What GTAs Need: Implications from a Survey of the Goals, Concerns, and Questions of Graduate Teaching Assistants

Donald A. Saucier, Noah D. Renken, Ashley A. Schiffer, & Tucker L. Jones

We surveyed 477 new graduate teaching assistants (GTAs) during a GTA orientation to identify their goals, concerns, and questions about their new responsibilities. The vast majority reported looking forward to becoming a GTA but expressed nervousness about their new role. Most also reported being motivated to embody attributes within the conceptualization of "PEACE" (i.e., Preparation, Expertise, Authenticity, Caring, Engagement; Saucier et al., 2022a) as a foundation for teaching excellence. Our results provide a framework for designing professional development opportunities for new GTAs, and we discuss how these have been implemented at our university to promote teaching and learning excellence.

What GTAs Need: Implications from a Survey of the Goals, Concerns, and Questions of Graduate Teaching Assistants

New graduate students face several responsibilities when they begin graduate school. In addition to taking their own classes, they must often learn to balance research with teaching and with mentoring duties. Many also serve as graduate teaching assistants (GTAs). Employing GTAs at colleges and universities offers multiple benefits, including providing

professional experience for graduate students aspiring to faculty positions, financial support for graduate students, and a reduction in faculty teaching loads (e.g., Hogan, 2007; Park, 2004). However, new GTAs frequently report mixed or negative emotions about these roles, such as teaching anxiety (e.g., Cho et al., 2011; Pelton, 2014), often due to a lack of prior teaching experience or preparation (e.g., Tulane & Beckert, 2011). The purpose of this article is to examine the goals, concerns, and questions that new GTAs have as they begin their teaching responsibilities. We believe that understanding their experiences and anxieties can inspire professional development initiatives to help them succeed as GTAs. Additionally, we discuss how this information has informed our university's professional development efforts.

Teaching is arguably the most important responsibility of colleges and universities, and GTAs play a critical role in supporting those goals. While GTA responsibilities vary across disciplines, colleges, and departments, common tasks include recording attendance, grading assignments, providing feedback to students, holding office hours, delivering lectures, and supporting the instructor of record in other capacities (e.g., Tulane & Beckert, 2011; Moon et al., 2013; Weidert et al., 2012). In many cases, GTAs also teach courses or laboratory sections as the instructor of record (e.g., Gardner & Jones, 2011; Moon et al., 2013). However, it is not uncommon for GTAs to assume these teaching responsibilities with minimal professional preparation (e.g., Jones, 2008). Historically, and even today, higher education institutions have often assumed that individuals with advanced or terminal degrees in a discipline are automatically prepared to teach its content (e.g., Stevens, 1988). Yet, little evidence suggests that an instructor's degree level correlates with teaching quality or students' attainment of learning outcomes (e.g., Goldhaber, 2002).

Fortunately, teaching at the college and university level is a skill that can be developed and improved through personal effort and institutional support (e.g., O'Loughlin et al., 2017; Schmid et al., 2021). Many colleges and universities offer professional development opportunities for instructors and GTAs, including workshops, events, and conferences aimed at promoting teaching excellence (e.g., Friedman et al., 2019; Saucier et al., 2021). Specifically, GTA training varies widely across institutions, ranging from brief workshops to more comprehensive programs, such as semester-long seminars (e.g., Brannon & Zappe, 2009; Pelton, 2014; Young & Bippus,

2008). Common topics in these trainings include university policies and procedures, pedagogical strategies, ethical issues in teaching, and teacher self-efficacy (e.g., Boman, 2013; Branstetter & Handelsman, 2000). Research generally indicates that GTA training programs enhance GTAs' teaching practices, reduce teaching-related anxiety, and improve their overall experience (e.g., Boman, 2013; Eller, 2017; Gallardo-Williams, 2017; Pelton, 2014).

