AGTC. Participants must attend and complete reflective essays with respect to three more workshop events. Furthermore, additional teaching experience, here two more semesters, are also required. Participants must also complete three more online courses from Epigeum, ones indicative of advanced training: (1) Lecturing 2, (2) Understanding the Principles of Course Design, and (3) Developing Your Teaching.

Three additional requirements involve qualitatively different training in pedagogy, and are preparation for independent instruction in the short and longer term. One is the submission of a teaching philosophy statement, based on teaching experiences in the discipline and connected to what was learned from participating in the certificate programs. Another involves mentoring, but with a greater emphasis on teaching development than was the case with the regular GTC. Participants must submit an example of original work (syllabus, course development, lesson plan, class or lab activity, major assignment, project, or examination) and have it assessed by a faculty mentor or designated UTD personnel. The participant and the mentor meet to discuss the learning goals envisioned by that work with that person as well as what revisions might be made in the light of that assessment.

The final requirement of the AGTC is perhaps the most challenging and asks participants to engage with the scholarship of teaching and learning. Participants must do one of the following: (1) write a review of pedagogical literature in the discipline of the participant that is based on 5 to 6 articles; (2) complete a course on college teaching offered at UTD; (3) participate in a regularly scheduled reading group or seminar series on teaching, or (4) present an original research paper related to teaching on campus or at a professional meeting. There is flexibility in this requirement, but in all cases participants must devote significant time and thought into what we know from extant research about teaching.

⁶ See <https://www.epigeum.com/home-us/>

Costs

The major financial expense associated with the certificate programs is a subscription to the Epigeum online courses on teaching. Bundled with some other courses that the university uses, the subscription costs approximately \$16,000 per year under a discounted three year contract. The subscription provides full access for all users on campus, and is paid for by the Provost's Office. Lunches (<\$10 per person) are provided for all attendees to CTL workshops. Most workshops are open to all faculty, staff, and graduate students. If one considers the minimum number of workshops attended for the certificate, then this is an expense of less than \$30 per GTC participant, and the same for AGTC participants.

Running the certificate programs requires event planning and implementation as well as certification of submitted essays. These tasks are accomplished with existing CTL staff, specifically the Director, Associate Director, and Administrative Assistant. Their salaries are fixed costs, and the certificate programs are considered part of their duties. Accordingly, it is difficult, if not impossible to estimate the time and effort that goes into the certificate programs vis-à-vis their other duties. The Associate Director oversees the LMS and verifies participants' submissions and completion of program requirements, which typically requires about one hour per week. In addition, workshops and other events also serve other audiences in the university community, so parceling out any costs for certificate participants is not possible.

Although we are asked frequently, participants are not charged nor compensated for participation. Neither are mentors or workshop presenters compensated for services; an exception is external speakers who present major workshops four times per year for the campus community as a whole; GTC and AGTC participants are invited to these events and they can count toward the workshop requirements for the certificates. Access to the LMS that serves as the foundation for the online courses and the submission of essays and certifications is provided by UTD without cost; technical support is also provided without charge.

Patterns of Participation and Completion

Participants may request to be enrolled at any point as they make progress toward their degrees, and remain eligible for the program until they leave the university. UTD removes individuals from all LMS systems once they are no longer students. Accordingly, our records are lacking for those who signed up, but did not earn the certificates. We have records for this currently in the system as well as those who completed one or more certificates.

(Table 1 about here)

Table 1 provides the number of GTA participants currently enrolled in the GTC and AGTC programs, stratified by the last time they accessed the certificate website and indicating how many attempted to complete at least one requirement s since joining the program. At the end of the spring 2019 semester, 985 current graduate students are enrolled in the certificate program for GTAs. It is not possible to identify which or how many of these were enrolled on their own request and which were at the request of their programs, but both circumstances are likely. There are 186 (just fewer than 19%) participants who are enrolled, but have never logged in. Of the remaining, 799 have accessed the organization since January 2016, and 397 have accessed the organization since June 1, 2018. Nevertheless, merely logging into the program website does not necessarily designate any engagement in pedagogical training. More indicative are attempts (most resulting in some success) to complete at least one requirement by taking one or more of the online courses or turning in a workshop report essay. Unfortunately, less than half (46%) of the 799 participants attempted at least one GTC requirement. Put another way against the largest baseline, only 37.5% of those who signed up for the program (985) show a level of activity that involves engagement with instructional training.

