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Undergraduate Teaching Assistants' Conceptions of Teaching

by

Betsy Keating

A Dissertation

Submitted to the Faculty of Graduate Studies

through the Faculty of Education

in Partial Fulfillment of the Requirements for

the Degree of Doctor of Philosophy

at the University of Windsor

Windsor, Ontario, Canada

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Undergraduate Teaching Assistants' Conceptions of Teaching

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Author's Declaration of Originality

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Abstract

This mixed-methods exploratory study investigated change in the conceptions of teaching held by undergraduate student teaching assistants (UTAs) at a comprehensive Canadian university. Twenty-nine UTAs working in a large (~1,600) mostly online course were surveyed before and after one 13-week semester. Ten UTAs from the survey group were interviewed early in the semester and again post-semester. The interviews were analysed through three lenses: Stages of Concern (Fuller 1969), a teacher-oriented to learning-oriented spectrum of teaching approaches (Barr & Tagg, 1995; Kember & Kwan, 2000), and a taxonomy of teacher characteristics (Feldman 1989, 2007).

Literature on these frameworks was reviewed, as well as literature on the traditionally disparate roles of UTAs and graduate student teaching assistants (GTAs), the effects of professional development on teaching conceptions and approaches, and the effects of teaching approaches on student learning. The literature on professional development for UTAs in teaching and learning was limited, and there was a gap in the literature on UTAs working in roles that extend beyond the traditional into a more GTA-type role without participation in such professional development.

UTAs were asked to rate the importance of a variety of teaching tasks. Quantitative results show that the UTAs rated the overall importance of all teaching tasks lower (less important) at the end of the semester, and there was a significant difference between their ratings of teacher-oriented tasks and learning-oriented tasks. The importance of learning-oriented tasks fell less than the importance of teacher-oriented tasks.

Qualitative results show that the UTAs' focus shifted slightly towards more learning-oriented concerns by the end of the semester, but that their levels of frustration were high. Results also show that the UTAs conceive of teaching in terms of the teacher's characteristics and behaviours, rather than conceiving of teaching as a variety of tasks.

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Chapter 1: Introduction

In this mixed-methods exploratory study, undergraduate students employed as teaching assistants in an academic writing skills program were asked about their conceptions of teaching, and changes in their conceptions and approaches to teaching, before and after one semester of teaching in the program.

Beginning in 2005 and scaling up in various stages, a Canadian comprehensive university instituted a large-scale writing program called Foundations of Academic Writing (FAW). The program consisted of two semester-long introductory writing courses for undergraduate students. The two courses were based on a previously existing blended course that had encountered rapidly increasing enrolment and was consequently re-designed for large-scale deployment online.

I first became interested in the Foundations of Academic Writing (FAW) program while studying for a master's degree in English at the same Canadian university. At the time, I was teaching academic writing to first-year undergraduate students in a composition program—based on a very different model from the FAW program. While both programs aimed to improve undergraduate students' writing skills, the contrasts between the two programs were notable.

The Composition program was designed by a specialist in composition and rhetoric and modeled on well-established programs used in post-secondary institutions across the United States (Graves, 1993; Jacobs & Dolmage, 2006). In this model, graduate students study pedagogical theory and practices specific to teaching writing skills. They have guidance and support through structured mentoring, and they carry out their duties within a community of practice. The graduate students each teach one section

of the course according to a pre-designed outline, using the same textbook and assessments, and sections are capped at 20 students per instructor (Program Development Committee, 2007). Within that format, the lesson plans and assignments are created by the individual graduate student instructors. In the composition program model, graduate students are focused on effective teaching and learning practices, and they are encouraged to cultivate self-reflective awareness about their development as teachers. This was a fairly standard model for teaching writing skills to first-year students in post-secondary education in the United States, although it was seldom used in Canada (Conference on College Composition and Communication, 1989/2015; Graves, 1993). The program had the added benefit of strengthening both the teaching practice and the writing skills of the graduate students involved.

The newly established FAW program, on the other hand, was based on a massive open online course (MOOC) model with online modules and optional online resources for the students (Program Development Committee, 2007). Regardless of the effectiveness of either the Composition model (small classes, face-to-face) or the FAW model (largely online), one program was vastly more expensive to carry out than the other, given the numbers of undergraduate students in need of writing skills. I was curious about the differences between these two models for writing instruction, and the research described below grew out of that curiosity.

Post-secondary institutions use a variety of names for roles at their institutions. In this document, “teacher” is an umbrella term; “instructor” represents any person teaching in a post-secondary institution, whose credentials may range from graduate student through full-time faculty member (e.g., the instructors who oversee the FAW program);

“professor” represents an experienced faculty member (e.g., the professor who designed the FAW program); graduate students who are employed as teaching assistants, rather than sessional instructors, are “GTAs;” and undergraduate students employed as teaching assistants are “UTAs.” Due to the nature of this study, the terms “teacher” and “instructor” are sometimes used to indicate the role occupied by a UTA.

Background: Context for the Study

In 2008, the University’s Faculty of Arts, Humanities, and Social Sciences (FAHSS) made the new FAW courses mandatory for their students. Unlike post-secondary institutions in the United States in which first-year students are required to take writing courses, Canadian universities do not have a history of requiring undergraduate students to study any composition and rhetoric (Graves, 1995). Since FAHSS includes just under half of the University’s total student population, approximately 2,200 students enrolled in the program (Singleton-Jackson & Colella, 2012). The courses took place almost entirely online, and campus visits were required only for orientation and proctored exams.

In the first few years of the program, depending on the anticipated enrolment, two or three instructors were hired to coordinate the program, and approximately 45-50 undergraduate students were hired to assist (UTAs). Each UTA was appointed to oversee a “class” of approximately 80 students in the initial semester (FAW I) or 50 students in the subsequent semester (FAW II). Each UTA was allotted ten hours per week for their duties. All sections of the course used the same syllabus, textbooks, assignments, rubrics, and exams (Singleton-Jackson & Colella, 2012).

The main criterion for hiring the individual UTAs was academic achievement in

the FAW courses (Singleton-Jackson & Colella, 2012). On rare occasions, when there were fewer applicants for the UTA positions, students with high academic achievement in general, who had not taken the FAW courses, were hired. Training for the positions was limited to a four-hour group orientation session near the beginning of classes, the majority of which covered “housekeeping” issues such as union rules, important dates and procedures, office hour expectations, reporting hierarchy, on-line learning system protocols, timesheets for reporting hours worked, etc.