Our Model for GTA Orientation

Our institution offers resources for new instructors and GTAs through our Teaching and Learning Center (TLC). As members of our university's TLC leadership, we believe that excellence in teaching is something that can be promoted through intentional professional development efforts. Our TLC also hosts an orientation for new GTAs, consisting of a half-day professional development program prior to the start of the Fall and Spring semesters, with the intention to maximize the likelihood of graduate students' success in their new roles. There is time for new GTAs to network and acquaint, a welcome by one of our administrators, and a keynote address about the role and responsibilities of a GTA as well as an overview of excellent teaching practices. This includes discussion of teaching practices to inspire instructor and student engagement (e.g., Frenzel et al., 2009; Houser & Waldbuesser, 2017; Saucier et al., 2022b), teach inclusively (e.g., Sathy & Hogan, 2022; Saucier et al., 2023), infuse empathy into course design and teaching practices (Saucier et al., 2022a), and use high impact practices in teaching such as methods of active learning (e.g., Chi & Wylie, 2014; Freeman et al., 2014; Prince, 2004). Following the keynote address, these is a panel discussion from current GTAs from various departments at our university; presentations about supporting student well-being and success by the directors of offices of student life and institutional equity; and an information session about our TLC's weekly professional development series and certificate.

To generally identify the needs of incoming GTAs, our orientation attendees complete a survey prior to the start of the orientation. These survey results, compiled over several semesters, are presented below to illuminate new GTAs' concerns, teaching goals, and questions about their

responsibilities. We believe these results will be useful in informing professional development efforts for new GTAs and we discuss how we have adapted our professional development efforts accordingly at our university.

Method

Participants

We collected data from attendees of our New GTA Orientation during each orientation hosted between Fall 2019 and Fall 2023 (N = 477). In general, there is higher enrollment for new graduate students in the Fall semesters compared to Spring semesters, which tends to be reflected in our New GTA Orientation attendance as well. Although we do not formally track attendance for these orientations, we approximate it based on the number of attendees who took the survey during their respective orientation: Fall 2019 n = 120, Spring 2020 n = 25, Fall 2020 n = 59, Spring 2021 n = 5, Fall 2021 n = 69, Spring 2022 n = 8, Fall 2022 n = 102, Spring 2023 n = 6, Fall 2023 n = 83. To protect their identities, we did not collect any identifying or demographic information from attendees, but they broadly represented the colleges and departments that comprise our large Midwestern state research university.

Survey

Our survey consisted of six free-response items to assess the new GTAs' apprehensions, concerns, and teaching goals for their upcoming teaching experiences. The first item assessed the new GTAs' cognitive and emotional states about being GTAs by asking, "Are you looking forward to being a GTA? Why or why not?" To assess the characteristics that new GTAs associate with excellent teachers, the second item asked, "What are three words you would use to describe the best teacher you ever had?" To assess the goals that new GTAs had for their own teaching persona, the third item similarly asked, "What are three words you want your students to use to describe you as a teacher/GTA?" The fourth item asked, "What is something that scares you about teaching/being a GTA?" to assess the fears and concerns that new GTAs had about teaching and/or being a GTA. The fifth

item, "What is one thing you do/will do to prepare yourself to engage your students?" aimed to inspire new GTAs to consider how they will intentionally pursue excellence in their teaching. The final item, "What is one question you have about teaching/being a GTA?" sought to understand the remaining concerns and confusions that new GTAs had about their new GTA roles.

Procedure

We provided attendees at our New GTA Orientation the opportunity to complete our survey at the beginning of each orientation over the last several Fall and Spring semesters. From Fall 2019 to Spring 2020, the survey was distributed as a hard-copy handout. From Fall 2020 to Fall 2023, the survey was offered electronically via Qualtrics. The survey took attendees only a few minutes to complete. As noted above, no identifying or demographic data were collected. It is worth noting that our New GTA Orientation is conducted during the week prior to the start of the semester, at which point many, but not all, new GTAs will have had their initial meetings with the faculty supervising their GTA responsibilities.