The post-doctoral versions of the certificates were begun nine months after the GTA versions and thus are in a more nascent stage and serve a smaller population. As of May 2019, 58 post-docs are enrolled in the basic certificate program and 42 (greater than 72%) have accessed the organization since fall 2016; 25 have attempted at least one requirement (almost 60% and more than 43% of the baselines respectively). These rates are higher than those for GTAs.

(Table 2 about here)

Table 2 summarizes the number of completed certificates in the three cycles of the program. In a little over 3 years, the program has awarded 133 teaching certificates, the overwhelming majority of them being the basic variety as opposed to the advanced ones. Early momentum and a longer reporting period resulted in just less than 44% of those in the initial time frame of the program. Although gross participation has increased over time, the number of completions has not kept pace commensurately. The reasons for this are not clear as recruitment strategies, workshop availability, and other elements of the program has not changed, and in several cases actually increased over time. Advanced GTC numbers for GTAs might grow over time as more students earn the required GTC first. Post-doc awards were expected to be few, given the small number of individuals eligible based on instructional assignments. Advanced GTCs for post-docs might remain minimal as a minimum of three semesters teaching is required, and many post-docs do not have such opportunities or have positions that do not extend beyond a single year (two semesters).

Issues and Lessons

With three plus years in existence, there are a number of issues and lessons that can be drawn.

Completion Rates

Although there is an unlimited time to complete the certificates (at least until graduation), and thus some participants will still finish, there remains a significant gap between the number who are enrolled, the number who engage with the programs, and the number who ultimately finish the certificates. On the one hand, this might not be surprising. Human behavior in a variety of contexts have led to major disconnects between participation and program completion rates. The teaching certificate programs are no different. Participants agree to join the program most often at the beginning of their graduate careers when enthusiasm runs high and students do not have complete information about the other competing demands on their time, such as research, classes, and their actual teaching assignments.

When motivation persists beyond the initial sign-up, completion is much more likely and occurs in a relatively narrow time-frame. Twenty students

currently enrolled in the LMS have completed *both* the GTC and AGTC. For 16 of these, we have data on the semester and year in which they finished each certificate. All four of those for whom we do not have this information completed both certificates very early in the history of the program, using prior instructional experience to count for some of the requirements. For the remaining 16, 4 completed both certificates in the same semester, and 5 participants completed the AGTC in the semester following their completion of the GTC. As with the “early adopters,” these relied on prior instructional experience (as GTAs or in some cases as instructors in secondary education) to expedite completion of the certificates. The AGTC requires two additional semesters of teaching experience, but those semesters may be completed before the participant is enrolled in the program, (i.e., they do not have to be completed for the AGTC after the GTC is complete). Of the remaining group, three completed the AGTC 2 semesters later, two completed it 3 semesters later, one took 5 additional semesters, and one took 6. Generally, those who have completed the AGTCs demonstrated motivation to complete requirements in an expeditious fashion and were aided by previous teaching experience. Most new GTAs and post-docs, however, lack such initiative and teaching backgrounds.

More significant in accounting for the falloff in completions are the incentive structures that give relatively low priority to completing the teaching certificate vis-à-vis other options. Success in degree coursework, doctoral exams, and the dissertation is perhaps the top priority of students as this is the *raison d’être* for being in graduate school; students will give their primary attention to these concerns. These requirements have both immediate and long-term incentives. Many degree requirements have fixed deadlines (especially individual courses) that cannot be put off. Even those elements that might be delayed can carry with them financial penalties in the form of lost financial aid and/or additional tuition. Long-term career goals cannot be achieved without completing the degree, so the long-run incentives are compatible with the short-term ones. Research – one’s own and those of the major advisor – are also high priorities for training and future employment, whether in academia or industry; this is the case even as evidence exists that there is no tradeoff in time

devoted to teacher training with respect to research (Boice, 1992). Assignments as teaching assistants also produce myopic orientations. GTAs have fixed times for monitoring labs, grading, and other duties. The bottom line is that other activities have immediate demands on graduate student time, and in the case of research and coursework high impact on future careers.