For the most part, UTAs were the single point of contact for their students. The instructors oversaw “classes” of their own, handled logistics and policy matters, and were available for student appeals or programmatic questions. The UTAs’ tasks were either teaching or teaching-related. For example, they held weekly office hours; listened to student concerns and answered questions; evaluated student assignments, offering both formative and summative feedback; and they facilitated peer editing and discussions between students. Two or three UTAs with experience in the FAW program were designated “Head TAs,” and they acted as informal mentors for the other UTAs when necessary.

One method for comparing two different program models might be to track the student learning outcomes from each. However, a difference in outcomes would not offer much explanation about the conditions that potentially caused outcomes to differ. Both the Composition Program and the FAW Program, with their respective courses, were designed by professors with expertise in composition pedagogy, and so the course content was less likely to be a defining factor affecting student learning outcomes than the method of delivery. Both programs involved some use of technology, but one relied

much more substantially on online delivery. To compare these two disparate programs was beyond the scope of this study, but one major difference between the two programs was the teaching assistants and their respective training. The training and employment of graduate students as composition instructors is well established and covered in the research literature. However, research on the training and employment of undergraduate students who engage in a broad range of teaching responsibilities, similar to that of the graduate student instructors, is scant. Prior to any program review, or comparison of program delivery methods, more research was required to investigate the FAW UTAs' teaching concepts and approaches to teaching.

Problem Statement

The employment of UTAs to perform teaching tasks, traditionally considered the milieu of faculty members or graduate student teaching assistants (GTAs), has been largely unexamined in Canadian post-secondary education. Considerable literature exists about GTA development programs in the United States and other Western nations, and research on specifically Canadian contexts has increased over the past four decades (Boman, 2013; Kenny, Watson, & Watton, 2014; Korpan, 2011; Martin, Marx, Hasell, & Ellis, 1978; Piccinin, Farquharson, & Mihu, 1993). However, most literature on teaching assistant (TA) development programs is either purposefully focused on graduate students or assumes the term *TA* inherently connotes “graduate student” (Chism, 1987; Hardré & Burris, 2012; Nyquist, 1991b). There is also a considerable amount of available literature on the use of UTAs in various classroom settings and roles. There is less focus on pedagogical development in the UTA literature than there is in the literature about GTAs, probably due to the assumption that graduate students are heading for academic roles in

which they will teach, while there is no such expectation for undergraduate students. In the UTA literature, the focus is on student learning and development—for both the students and the UTAs—through peer mentorship, peer tutoring, peer editing, or methods for handling large classes (Gordon, Henry, & Dempster, 2013; Hogan, Norcross, Cannon, & Karpiak, 2007; Osborne, Norman, & Basford, 1997).

Post-secondary institutions in Canada have undergone major changes in their hiring practices in the last few decades. Contract faculty members make up a larger proportion of the teaching workforce than they did in the past. A recent Canadian Broadcasting Corporation (CBC) article and documentary (Basen, 2014) reports that over 50% of university courses are now taught by other than full-time faculty members. The numbers of contract faculty (also known by various titles such as sessional, part-time, adjunct, casual, or contingent faculty) have increased “significantly” in some institutions, compared to full-time tenure-track positions (Brownlee, 2015, p. 787). The exact figures from across Canada have not yet been reported, but Statistics Canada recently began gathering information about part-time academics (Foster, 2016). Some contract faculty members are graduate students who, instead of assisting full-time faculty members as GTAs, are assigned to teach a complete course or multiple courses. As of 2014, all eighteen of the Ontario universities with graduate programs employed graduate students to teach complete courses (Field, Jones, Karram Stephenson, & Khoyetsyan, 2014). Brownlee (2015), studying these eighteen Ontario universities, concluded that “the reluctance of universities to share data on contract faculty has been motivated by both political considerations as well as the nature of university data management” (p.787). Fiscal deficiencies, increased student populations, increased teaching loads, and other

pressures have forced teaching responsibilities to devolve from full-time faculty members to contingent faculty and graduate students (AUCC, 2011; Axelrod, 2002; OCUFA, 2014). It is widely reported that post-secondary institutions find some relief from financial pressures by hiring less expensive labour (Bauder, 2006; Brownlee, 2015; Field et al., 2014; Muzaka, 2009).

The availability of professional development programs in teaching and learning, for various academic staff members or graduate students who are charged with teaching duties, has been increasing in Canada, as well as in post-secondary institutions in many Western nations (Chada, 2013; Kenny et al., 2014; Park, 2004). Programs range from short workshops, to master's level courses, to full certification programs in pedagogical theory and practice, and such programs are most often designed to meet the needs of new faculty, graduate student TAs, and any faculty members faced with adopting new teaching methods (Hanbury, Prosser, & Rickinson, 2008; Hardré & Burris, 2012; Korpan, 2014; Kreber & Brook, 2001; Potter, Kustra, Ackerson, & Prada, 2015). An increase in graduate student and GTA pedagogical development programs followed the increase in the numbers of graduate students hired to teach complete courses (Boman, 2013; Korpan, 2014; Rodgers, Christie, & Wideman, 2014). Participants in these professional development programs are aware of their engagement with teaching and learning and the necessity for some training or development in instructional skills. Similarly, students in Faculties of Education, who are candidates-in-training for teaching in the public Pre-Kindergarten through Secondary School education systems, are aware of their teaching career goals and take an active, deliberate interest in training.

By contrast, UTAs employed to assist in post-secondary courses may, or may not, be aware that their assigned tasks include the active practice of teaching and learning strategies. Therefore, they may be unconcerned about developing knowledge and/or instructional skills when it comes to teaching. In the present study, *teaching tasks* are defined as those activities common to standard practices in teaching and learning, such as: setting tone and atmosphere; facilitating insight about content material; guiding, demonstrating, motivating, modelling, and encouraging student learning; clarifying instructions and making expectations explicit; evaluating and marking student assignments; offering feedback on assessed materials; listening to concerns and responding to questions; and facilitating relationships between students working in groups. It is important to ask the question, who is teaching? Biggs and Tang (2007) state “how effectively we teach depends on what we think teaching is,” and “all teachers have some theory of what teaching is when they are doing it, even if they are not explicitly aware of that theory” (p. 15). The teacher’s level of knowledge, skills, and experience—not only in research and disciplinary expertise, but in the application of pedagogy—does affect student learning (Gibbs & Coffey, 2004; Gow & Kember, 1993).

A potential problem could arise if the financial relief that institutions gain by hiring relatively inexpensive contract labour for teaching were to extend to the even less expensive UTA. There are well-established practices, proven to benefit both students and faculty members, for undergraduates acting as assistants in the classroom in certain types of peer-led activities. However, there may be cause for concern if UTAs are moved into roles with altered and increased teaching responsibilities, without any accompanying

developmental programs in teaching and learning practices, such as those put in place for graduate students.