Content Analysis

We conducted a content analysis of each of the six free-response items. For the two items that asked new GTAs to describe the best teacher they ever had and how they would want their students to describe them as a teacher/GTA, we coded each word into one of six categories derived from the conceptualization of "PEACE" as a foundation for teaching excellence (Saucier et al., 2022a; 2023). In this conceptualization, PEACE is an acronym representing five attributes that instructors should strive to bring to their students and classes to promote excellence in teaching and learning (Saucier, 2019; Saucier, 2020). The "P" stands for "Preparation" and refers to "having a plan for what (and how) you will teach." The first "E" stands for "Expertise" and refers to "having content knowledge and understanding how you will convey this knowledge to students in an accessible way." The "A" stands for "Authenticity" and refers to "demonstrating a genuine representation of yourself and your personality to your students." The "C" stands for "Caring" and refers to "demonstrating your commitment to your

students' academic and personal success." The final "E" stands for "Engagement" and refers to "having complete investment (at cognitive, emotional, and behavioral levels) in your course-related duties" (Saucier et al., 2022a, p. 102).

Accordingly, each word for these items was coded by two independent coders into the categories of Preparation, Expertise, Authenticity, Caring, Engagement, or Other (kappas > .89). For the other survey items, a member of our research team read each free response and identified unique themes that emerged, creating categories for coding. Two independent coders then assigned each unique theme within each free response to these categories. We assessed the intercoder reliability of these category assignments. Once the reliability of coding for each item's free responses was established (kappas > .89), we resolved any remaining disagreements via discussion.

Results

Are you looking forward to being a GTA? Why or why not?

The overwhelming majority of our respondents reported looking forward to becoming a GTA. Specifically, 444 new GTAs (93%) reported they were looking forward to the role. Six new GTAs (1%) reported they were not looking forward to serving as GTA. Twenty-two new GTAs (5%) reported uncertainty (e.g., "I'm not sure") or ambivalence (e.g., "yes and no"). Five respondents (1%) did not answer this item. The predominant reasons for looking forward to being a GTA included loving the experience of teaching, looking forward to interactions with students, wanting to help students, wanting to share their academic discipline with students, having the opportunity to face new challenges and develop new skills, professional development for their goals of becoming a professor, and having funded employment. Reasons for not looking forward the GTA role included lack of previous teaching experience, not wanting to be a GTA, and anxiety about the experience. Reasons for uncertainty or ambivalence included various combinations of nervousness, anxiety, fear about teaching, and the time and effort involved in working as a GTA.

What are three words you would use to describe the best teacher you ever

had?

Our 477 new GTAs reported a total of 1,395 words to describe the best teacher they ever had (see Table 1). Supporting Saucier and colleagues' "PEACE" model for teaching excellence (2022a), we found that 92% (1,286 words) of the responses were categorized into one of the PEACE components: Preparation (13%; 178 words; e.g., organized, clear, communicative), Expertise (11%; 156 words; e.g., knowledgeable, intelligent, smart), Authenticity (4%; 59 words; e.g., genuine, honest, relatable), Caring (40%; 561 words; e.g., understanding, helpful, kind), or Engagement (24%; 332 words; e.g., energetic, interactive, passionate). Notably, the most frequent category was "Caring," suggesting compassion is a common attribute valued by GTAs. Words categorized as "Other" (8%; 109 words) included terms such as funny, creative, and confident. While the PEACE elements are relevant for all teachers, the "Other" words are less universal and more idiosyncratic (e.g., not everyone can be "funny").

Table 1
Response Frequencies for "Words to Describe the Best Teacher I Ever Had"

Category	Response Frequency	Example Responses
Preparation	178 (12.80%)	*Organized, Clear, Communicative*
Expertise	156 (11.20%)	*Knowledgeable, Intelligent, Smart*
Authenticity	59 (4.20%)	*Genuine, Honest, Relatable, Realistic*
Caring	561 (40.20%)	*Understanding, Helpful, Approachable, Kind*
Engagement	332 (23.80%)	*Energetic, Inspiring, Interactive, Passionate*
Other	109 (7.80%)	*Quirky, Funny, Creative*

Note. New GTAs provided a total of 1,395 words to describe the best teacher they ever had.