The graduate teaching certificates are not designed to be time consuming, but graduate student perceptions might not reflect this. Given perceived competing demands, putting off or abandoning the program is an easy path, and one that is certainly easier than for other commitments. As signing up is simple and the program is free, there are no “sunk costs.” The time horizon for completion – by graduation – is distant and easily forgotten; the lack of a perceived immediate benefit discourages professional development opportunities (Onsman, 2011). In addition, the other incentives for completion are limited and uncertain. Certainly, altruism drives many participants to completion, much as that motivation influences faculty members to be better teachers. Nevertheless, most assistants will not be motivated as such, and completion of the AGTC requires a much higher level of motivation than the basic certificate. Extrinsic rewards for being a good teacher and completing the certificates are limited for GTAs. They are more likely to win teaching awards with the certificates on their vitae and presumably from the better teaching that the training produced. Nevertheless, the probability is low enough – there is only one campus award for teaching assistants – to make the likely payoff extremely low.⁷ Some GTA awards exist at the school level, but often without financial prizes. In terms of career, a graduate teaching certificate is more valuable for an academic career than one outside that realm, and thus those with employment tracks geared toward the latter have fewer reasons to pursue the certificates. The perceived value even for those in academic tracks might be low if the career aspiration is for a position at a R1 institution, even as such aspirations might be unrealistic given the small and shrinking number of such jobs available.

⁷ Beyond the prestige, the campus award carries with it with a \$1500 (taxable) prize.

Timing Issues

In an ideal world, teaching assistants would complete extensive training *before* beginning their instructional duties. In reality, this is impossible with many of the new students arriving on campus less than a week before classes begin and with many other things (e.g., acclimation, housing, registration) with which to deal. Even an extensive orientation in the week before classes would have limitations and in any case would leave little time for reflection about pedagogy.

At best, we would hope that graduate students would complete the basic certificate early in their time in graduate school, which allow the benefits of any improved performance to be manifest for the university that provided the training. Our present data collection does not permit us to assess the timing elements of those who complete the certificate. Thus, we are uncertain exactly when participants finish and how that maps with their graduation dates. Nevertheless, for a significant number of GTAs, we have noticed that materials and certification for multiple requirements tend to be submitted together, often at the end of the semester. In some instances, reflective essays concern events that took place more than a year previously. Although these practices are acceptable, they do not indicate the kind of contemplative process and gradual progression of teaching improvement that the certificate programs are designed to foster. We especially worry that some certificates are completed just before a student graduates, largely defeating some of the purposes of improving instruction at UTD.

Quality Control and Outcomes

How can certificate programs assure that participants are learning about teaching and have improved performance as a result? Short-term learning with respect to the online courses is measured by the ability of participants to pass the test at the end of the course; participants must achieve a score of 80% or greater to pass the course. Long-term retention and resulting changes of teaching behavior is uncertain, except for anecdotal reports. Learning from workshops is assessed by the reflective essays; CTL personnel make an individual judgment of whether the essay indicates that the participant understand one or more of the main points

of the workshop and was able to offer some insights about them and how they might be incorporated in one's own teaching. In practice, the bar of acceptability has been set relatively low. Since the program was launched, fewer than five essays have been rejected with a request to revise and resubmit. A system with strict standards would require much more extensive staff time for "grading" and feedback and it is not clear whether that would produce a better payoff in terms of improved training and teaching. The majority of essays are very good, and a considerable number are excellent in their thoughtfulness about how the participant's thinking about and understanding of teaching was affected by attending the workshop.

LMS Advantages and Disadvantages

Using the university's approved Learning Management System (LMS) to track participants' progress toward the teaching certificates has a number of distinct advantages. The most obvious advantage is that enrollees are already familiar with the system. They easily can see how and where to submit documentation to support completion of requirements, and can monitor their own progress as it is verified by CTL personnel. The system also provides an easy means of communication with all participants enrolled in the program, as LMS tools allow for direct email and announcements. These are used to advertise CTL workshops and events that participants may use to fulfill certificate requirements. It also is possible to share relevant materials such as handouts or guidelines. The certificate programs are not classified as courses in the LMS, but rather as "organizations." Organizations are not connected to a specific semester as courses are, making it easy to carry participants over from one semester to the next; this works well for participants who might cycle out of being a GTA for a semester or more, but remain eligible for the program. It also is quite easy to enroll participants in the organizations, as their campus ID is the only information needed. If multiple ID numbers are available at once, large batches of individuals can be added with little effort.