Rationale

A chain of connections has been established between the teacher's approach to teaching, students' approaches to learning, and the students' learning outcomes (Entwistle & Ramsden, 1983; Gibbs & Coffey, 2004; Kember & Gow, 1994; Trigwell, Prosser, & Taylor, 1994; Trigwell, Prosser, & Waterhouse, 1999). Teachers' intentions affect both their conceptions of teaching and the strategies they apply in the classroom. For example, if one teacher's intent was to transmit information, and another teacher's intent was to foster conceptual change, the strategies they employ would differ. A teacher's approach to teaching, whether teacher-focused or learning-focused, affects the students' approaches to learning. (Gibbs & Coffey, 2004; Norton, Richardson, Hartley, Newstead, & Mayes, 2005; Trigwell et al., 1994).

It follows that the UTAs' intentions and their conceptions of teaching would affect their approaches to their duties, which would in turn potentially affect the students' approaches to learning in the courses and the learning outcomes for students in the FAW program. In a program where the primary contact teachers (the UTAs, in this case) have specific teaching tasks to perform, with no foundational knowledge in teaching and learning practice, the question becomes: what determines each individual UTA's approach to performing the assigned teaching tasks? Just as experienced faculty members, or teacher-candidates-in-deliberate-training, base their approaches to teaching practice on personal philosophies, on their individual beliefs about teaching and learning, and on their individual teaching contexts (Biggs & Tang, 2007; Kember, 1997), the

undergraduate teaching assistants are likely to call on their own past experiences and personal conceptions of teaching as they go about their duties.

There is a considerable amount of research examining faculty members, graduate students, and teacher candidates and their various conceptions of, approaches to, perceptions of, and efficacy with teaching. However, all the participants in this body of research had teaching experience, professional development in teaching and learning, or both. All participants in these programs had the intent to teach. (Boman, 2008; Carroll, 1980; Kember & Kwan, 2000; Postareff, Lindblom-Ylänne, & Nevgi, 2008; Potter et al., 2015; Stes, Gijbels, & Van Petegem, 2008; Weinstein, 1989; Woolley, Benjamin, & Woolley, 2004). No research that involved UTAs who lack any such training or experience, but who carry out teaching tasks similar to those in more experienced roles, was found.

The recent increase in large-class online education initiatives, combined with institutions' financial constraints, might make programs similar to FAW attractive to other post-secondary institutions in Canada and elsewhere. The FAW model is a relatively inexpensive way to offer large-scale writing instruction to many hundreds of first-year students by hiring a large number of UTAs and few contract instructors. This program structure might be a winning situation for the institution, if the model effectively promotes students' learning, as well as benefiting the undergraduate teaching assistants financially. It is a largely unexamined program, however, and its effects have yet to be measured. While the FAW model was based on peer-editing practices that are common in writing programs, the effects of scaling up courses to accommodate so many and the effects of altering the roles of UTAs are not known.

Overview of the Study

The present study was designed to examine the UTAs' conceptions of teaching as one critical factor in the design of the FAW program. More specifically, the multistage study design, with repeated measures and mixed methods, was intended to investigate undergraduate teaching assistants' conceptions of teaching, any changes in those pedagogical concepts over the course of one 13-week semester, and the UTA participants' beliefs about the reasons for their conceptual changes. The study was intended to be exploratory and descriptive rather than explanatory or predictive.

The research design (Figure 1) was partially sequential since some, but not all, of the questionnaire data was used to inform semi-structured interviews. Thirty UTAs working in an online course of approximately 1,600¹ students were surveyed before and after one 13-week semester. Ten participants from the survey group were interviewed early in the semester and again post-semester. Some of the pre-semester survey data was used to inform the semi-structured interview questions early in the semester. A limited analysis comparing change in the two sets of survey data was used to inform the post-semester interview questions. Interview responses were analysed through three lenses:

- an adaptation of the stages of concern model (Fuller, 1969; Fuller, Parsons, & Watkins, 1974) because, according to this theory, teachers-in-training tend to move through various conceptual stages as they learn to teach;

¹ When enrolment was highest, the FAW courses had over 2,200 students. However, enrolment fell in recent years when Engineering students were no longer required to take the courses (University of Windsor, 2008/09; University of Windsor, 2015).

- a teacher-oriented to learning-oriented spectrum of teaching approaches (Barr & Tagg, 1995; Prosser & Trigwell, 1999), because participants involved in deliberate and intentional pedagogical instruction tend to move from a teacher-oriented towards a more learning-oriented conception of teaching;
- a taxonomy of teacher qualities adapted from Feldman's (1989) review of student ratings of instructors, because the UTAs' descriptions of teaching included the qualities and characteristics of teachers, rather than just the activities of teaching.

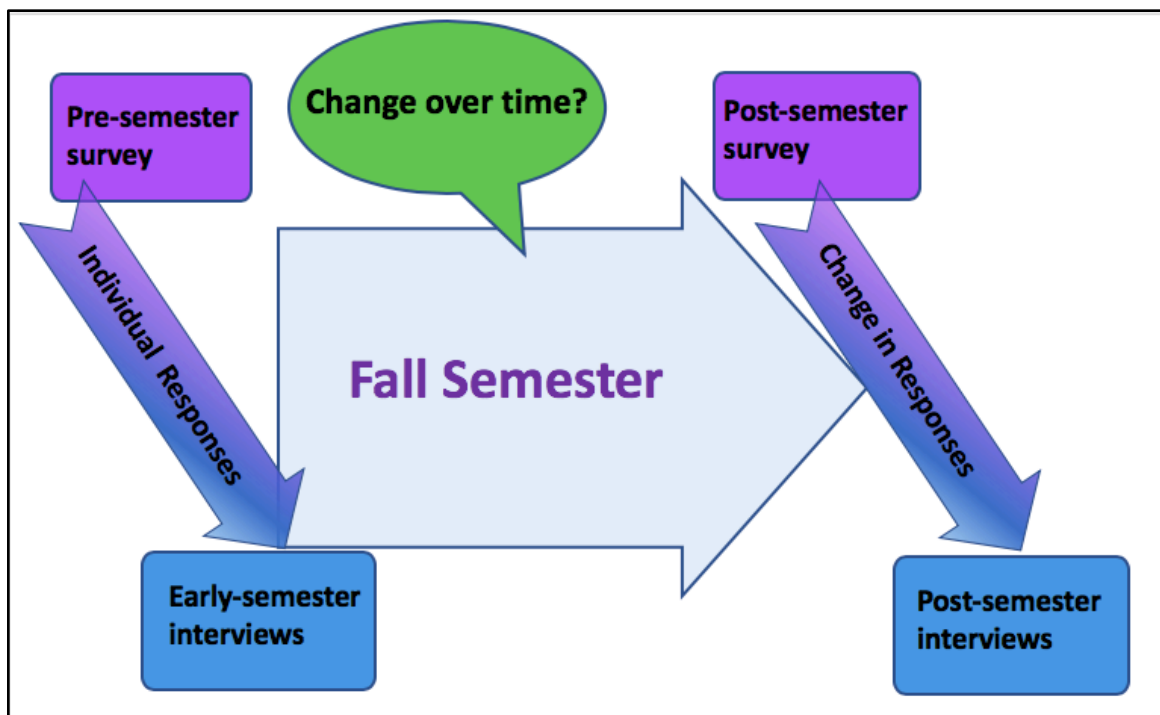


Figure 1. Concept map of the research design

Research questions.