What are three words you want your students to use to describe you as a teacher/GTA?

Our 477 new GTAs reported a total of 1,394 words to describe how they wanted their students to describe them as a teacher/GTA (see Table 2). Similar to the words describing the best teacher they ever had, 92% (1,279 words) of the responses aligned with Saucier et al.'s (2022a) "PEACE" model: Preparation (12%; 165 words; e.g., articulate, professional), Expertise (14%; 189 words; e.g., competent), Authenticity (5%; 75 words; e.g., personal, open), Caring (45%; 631 words; e.g., friendly, patient, approachable), and Engagement (16%; 219 words; e.g., enthusiastic, motivating). Words categorized as "Other" (8%; 115 words) again included themes such as humor, confidence, and being relaxed.

Table 2
Response Frequencies for "Words I Want My Students to Use to Describe Me

Category	Response Frequency	Example Responses
Preparation	165 (11.80%)	*Articulate, Organized, Professional*
Expertise	189 (13.60%)	*Knowledgeable, Intelligent, Competent*
Authenticity	75 (5.40%)	*Personal, Honest, Relatable, Open*
Caring	631 (45.30%)	*Friendly, Helpful, Patient, Approachable*
Engagement	219 (15.70%)	*Enthusiastic, Motivating, Passionate*
Other	115 (8.30%)	*Humorous, Confident, Relaxed*

Note. New GTAs provided a total of 1,394 words to describe how they would want their students to describe them.

What is something that scares you about teaching/being a GTA?

Four hundred forty-three (93%) of our new GTAs reported something that scares them about teaching/working as a GTA. Our content analysis

revealed the emergence of seven related categories of fears. The most frequent category of responses indicated that new GTAs were scared of failing to teach well (21%; n = 94), which included elements of being responsible for their students' education, having to keep their students' interest, failing to fulfill their teaching responsibilities, and making mistakes. A few responses even directly mentioned having the imposter phenomenon (i.e., the feeling that one is not qualified for their current position or that others will perceive them as a fraud; see Parkman, 2016). The second most frequent category of responses indicated that new GTAs were scared of being unprepared (18%; n = 81), which included fears related to having to teach for the first time, not knowing what they were doing, being unprepared, not knowing the material, not being qualified, and not knowing how to do various parts of the job. The third most frequent category of responses indicated that new GTAs were scared of having to answer their students' questions (14%; n = 61), which centered primarily on the specific fear of students asking questions the new GTAs did not know how to answer.

The fourth most frequent category of responses indicated that new GTAs were scared of the heavy workload and having to balance their multiple responsibilities (13%; n = 57), which included fears of not being able to balance their teaching responsibilities with their research responsibilities and personal life, having to deal with large classes, having to do a lot of grading, having to manage technology, and having issues with time management. The fifth most frequent category of responses indicated that new GTAs were scared of concerns and conflicts with their students (13%; n = 56), which included fears of students' complaints about their grades, having to manage conflict with and between their students, having to teach difficult students, and being close in age to their students. The sixth most frequent category of responses indicated that new GTAs were scared of communication barriers while teaching (12%; n = 53), which included general fears about not being able to help students understand or appreciate the content as well as specific fears related to having to teach in English as a second language and to potentially speak the language with a non-native accent. The final category of responses indicated that new GTAs were scared of public speaking (9%; n = 42), in which responses directly mentioned the fear of being nervous or having stage fright when speaking in front of

students. These categories of fears provide insights into what new GTAs are scared of in relation to their upcoming teaching and GTA assignments and may be used to inspire efforts to prepare GTAs for their roles.

What is one thing you do/will do to prepare yourself to engage your students?