The LMS has some disadvantages as well. Because the GTC/PDTC program is listed as an organization rather than a class, this may cause participants to overlook it. On the LMS login page, organizations are listed separately from courses, and

there are numerous other organizations in the list that require little or no attention from users. A key disadvantage concerns tracking students over time. The system does not automatically indicate the timing of when each participant was added to the organization, and they are removed without warning or record when the campus ID expires upon graduation or leaving the university. Thus, we have no clear data documenting how long participants take to complete the certificates or precisely how many leave the university without finishing. It would be possible to add a notation for each participant indicating the date of being added to the organization, but that would be labor-intensive as it would have to be done on a case by case basis, sometimes for hundreds of new participants.

One final complication in monitoring progress is that some GTAs are added to the LMS by their schools when specific programs require that all assistants complete some or all of the GTC requirements. GTAs might not be clearly informed of these requirements, and may not even realize they have been added to the program. Schools' monitoring of completion is sporadic at best. Thus, most participants are invited to apply to the program and are added by CTL on their request, but some number are added by their schools and do not always know they have been added or are possibly resistant to being added. It is not possible to distinguish which ones have been added by their own or by someone else's request.

Overall, the ease of using the LMS to deliver and monitor the GTC/PDTC programs outweighs the disadvantages. CTL personnel can verify completion of requirements quickly and easily, and participants can complete the program at their own pace. The problems with having no deadlines other than graduation and being to some extent "out of sight, out of mind" are partially mitigated by the ease of sending invitations and reminders. One solution to the difficulties of tracking timing of completion is to use a code to indicate semester and year when noting that participants have completed all requirements for the regular or advanced certificates (e.g., "19F"). Even though this does not solve the problem of members automatically being removed without warning or record, it does facilitate tracking the number still in the system who finish in each semester.

Future Changes and Implications

As we move ahead, there are several changes that are likely to have an impact on some of our certificate programs, especially in terms of participation; some of these are within the control of CTL, whereas others are not. First, CTL instituted for the first time in spring 2019 a 10 week, non-credit seminar for advanced teaching assistants (“Graduate Reflective Teaching Seminar” or GRTS); this is a variation of the seminars that CTL offers for junior and senior faculty respectively. The GRTS has 20 slots for advanced graduate students and covers a range of pedagogical topics (e.g., syllabus construction, leading discussions), grounded in empirical research. The yearly offering of this seminar should assist GTAs in completing the most difficult requirement of the AGTC, that dealing with the scholarship of teaching and learning.

A second change will result from initiatives at the school level. Some of the eight UTD schools nominally require the Epigeum online courses of all their new teaching assistants, but this rule has not been enforced. CTL will work to make this a universal requirement across schools as well as to facilitate meaningful orientations at the school level for all new GTAs. If successful with these initiatives, all new teaching assistants would begin their duties with a significant leg up by having completed one of the GTC requirements.

Most significant are the changes proposed by the Dean of Graduate Studies. He has proposed replacing a number of part-time (“adjunct”) teaching positions with senior graduate students who would assume independent instructor positions. As part of this switch, there would be *minimum* requirements for graduate students to be eligible for such appointments. Besides earning a certain number of graduate course credits, GTAs would also have to finish the GTC before appointment as independent instructors; this is designed to assure some quality control. The net effect is likely to be a significant increase in the number of GTAs completing the GTC and might provide a larger pipeline for participants in the AGTC program, of which a GTC is a prerequisite. Although projections of participation are uncertain, it is expected that CTL could handle significant increases in GTC participation from both a financial and administrative vantage point.

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Table 1: Summary of Current Participation of GTAs in GTC and AGTCs (as of May 2019)

Period Last Accessed	Number of GTAs whose most recent log in was during this period	Percentage who attempted at least one GTC requirement
Never Accessed	186	N/A
Jan-Apr 2016	44	34%
May-Aug 2016	37	49%
Sep-Dec 2016	48	52%
Jan-Apr 2017	74	41%
May-Aug 2017	43	37%
Sep-Dec 2017	57	32%
Jan-Apr 2018	91	37%
May-Aug 2018	48	54%
Sep-Dec 2018	96	49%
Jan-Apr 2019	201	53%
May 2019	60	57%
TOTAL	985	370/799=46%

Table 2: Summary of Certificate Completion, GTAs and Post-Docs: GTC and AGTC (as of May 2019)

Period Completed	GTC–GTAs	AGTC–GTAs	GTC-Post Docs	AGTC–Post Docs
January 2016- April 2017	47	4	6	1
May 2017-April 2018	20	5	7	0
May 2018-April 2019	30	10	3	0
Total	97	19	16	1