While the present study is not a program review, the initial drive to begin researching the FAW program was its history of rapid growth and the apparently high

level of UTA responsibilities in an innovative program. From an initial overall interest in the efficacy of the FAW program for student learning, the research questions were narrowed to the current three:

1. What are the UTAs' conceptions of teaching prior to teaching?
2. What changes take place in the UTAs' conceptions of teaching during the 13-week semester experience?
3. What are the UTAs' beliefs about the relationship between their own past student experiences, their current teaching experiences, and any changes that may have occurred during the semester in their conceptions of teaching?

Chapter 2: Literature Review

Recent Changes in Post-Secondary Education

A frequently occurring theme in the research literature on teaching assistant training or development is that sweeping change is overtaking post-secondary education. Commonly cited trends of the past four decades that affect teaching and learning include: increased enrolment and shifting student demographics, decreased institutional resources, administrative positioning of institutions as commercial entities, competitive online education models, the shifting ratio of full-time faculty members to part-time academic staff, and increasing calls for public accountability and quality assurance (AUCC, 2011; Austin & Wulff, 2004; Bok, 2003; Eagleton, 2015; Fallis, 2004; Gallup & Svare, 2016; Kirby, 2007; OCUFA, 2014; Rae, 2004). Institutional reactions to changes and trends, singly and in various combinations, affect the way post-secondary teaching and learning is carried out.

In Canadian post-secondary institutions, one reaction to this combination of changes has been to increase the availability of professional development in pedagogy and instructional skills. Educational development, also known as instructional development, academic development, or faculty development in Canada, started in one or two locations in the 1960s and extended through the rest of the provinces as more Centres for Teaching and Learning were established, an increase that became more rapid in the late 1980s and 1990s (Scarfe, 2004; Wilcox, 1997). A 2011 project to link centres for teaching and learning in Canadian post-secondary institutions revealed that at least 78 centres existed in Canada at the time (Educational Developer's Caucus). Most centres offered instructional development opportunities to faculty members, and then

increasingly to graduate students (Boman, 2013; Rose, 2012; Schönwetter & Ellis, 2009).

While training and development programs for UTAs have existed for at least as many decades as programs for faculty or graduate students, the training was usually specific to the assigned tasks, rather than focused on pedagogical knowledge and practice. Recently, there have been a few reports of UTA programming that extends into the realm of pedagogy more broadly. (Filtz & Gurung, 2013; Marx, Martin, Ellis, & Hasell, 1978; Roderick, 2009; Rolheiser, Seifert, McCloy, Gravestock, Stewart, Greenleaf, Burnett, Carpenter, Pottruff, & McKean, 2013; Sana, Pachai, & Kim, 2011).

Teaching Assistant Roles

In the literature on teaching assistant training in Canadian and international contexts, many authors do not differentiate between graduate student teaching assistants (GTAs) and undergraduate student teaching assistants (UTAs). While the differentiation between these groups of students is more common in the recent literature, it is not consistent. The term TA is used without explicit differentiation between graduate and undergraduate students for one of three reasons: for some authors, graduate student is implicit in the term due to the long association with graduate students' apprenticeship as future faculty members (i.e., only graduate students are TAs); some authors rely on the publication's context for clarification; and for some, the differentiation may not seem important, and so the roles are conflated under the umbrella term TA.

One argument for differentiating between undergraduate and graduate students in the TA role is that the two groups have traditionally been employed for different sets of tasks (Filtz & Gurung, 2013). Graduate students are typically employed to relieve some of the faculty teaching workload and to gain experience and/or training in teaching while

receiving financial support during their studies (Nyquist, Abbott, Wulff, & Sprague, 1991; Park, 2004). Undergraduate students are typically employed for clerical duties and/or for assisting with teaching and learning methods that involve peer support, often in large-class settings (Weidert, Wendorf, Gurung, & Filz, 2012; Whitman, 1988). Recent articles tend to differentiate more clearly between graduate teaching assistants (GTAs) and undergraduate teaching assistants (UTAs), although the terms are still used inconsistently. Each teaching assistant category had, at one time, a purposeful origin with its own distinct set of goals. When the UTA and GTA roles are conflated, there may be unanticipated consequences.

GTAs take part in a range of teaching tasks, from assisting with a single aspect of teaching, such as leading discussions or marking assessments, to designing and conducting entire courses (Austin, 2002; Chism, 1987; Luo, Grady, & Bellows, 2001). The graduate student teaching assistantship has been considered a major component of the apprenticeship model or necessary professional development for future faculty training (Austin & Wulff, 2004; Golde & Dore, 2001; Korpan, 2014; Nyquist & Wulff, 1996). Although the necessity for teaching experience has recently come into question, because fewer graduate students are aiming for faculty positions, institutions have been slow to modify the model, and the GTA role as apprentice future faculty member remains dominant. For example, on the Stanford University website, the current description of a TA's role states, "consider this practice for a faculty position that combines teaching and research" (Stanford, 2016, para. 2). If a GTA is viewed as an apprentice future faculty member, then both training and experience in teaching are useful learning experiences for

that graduate student. Nyquist and Wulff (2000), in a list of eight recommendations for “re-imagining” graduate student education, suggest

prepar[ing] students to teach in a variety of settings using a range of pedagogies based on research in teaching and learning. Students need to acquire competence to teach in a very broad sense in the classroom, in one-on-one settings, as project managers, as motivators and evaluators of others, etc., as they assume positions in public, non-profit, or corporate sectors. (p. 2)

For the institution, saving faculty resources may be seen as a side benefit to the primary mandates of financially supporting graduate students and training them with skill sets for their anticipated roles as faculty members. Recent literature, however, attests to a decided shift in graduate level education—away from the apprenticeship model. Institutions can no longer assume that graduate students will become, or even attempt to become, faculty members (Gaff, 2002; Golde & Dore, 2001; Rose, 2012). The graduate student’s position as an apprentice in need of instructional skills has come into question, and it may be that financial support for continuing graduate studies is benefit enough for employing GTAs to teach. However, the experience of undergraduate students is heavily affected by GTAs in teaching roles, who increasingly take on these responsibilities (Chadha, 2015; Hardré & Burris, 2012; Park, 2004).