Four hundred fifty-nine (96%) of our new GTAs reported a strategy for preparing themselves to engage their students. Our content analysis revealed the emergence of 6 categories of strategies that our new GTAs use to prepare them to engage their students. The most frequent category of strategies was to focus on preparing and practicing the course material (51%; n = 236), which pertained to familiarizing themselves with and practicing the content; creating lesson plans, lectures, and PowerPoint slides; and using the textbook and supplemental resources to aid their preparation. The second most frequent category of strategies was to prepare to support and build rapport with their students (19%; n = 88), which included our new GTAs making themselves relatable, approachable, and accessible to their students; learning their students' names; learning and supporting their students' interests and goals; and making their classes welcoming and inclusive.

The third most frequent category of strategies was to use active learning techniques to teach their students (15%; n = 67), which included preparing to teach using activities, discussions, questions, and frequent short quizzes. The fourth most frequent category of strategies was to contextualize the content (7%; n = 30), which included using real-life examples, jokes, practical applications, social media, and stories to make the content relevant for their students. The fifth most frequent category of strategies was that our new GTAs will promote their own engagement to prepare to engage their students (6%; n = 28), which included our new GTAs focusing on their own energy, enthusiasm, and excitement for their content, and well as on promoting their own ability to teach well by focusing on breathing, remaining positive, and being themselves while they teach. The final category of strategies was for our new GTAs to use their own professional networks to help them prepare to engage their students (3%; n = 13), which included working with their advisors, supervising professors, other GTAs,

and colleagues to get advice about teaching, feedback on their teaching, and course materials. The strategies reported here provide insight into how new GTAs are likely to try to alleviate their fears of teaching. Further, these strategies also provide the foundation for planning other professional development opportunities designed to help new GTAs be successful in the classroom (e.g., Saucier et al., 2021).

What is one question you have about teaching/being a GTA?

Three hundred nine (65%) of our new GTAs reported a question they had about teaching/being a GTA. Our content analysis revealed the emergence of six categories for these questions. The most frequent category of question was about the logistics, responsibilities, compensation, and benefits of teaching/being a GTA (34%; n = 106). These questions addressed a broad array of the general and specific expectations and responsibilities (e.g., how much time being a GTA takes, grading responsibilities, working with a supervising instructor) and included questions about their financial compensation, tuition waivers, and opportunities for awards. The second most frequent category of question was about how to teach well and engage their students (30%; n = 92). These questions asked about general and specific ways to excel as a teacher, including about how to prepare to teach, classroom management techniques, classroom strategies to use to create and deliver lectures, and how to engage students.

The third most frequent category of question was about experiencing challenges and dealing with student issues while functioning as a GTA (14%; n = 44). These questions included questions about challenges with performing poorly as a GTA, needing tech support, and working with difficult supervisors, as well as questions about how to address students' having personal and behavioral issues, how to deal with grade disputes, and how to deal with conflict in the classroom. The fourth most frequent category of question was about balancing their various responsibilities (9%; n = 27). These questions asked about time management issues, how to manage teaching/GTA responsibilities with research and personal responsibilities, as well as with their own course loads as students. The fifth most frequent category of question was about communicating with students (7%; n = 22). These questions included issues such as how to communicate effectively

with students, how to manage the GTA-student relationship, and how to inspire respect from students. The final category of question was about managing stress and building confidence (5%; n = 16). These questions asked about how to handle the stress and anxiety of teaching and about how to gain, and how long it will take to gain, confidence in teaching. These categories indicate that GTAs' questions are largely motivated by their apprehension about teaching and filling a GTA role, which may suggest professional development efforts and events designed proactively to address these anxieties and provide relevant information will be helpful to and appreciated by new GTAs.

Discussion

We surveyed seven cohorts of incoming GTAs at the beginning of their respective orientations regarding their motivations, goals, concerns, and questions related to their upcoming teaching and GTA responsibilities. Although their responses highlight the various fears and concerns that many new GTAs are likely to experience, they also elucidate how institutions, TLCs, and faculty mentors can support the success of new GTAs in higher education. Taken together, these responses reveal a fundamental truth about many new GTAs—they are motivated to do well.