Several researchers have proposed that expanding student enrolment and decreased fiscal capacity are responsible for an increase in the use of both GTAs and UTAs in recent years (Hogan et al., 2007; Sutherland, 2009). There is a distinct lack of information available concerning the numbers of UTAs employed in Canada and whether that number has increased. At the 1978 annual meeting of the American Educational

Research Association (AERA) in Toronto, Carroll (1980) commented on the extension of teaching assistant (TA) recruitment to undergraduates “for both pedagogical and budgetary reasons” (p. 167). Gordon, Henry, and Dempster (2013) mention the traditional GTA role “to staff introductory courses, to relieve faculty of grading and other administrative duties, and to provide graduate students with teaching experience,” but they add, “more recently, universities have been experimenting with the use of undergraduates in this role” (p. 103). In a 1993 report on TAs in Canadian institutions, Piccinin et al. reported that smaller institutions had a higher ratio of full-time students to GTAs (1:64, as opposed to 1:17 or 1:18 for larger institutions), and they speculate that the smaller institutions make use of UTAs to fill the gap. Osborne et al. (1997) declare the financial advantage of using UTAs without reservation: “hiring and training undergraduates to be teaching assistants is cost effective as the number of students in each class section can be increased without needing additional adjunct faculty” (p. 1).

Undergraduate students have long been employed in Canadian post-secondary classrooms as teaching assistants. Unlike the GTAs’ experiences with leading teaching activities or teaching entire courses, UTAs are most often involved in peer support for large class settings, or employed to relieve faculty members from some clerical duties (Filz & Gurung, 2013; Weidert et al., 2012). Research on the use of undergraduate teaching assistants has been focused primarily on the value of peer mentorship for learning or focused on improving student outcomes in large classes (Fingerson & Culley, 2001; Gordon, Henry, & Dempster, 2013; Marx, Martin, Ellis, & Haskell, 1978; Sana et al, 2011; Singleton-Jackson, 2008). Interest in using UTAs for faculty-directed peer support “gained momentum” in the 1960s (Goldschmid & Goldschmid, 1976, p. 9;

Whitman, 1988). In addition to the term UTA, undergraduate assistants have been known as peer tutors, peer mentors, peer assessors, peer reviewers, markers, and other designations that emphasize the focus of their duties. As supporters of their peers' learning, students' duties vary as widely as their titles; however, there are some similarities of duties that may be grouped into three categories: a) content coaching or tutoring/mentoring (usually one-on-one or in small groups), b) summative evaluation or marking, and c) formative feedback, such as peer reviewing (Falchikov & Goldfinch, 2000; Strijbos & Sluijsmans, 2010). For some peer-led activities, the peers are students enrolled in the same course, who exchange and review each other's assignments in an equal, or horizontal, power relationship. Other activities, such as content coaching or peer assessment, may be performed by undergraduate students from outside the course with a certain level of content expertise, for example, students who already passed the course or students who have been trained to mark specific assessments by the course instructor. In these cases, the relationship is less equal and more akin to the roles often performed by GTAs. Undergraduate students act as a learning support community for non-evaluative tutoring or mentoring tasks, or they relieve faculty members of clerical-type marking tasks that can be performed without a high level of expertise. For example, UTA "markers" will grade student work when the marking parameters are clearly objective, such as with multiple-choice exams, rather than marking assignments that require expert judgement. However, Hogan et al. (2007) point out that, even then, "using UTAs presents several unique ethical challenges. A UTA sees the academic work of peers and sometimes serves in a quasi-supervisory role with them" (p. 188). Not all peer-support roles and duties are equal in terms of power, and so the term *peer* may be somewhat

misleading when applied to a wide variety of roles and duties with different levels of power. In the present study, the FAW UTAs had an additional level added to the peer-support role. They were *overseeing* peer-to-peer reviewing activities between their students.

Benefits for students working as UTAs include increased awareness of the complexities of teaching a course (Hogan et al., 2007); confidence, reinforced learning of course content, and increased employability in GTA positions (Rodriguez-Sabater 2005; McKeegan, 1998; Weidert et al., 2012); funding, or in some programs with specific training, course credit or acknowledgement of professional development (Atkinson, 2016; Pugliese, Bolton, Mogyorody, Singleton-Jackson, Nelson, & Johnson, 2013; Romm, Gordon-Messer, & Kosinski-Collins, 2010). Hogan and Norcross (2012) mention that some UTAs receive neither credit nor monetary compensation for their work:

For the more broadly based UTA role, involving a variety of teaching-related duties, compensation may or may not occur. . . . this broader UTA role may be undertaken purely for the value of the experience and enhancing entry into baccalaureate-level employment or graduate school admission. (p. 4)

TA Training and Professional Development

Marx et al. (1978) reported on one of the first centralized TA training programs in Canada. They noted that, prior to the late 1970s, there was virtually no empirical research on the effectiveness of TA training (p. 2). Over the past four decades, in Canada and other Western nations, the number of centralized GTA training programs has increased substantially (Benassi & Buskist, 2012; Kenny, Watson, & Watton, 2014). The increase in programs is often tied to calls for quality assurance, and there is a growing body of

research literature dedicated to determining the efficacy of such programs (Boman, 2013; Chada, 2015; Dimitrov, Meadows, Kustra, Ackerson, Prada, Baker, Boulos, McIntyre, & Potter, 2013; Kenny et al., 2014; Parker, Ashe, Boersma, Hicks, & Bennett, 2015; Potter, Kustra, Ackerson, & Prada, 2015; Rolheiser et al., 2013).