GTAs Are Motivated to Do Well

We want to highlight that our new GTAs overwhelmingly reported looking forward to teaching and being a GTA. While the prospect of funded employment was noted by some, the prospects of teaching and interacting with students were compelling factors. Prior to our orientation session, we asked attendees to think about the characteristics of the best teachers they ever had and then reflect on the characteristics they would want their students to use to describe them. The words used were often consistent in both descriptions and fit well into Saucier et al.'s (2022a) conceptualization of PEACE, with the most frequent responses pertaining to Caring and Engagement. This suggests that new GTAs are motivated to embody these attributes in their teaching practices while also demonstrating a desire to model their best teachers in their own teaching by bringing PEACE to their

classes. These responses provide evidence for the utility of using PEACE as an overarching framework for teaching personas, philosophies, and practices. They also suggest that professional development efforts should employ the PEACE framework to support the teaching efforts of new GTAs.

Further evidence of their motivation to do well came from responses about how they would prepare themselves to engage their students. Most respondents focused on preparing and practicing their course material (Preparation and Expertise). Others mentioned building rapport with and supporting their students (Caring). Some discussed using active learning techniques and contextualizing the content, which are effective methods (e.g., Chi & Wylie, 2014; Fernandes et al., 2013; Prince, 2004) for engaging students and supporting their learning (Engagement). Additionally, some new GTAs mentioned focusing on their own engagement as a means to better engage their students, aligning with Saucier et al.'s (2022b) Trickle-Down Engagement (TDE) model. This model theorizes that higher levels of instructor engagement lead to higher levels of student engagement, which in turn promotes student learning.

Common Concerns & Questions

Despite generally positive attitudes toward their new responsibilities, GTAs shared common concerns and questions about their new professional roles. Consistent with research on GTA experiences (e.g., Cho et al., 2011), the primary concerns included failing to teach well and being unprepared to teach. Specific fears included answering student questions, dealing with student concerns and conflicts, communication barriers (e.g., having an accent, teaching in English as a secondary language), and public speaking. Other concerns related to the workload expected of a GTA and balancing that workload with other responsibilities. Many new GTAs' questions mirrored these concerns, focusing on how to teach and engage students effectively, manage student issues, balance responsibilities, and handle stress. It was disconcerting that many new GTAs, just days away from being in classrooms, had unresolved questions about the logistics of their positions. Although these findings are specific to the GTAs at our institution, we believe they are ubiquitous among new GTAs. As such, we hope our findings, particularly regarding new GTAs' concerns and questions, will

inform and inspire professional development sessions (e.g., workshops, orientations) for all incoming GTAs.

Recommendations for GTA Preparation

Incoming GTA preparation should be done proactively at the institutional level (e.g., graduate school, TLCs) and faculty level. At the institutional level, graduate schools and TLCs offer important starting points for GTAs, especially prior to and/or as they arrive on campus. For example, graduate schools can provide information about university-level logistics (e.g., compensation, accessing health insurance). Consistent with our TLC's efforts, we also encourage universities to offer GTA Orientation prior to the start of each semester. A previously described model for GTA Orientation outlines common expectations for GTAs across disciplines, excellent teaching practices, and resources on campus that exist to help both teachers and students academically and emotionally (Saucier et al., 2021). As evidenced by our findings, we recommend asking new GTAs what they need, informing them in advance of information that they need to know, and requesting feedback on the session so that these professional development opportunities can continue to improve and provide useful, timely information to GTAs. We also recommend that faculty mentors meet with their new GTAs prior to the start of the semester to outline their expectations for the specific course. Ultimately, it is important to understand that new GTAs are future educators and colleagues. It is thus is part of our responsibility to support and promote the success of new GTAs in higher education.