There is less emphasis on centralized training for UTAs, although there are some indications that the situation may be changing. Several authors note the lack of information on UTAs and their training, and there is even less available research on UTAs in the Canadian context. The limited body of literature available shows that UTAs have frequently been employed as peer mentors with little-to-no training (Gordon et al., 2013; McKeegan, 1998; Sutherland, 2009). Hogan et al., 2007 state that, “typically, UTAs have functioned in limited contexts, for example, in a single course, and with little or no formal training” (p. 187). Most UTA training, when there is training, takes place on a course-by-course basis, as opposed to the centralized professional development programs available for faculty members and GTAs. The majority of articles on UTA programs are either descriptions of single-course UTA training, proposals for UTA training models, or descriptions/proposals for training courses that reward the UTAs with academic credit rather than funding (Goff & Lahme, 2003; Hodges & Brill, 2007; Hogan, et al., 2007; McKeegan, 1998; Pugliese et al., 2013; Sana et al., 2011). The frequency of reporting on UTA training programs has increased over the past decade; however, it is difficult to determine whether the number of programs has increased. Instead, it may be that the increasing body of Scholarship of Teaching and Learning (SoTL) literature has encouraged more educators to report on their individual programs. Given the limited amount of literature, and the fact that most reports of UTA training are associated with

individual courses, it is unlikely that many centralized training programs currently exist specifically for undergraduate TAs. Most programs that report training their UTAs in more than course content tend to focus on a few useful skills, such as leading small group tutorials and discussions; they remain single-course entities that typically serve larger sized classes. (Atkinson, 2016; Herrman & Waterhouse, 2010; Sana, 2011; Rodriguez-Sabater, 2005). A few exceptions have appeared in recent literature, programs offering UTAs fundamental pedagogy or instructional skills in more centralized mentoring programs that serve a variety of courses at their institutions (Gordon et al., 2013; Pugliese et al., 2015). Sutherland (2009) warns that institutions may hold false expectations about the training, experience, and expertise of their UTAs: “All the undergraduates I interviewed were hired to tutor in the same capacity, alongside, and undertaking the same duties, as graduate students and/or industry professionals who already held university degrees” (p. 149).

The recent literature on GTA professional development in pedagogy and instructional skills is extensive, growing, and beginning to include empirical studies that examine efficacy. However, the literature on, and possibly the practice of, intentionally involving UTAs in such communities of practice and professional development is in its infancy.

Approaches to Teaching

In 1995, Barr and Tagg described a *learning paradigm*, shifting the focus of educational practice away from the traditional instruction-centred model of transferring information towards a model based on research evidence about the optimal ways in which humans think and learn. The learning paradigm describes a conceptual framework

for thinking about teaching and learning in broad strokes; it suggests ways to approach teaching that focus on student learning, rather than on the activities of teaching. A teaching approach is determined by a combination of factors and may vary according to circumstances. Teachers' conceptions of teaching—based in part on their personal experiences with both learning and teaching—together with their intentions for the particular teaching situation, help to determine the strategies they will apply (Trigwell et al., 1994). “The approach adopted by a teacher in a particular context is a function of both the teacher and the context” (p. 77). A teacher's conception of teaching has implications for the approach to teaching and for student learning:

Those teachers who conceive of learning as information accumulation to meet external demands also conceive of teaching as transmitting information to students, and approach their teaching in terms of teacher-focused strategies. On the other hand, those teachers who conceive of learning as developing and changing students' conceptions, conceive of teaching in terms of helping students to develop and change their conceptions and approach their teaching in a student-focused way. (Trigwell & Prosser, 1996)

Since the learning paradigm was described in 1995, a number of researchers have supported the concept and describe teaching approaches that range from teacher-centred to learning-centred, although the terms have some variation (Biggs & Tang, 2007; Kember & Kwan, 2002; Ramsden, 2003; Richardson, 2005). In a 1999 limited empirical study, Trigwell, Prosser, and Waterhouse demonstrated a correlation between learning-focused approaches to teaching and deeper approaches to learning on the students' part, as well as a correlation between teacher-focused approaches and students' surface

approaches to learning. These early findings about the relationship between teachers' approaches to teaching and students' approaches to learning were extended by Gibbs and Coffey (2004) in a much larger study. A teacher's approach to teaching, whether teacher-focused or learning-focused, affects the students' approaches to learning, either a surface or a deep approach. In addition to that, deliberate "training" or development in teaching and learning can effect change in the teachers' approach that does, in turn, affect the students' learning approaches and that may be attributable to the training (Gibbs & Coffey, 2004). Studies have also demonstrated that a deeper approach to learning is associated with higher-quality learning outcomes (Entwistle & Ramsden, 1983; Kember & Gow, 1994; Marton & Säljö 1976; Ramsden, 1997). Together, this body of evidence creates a chain of connections that, greatly simplified, means: a learning-centered approach to teaching correlates with a deeper approach to learning that correlates with improved learning outcomes.

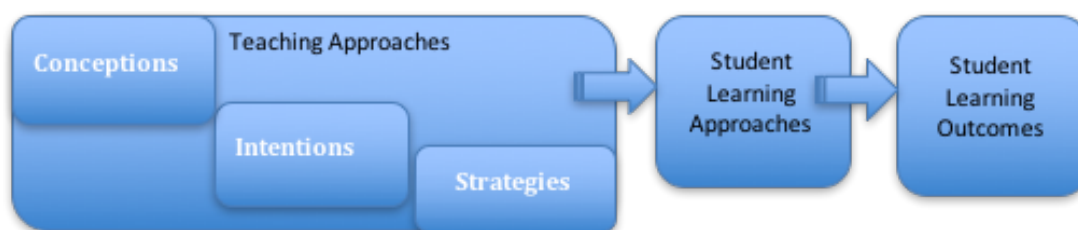


Figure 2. Teaching approaches affect student learning outcomes.

Conceptions, intentions, and strategies are components of a teaching approach. A chain of connections has been established between the teacher's approach to teaching, students' approaches to learning, and the students' learning outcomes (Entwistle & Ramsden, 1983; Gibbs & Coffey, 2004; Kember & Gow, 1994; Trigwell, Prosser, & Taylor, 1994; Trigwell, Prosser, & Waterhouse, 1999).

As Trigwell et al. (1994) put it,

The logical relationship between intention and strategy in teaching serves only to remind us again that, in the process of improving teaching through academic development, the intentions and conceptions of teachers need as much attention as strategies if any improvement in student learning is anticipated. (p. 83)

The field of academic or educational development has been strongly influenced by the learning paradigm shift, and a great deal of educational development work is centred on creating environments and encouraging the use of methods that foster learning and conceptual change, rather than methods for delivering knowledge. As noted above, considerable research now exists examining professional development in post-secondary teaching and learning. Included in this body of research are: faculty members' approaches to teaching, graduate students' perceptions of teaching efficacy, teacher candidates' conceptions of teaching, and various combinations of these. Unlike the FAW UTAs, participants in these research studies had teaching experience, professional development in teaching and learning, or both (Boman, 2008; Kember & Kwan, 2000; Potter, Kustra, Ackerson, & Prada, 2015; Stes, Gijbels, & Van Petegem, 2008; Weinstein, 1989; Woolley, Benjamin, & Woolley, 2004). Although there is a body of literature describing UTAs as peer mentors or peer tutors, and there are descriptions and benefits for many peer-to-peer activities, no research was located examining UTAs' conceptions of teaching, their intentions, approaches to teaching, nor perceptions of efficacy.