Implications for Professional Development Programming

The first and most obvious implication for the professional development of new GTAs was for us to use these data to refine the information provided in our New GTA Orientation. As described earlier, our New GTA Orientation consists of a half-day professional development program that includes a keynote presentation about the roles and responsibilities of being a GTA and an overview of excellent teaching practices. The Orientation also includes a panel discussion by current GTAs, presentations by the directors of the offices of student life and institutional equity, and an information

session about TLC professional development offerings. This slate of events was designed to provide information that our GTAs report that they need to be successful. Evidence from our Fall 2023 New GTA Orientation—the most recent large New GTA Orientation we have offered—supports its value. Seventy-seven attendees completed our post-orientation survey. As shown in Table 3, the new GTAs who attended the Fall 2023 New GTA Orientation collectively reported that the orientation was valuable in preparing them to be GTAs and addressed their questions and concerns, with means of 7 or greater on the 1 to 9 response scale for every response item. Further, 33 attendees (43%) reported the overall quality of our New Faculty Orientation was "excellent," another 33 (43%) reported it to be "very good," 8 (10%) as "good," 3 (4%) as "fair," and none as "poor." These responses suggest that our New GTA Orientation provided information that the new GTAs perceived would help them succeed as new GTAs.

Table 3

Mean and Standard Deviations for the Post-Event Survey for Our Fall 2023 New GTA Orientation

	M	*SD*
1. GTA Orientation was well-organized.	8.36	1.19
2. The speakers at orientation provided important information.	8.07	1.41
3. I have a better understanding of what it takes to be an excellent GTA because of orientation.	7.57	1.48
4. GTA Orientation was valuable for me as an incoming GTA.	7.57	1.64
5. I feel more confident in my future role as a GTA because of orientation.	7.44	1.53
6. The questions and/or concerns I had about being a GTA were addressed during orientation.	7.41	1.63
7. I enjoyed GTA Orientation.	7.40	1.71
8. I am more excited to be a GTA because of orientation.	7.00	1.74

Note. These data represent the responses of the 77 attendees who completed the post-event survey for our Fall 2023 New GTA Orientation. Responses were collected on a 1 (*Strongly Disagree*) to 9 (*Strongly Agree*) Likert-type scale.

Beyond refining our initial orientation to address the content and guidance indicated by these survey results, we have used the findings to inform other professional development efforts at our university and recommend other institutions do the same. Importantly, we believe the motivations, goals, concerns, and questions reported by our new GTAs reflect broader concerns common to those new to teaching roles, not just to GTAs specifically. Thus, these insights also apply to new teaching faculty. Given that teacher training is not universal even for faculty (e.g., Jones, 2008), we used these results to inform professional development efforts for both GTAs and new or experienced teaching faculty. One such effort is our graduate course, "Principles of College Teaching," offered by the TLC each Fall and Spring semester. Graduate students and some faculty take this course, which provides a comprehensive overview of teaching issues, including course design, student learning outcomes (SLOs), assessment, accessibility, inclusive teaching, online modalities, and other topics. Inspired by survey responses from new GTAs, we revised the course to include more discussions on student engagement techniques, active learning methods, classroom community building, strategies for preventing and addressing problem behaviors, and practical recommendations for incorporating empathy, support, and PEACE into teaching (Saucier et al., 2022a; 2023).

Our TLC offers a New Faculty Institute for new faculty members in their first three years at the university. The Institute offers a dedicated slate of events, including a New Faculty Orientation is followed by monthly events, some of which provide professional development in teaching and other domains (e.g., research, extension), the opportunity to meet members of higher administration, and/or occasions for the new faculty to meet and socialize. The content of the New Faculty Orientation and the monthly events is partially inspired by the comments that our new GTAs made about their concerns and questions regarding teaching. We expect that there will be overlap in their concerns and questions, given that many of our new faculty also are new or relatively new to teaching.

Additionally, we host a weekly professional development series (Saucier et al., 2021) offered over the lunch hour on Wednesdays synchronously over Zoom. We also record and archive the events on our TLC website for asynchronous viewing. Our series focuses on perennial "need to know" teaching practices and issues (e.g., accessibility, student support, academic

integrity), and offers other events that are more specialized in terms of their topics that vary from year to year. For instance, in Fall 2023, we hosted a session on artificial intelligence in higher education (e.g., ChatGPT) in response to faculty concerns. Based on GTA survey feedback, we also offered sessions covering topics like increasing student engagement, active learning techniques, and inclusive teaching practices. Our offerings have been adjusted in response to survey responses regarding new GTAs' motivations, goals, concerns, and questions, comparable to the explicit discussion and guidance on topics in our Principles of College Teaching course (e.g., increasing student engagement, active learning techniques, inclusive teaching practices). Moreover, we offer sessions for faculty on effectively working with GTAs, including preparing them for their roles, assigning responsibilities, and fostering collaborative teaching relationships.