Since the ways in which teachers conceive of teaching affect their overall approaches and subsequent choices in the classroom, it follows that the UTAs' conceptions of teaching and their intentions will affect their approaches to their assigned

duties, which would in turn potentially affect the students' approaches to learning and the learning outcomes for students in the FAW program. Given the established correlations between approaches to teaching and student learning, and given that students in the FAW courses have UTAs as their primary contact teachers, it is prudent to investigate the UTAs' conceptions of the teaching tasks they have been asked to perform.

The present study was designed to investigate the UTAs' conceptions of teaching. There is a substantial body of research dedicated to approaches to teaching (Hanbury, Prosser, & Rickinson, 2008; Kember & Kwan, 2000; Norton, Richardson, Hartley, Newstead, & Mayes, 2005; Postareff, Lindblom-Ylänne, & Nevgi, 2008; Prosser & Trigwell, 1999). However, approaches to teaching are a set of deliberate choices about teaching methods and strategies based on the teacher's context, epistemological framework, intentions and conceptions about teaching. Since the UTA participants may not consider themselves teachers, they may not consider the tasks they were assigned the practice of teaching. A deliberate approach to teaching may never have occurred to them. Therefore, it was determined that a pre-cursor to the teaching approach, the concept of teaching, would be a better entry point for the present investigation. Given that every university student has been on the receiving end of teaching practice for many years, each participant was likely to have formed certain ideas and opinions—conceptions—about teaching.

Survey Instruments

No survey instrument suited to the UTA population had been found, so a new instrument, the Conceptions of Teaching Questionnaire, was created to collect data about the UTAs' conceptions of teaching and to discern whether their conceptions of teaching

changed over the course of a semester. The instrument was designed/adapted after examining five existing instruments.

The TA Self-Efficacy Scale (TSE) was designed to assess the degree to which TAs feel “confident in executing specific teaching behaviours” (Boman, 2013, p. 105). Boman created the TSE by adapting items from two other scales and adding eight new items. There are thirty-four items following the stem “how confident are you in your ability to . . .” Participants are asked to rate the items on a five-point Likert-type scale ranging from “not confident” to “completely confident” (Bowman, 2008, pp. 186-87). The TSE would have been more directly applicable to the present study had the UTAs in the FAW program been intentionally studying pedagogy, as were the TA participants in Boman’s study.

The Approaches to Teaching Inventory (ATI) was developed in 1999 as a way to collect data from larger numbers of teachers than would be reasonable using the intensive phenomenological interview method that was first used by the investigators to collect and interpret data on teaching approaches (Trigwell & Prosser, 2004). The inventory was created with a collection of 104 statements believed to represent a range of approaches from an “information transmission/teacher-focused view of teaching” to a “conceptual change/student-focused view of teaching.” The collection of statements was refined and reduced to 22, over several years and several trials (pp. 415-16). Although there have been some critiques of the instrument, mainly focused on its use in situations for which it was not devised (Meyer & Eley, 2006), the ATI is now widely used. Its validity and utility were reviewed in a large study (over 1600 teachers) in 2003 (Trigwell, Prosser, & Ginns, 2005). The Inventory was designed “to explore the relations between teachers’

approaches to teaching and the approaches to learning of students in the classes of those teachers” (Trigwell & Prosser, 2004, p. 416).

Since the goal of the present study was to inquire about the UTAs’ conceptions of teaching (one component, but not the same as an approach to teaching), statements in Lorraine Zinn’s Philosophies of Adult Education Inventory (PAEI) were also examined. The PAEI was based on the philosophies described in Elias and Merriam’s (1980) *Philosophical Foundations of Adult Education* (Conti, 2007). In both students and teachers, studies have shown that participants’ ontological and epistemological beliefs affect their intentions and actions around teaching and learning (Norton, Richardson, Hartley, Newstead, & Mayes, 2005; Otting, Zwaala, Tempelaar, & Gijsselaers, 2010; Samuelowicz & Bain, 2001). Discussing her development of the PAEI, Zinn says “When the adult educator engages in the practice of education, certain beliefs about life in general are applied to the practice. These beliefs constitute the basis for a philosophy of education” (2004, p. 40). The PAEI is made up of fifteen stems, each with five completing statements to rate on a Likert-type scale from strongly disagree to strongly agree. The depth of purposeful intention towards teaching in the PAEI statements makes this instrument less applicable to the UTAs.

The UTAs’ conceptions of teaching would have largely developed during their time as students; therefore, examining teaching and learning from the student perspective was also an important consideration. John Biggs (1987) developed the original Study Process Questionnaire (SPQ) based on Student Approaches to Learning theory. The SPQ was revised in 2001 to become the Two Factor Study Process Questionnaire (R-SPQ-2F). Both are based in a framework that contrasts deep and surface approaches to learning

(Biggs, Kember, & Leung, 2001). The R-SPQ-2F is designed “to reflect students’ reactions to teaching in terms of their approaches to learning” (Biggs & Tang, 2007, p. 255). The revised version has only twenty statements to be rated on a Likert-type scale consisting of: 1. never or only rarely true of me; 2. sometimes true of me; 3. true of me about half the time; 4. frequently true of me; 5. always or almost always true of me (Biggs et al., 2001, p.148).

Chan and Eliot (2004) designed an instrument for use with teacher education students, relating the students’ epistemological beliefs to their conceptions about teaching and learning. The Teaching and Learning Conceptions Questionnaire (TLCQ) was based on two different conceptions the authors refer to as “traditional” and “constructivist” (p. 821). Like many similar instruments, the TLCQ was based on models previously developed by other researchers, and then adapted for a new context or to ask slightly different questions. Analysis of a study using the TLCQ on teacher education students in Hong Kong (Chan & Elliott, 2002) revealed that students did not believe exclusively in either the traditional or constructivist conceptions about teaching and learning; the study showed an intermingling of both. The authors suggest the possibility that it “might be due to the impact of their past learning experience and an exposure to new perspectives in education encountered in their teacher education program” (p. 828). One limitation to the applicability of the Chan and Eliot study is the differences in the populations to be surveyed. Teacher education students purposefully study pedagogy, whereas the FAW UTAs did not, and the differences in the teacher education systems in Hong Kong and Canada may also have had an effect.