We acknowledge that attendance and participation in our professional development efforts are voluntary. While we do reach many faculty (e.g., in our professional development series; Saucier et al., 2021), we do not reach a majority of those who supervise GTAs, nor can we be certain that the attendees are those who would potentially benefit the most. However, it is clear that using the survey of new GTAs to inform our professional development offerings is worthwhile, and our future assessments may target more directly how these offerings impact GTAs' and their supervisors' experiences. Overall, these programs and events may provide information to answer the questions and assuage the concerns that our new GTAs raised. They may also afford the opportunity for networking and support as part of the university's community of teachers. e aim to dynamically support the teaching excellence of both new and experienced educators (GTAs and faculty), using their feedback to meet their evolving needs.

Implications for Directors of Centers of Teaching and Learning and Faculty Developers

Using our study as a foundation and consequent revisions to our own professional development programming as a model, directors of centers of teaching and learning and other faculty developers may more intentionally and systematically create the professional development opportunities that will support the teaching excellence and experiences of GTAs and teaching

faculty. One practical extension to our research is to use Saucier et al.'s (2022a) conceptualization of PEACE to inspire more specific measurement and development of the attributes of Preparation, Expertise, Authenticity, Caring, and Engagement in our GTAs and teaching faculty as they relate to teaching practices and behaviors. Although it is abstract, this conceptualization can usefully connect to teaching behaviors that would inspire more concrete professional development efforts and training for GTAs and teaching faculty.

Directors of centers of teaching and learning and other faculty developers may then assess how GTAs and teaching faculty feel supported by their institutions in pursuing and achieving these foundations for teaching excellence. Reporting our collective efforts as directors of centers of teaching and learning and other faculty developers and the efficacy of our efforts to provide support for the professional development of teaching excellence is important. Doing so will continue to build a body of extant published literature on the scholarship of teaching and learning (SoTL) that helps to guide directors of centers of teaching and learning and other faculty developers toward successful support of the development of their GTAs and teaching faculty, and empower them to avoid duplicating ineffective practices.

Conclusion

Our new GTAs demonstrated diverse perspectives on their upcoming opportunities to teach and serve as GTAs. They reported a generally optimistic disposition toward being new GTAs, a strong motivation to teach well, and specific plans and goals to engage their students effectively. However, our new GTAs also expressed fears, concerns, and questions about these responsibilities. We believe their responses provide meaningful information to inspire proactive orientations and professional development sessions aimed at addressing the common fears, concerns, and questions that new GTAs often face.

We acknowledge that our conclusions may be limited by the fact that our respondents were new GTAs from only one university. As such, they may not yet fully articulate what they need to be successful as GTAs. Nevertheless, we expect that our new GTAs' responses reasonably and

broadly reflect the motivations, goals, concerns, and questions of new GTAs, and perhaps even new teaching faculty more generally. Teaching and Learning Centers (TLCs), graduate colleges, academic departments, and other units within colleges and universities would benefit from using the information presented here when designing and implementing their own professional development efforts to support new GTAs and teaching faculty. We have also provided examples of how we have done so at our university.

We argue that by equipping GTAs with what they need to excel in the classroom—through professional development inspired by evidence-based best teaching practices—and extending such efforts to other new (and experienced) teaching faculty, institutions may better achieve their mission of supporting excellence in teaching and learning.

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Donald A. Saucier, Kansas State University
Noah D. Renken, Kansas State University
Ashley A. Schiffer, Kansas State University
Tucker L. Jones, Washburn University