Following Prosser and Trigwell's 1999 development of the first ATI, numerous studies, using that or similar instruments, have confirmed a spectrum of "approaches," "beliefs," "intentions," "conceptions," "understandings," etc. of teaching that range from teacher-focused to learning-focused. The range is variously described, as "transmissive" vs. "facilitative," or "content-focused" vs. "learning-focused," or "traditional" vs. "constructivist," or "transfer-focused" vs. "conceptual change-focused" (Chan & Elliot, 2004; Kember & Kwan, 2000; Lindblom-Ylänne, Trigwell, Nevgi, & Ashwin, 2006; Postareff et al., 2008). Åkerlind (2004) notes that her study results are "in line" with previous studies when they too show the established pattern:

In line with previous research investigating academics' understandings of what they do as teachers, the research reported here shows a key variation in ways of experiencing teaching, from a primarily teacher-focused to a primarily student-focused experience. Again, in line with other studies, as part of the most teacher-focused experience of being a university teacher found in this study (the teacher transmission focused category) is a view of students as passive recipients of knowledge or facts, and of teachers as providing knowledge that is transferred to students. Conversely, as part of the most student-focused experience of being a teacher (the student learning focused category) is a view of students as active creators of their own learning, including the potential for learning outcomes that extend beyond the subject studied to include developmental changes for students in their understanding of themselves and others. (p. 372)

Although it may appear that these many binaries are overly simplistic, they form a launching point for studies that extend our knowledge of the connections between

teaching conceptions and approaches and other factors, such as previous experience, intention, training, motivation, and learning approaches.

Stages of Concern

Francis Fuller developed the *stages of concern* model in 1969. She was interested in the discrepancy she had noticed between the stated concerns of beginning teachers and the material being covered in teacher education programs. “Education courses may be answering quite well questions students are not asking” (Fuller, p. 208). She reviewed the data from a large number of studies dealing with beginning teachers’ concerns and problems and concluded that, quite consistently, the beginning teachers mentioned a similar small group of concerns. She also noted the beginning teachers’ consistency in neglecting to express concern “about topics which are usually included in educational courses” (p. 210). She found the consistency on both sides of the question “remarkable” given the diversity of populations involved in the studies she had examined (p. 210).

Fuller designed a three-part research project in the hopes of finding a “useful way” to conceptualize the developing concerns of teachers (p. 208). She first conducted an intensive qualitative study with a small group of prospective teachers over the course of a student teaching semester. She then conducted surveys with a larger group of student teachers at two-week intervals over the course of a semester. Finally, she regrouped and analysed data from surveys by various researchers who were working independently from one another. Based on her analysis of the data from all three studies, Fuller theorized that teachers’ concerns develop along similar lines according to the phase of teaching practice in which they are immersed. In Fuller’s stages of concern model, the concerns of teachers can be loosely grouped into three categories: a pre-teaching phase of Non-

concern, an early teaching phase of Concern with Self, and a later phase of Concern with Pupils (pp. 218-221). These categories describe a three-phase developmental sequence through which teachers pass as they move from pre-teaching through greater experience in the classroom (p. 221).

Fuller proposed her hypothetical model of teacher development accompanied by many questions, some of which are directly relevant to the research questions in the present study, for example: “is concern phase a function of the person, of the situation or of both,” “do individuals as well as groups go through these phases,” and “can changes toward concerns with pupils be encouraged by treatment?” (pp. 222-223).

More recently, researchers (some of whom do not mention Fuller) have suggested “stages,” similar to hers. These several variations often have more than three stages and may use different terms or extend the framework, but movement through the stages generally parallels movement from teacher-centered to learning-centered orientations (Conway & Clark, 2003; Hall & Hord, 2001; Kugel, 1993).

The research literature mentioned in this chapter forms the context for the present exploratory study. It covers changes affecting Canadian and other Western post-secondary institutions that may have influenced recent shifting roles for teaching assistants. Noting the differences between the traditional roles and tasks assigned to graduate students, versus undergraduate students, establishes the background for exploring the newer roles and responsibilities assigned to UTAs in the present study. Although Fuller first proposed transitional phases for teachers-in-training in the 1960s, her stages of concern model, that describes change over time, is not unlike the more recent paradigm shift from teacher-oriented to learning-oriented approaches to teaching

(Barr & Tagg, 1995). These early models have been largely affirmed by more recent research that indicates changes or transitional phases along these lines are prevalent amongst instructors who undergo deliberate professional development in teaching and learning. The literature around conceptions of teaching, approaches to teaching, perceptions of efficacy, and so forth is extensive; however, a gap was noted, as none of the participants in this body of research were undergraduate students with no involvement in deliberate training.

Given that the survey instruments described in this chapter, employed in recent studies, were potentially ill-suited to the UTA participants in the present study, a new instrument was created. The survey instrument, based on but adapted from existing instruments, is described in the following chapter on methods and methodology. Details of the research design and implementation, as well as the frameworks within which the data was analysed are also described.

Chapter 3: Methods and Methodology

Overview: The Research Design

This repeated measures, multistage, mixed methods study involved both surveys and interviews. It was a sequential design, with specified interaction between the sets of data at two stages in the collection process (Figures 1 and 3).

For an effective research design, the purpose of the research should shape the research questions, and then the questions should shape the methodology (Bryman, 2007; Creswell & Plano Clark, 2007; Teddlie & Tashakkori, 2011). The purpose of this study was to explore the UTAs' conceptions of teaching, in part by examining how they interpret their teaching tasks in FAW and how, lacking any training in pedagogy, they might approach those tasks. Multiple questions about UTAs in the FAW context were refined to the following:

1. What are the UTAs' conceptions of teaching *prior* to teaching?
2. What changes take place in the UTAs' conceptions of teaching *during* the 13-week semester experience?
3. What are the UTAs' beliefs about the relationship between their own past student experiences, their current teaching experiences, and any *changes* that may have occurred during the semester in their conceptions of teaching?

The three research questions could not be fully answered by a survey. However, with an initial set of survey responses in hand to guide and inform interviews, the additional qualitative data offered a more thorough description of the UTAs' concepts prior to the experience of teaching. After the semester-long teaching experience, identical questions, reordered, were used in the second survey. A comparison of the first and

second set of questionnaire responses informed the second set of interviews. The design was intended to explore the UTAs' pre-conceptions of teaching, change in their conceptions over time, their experiences, and to some degree, their interpretations of change in their conceptions of teaching.

Researcher Position

Twenty-first century researchers are working in a time of evolving paradigms amidst a multiplicity of suggested—and contested—terms and definitions for approaches to conducting, analyzing, and interpreting research. According to Denzin and Lincoln (2005), we are in (or beyond) the “eighth moment” of evolving research phases, and *moment* is a particularly apt term because the phases they describe become notably shorter as they proliferate, from several decades to fewer than five years. Savin-Baden and Major (2013) describe a “liquid evolution” in which post-positivist inquiry is in a time of ongoing development and refinement (p.10). The era of rapid communication and unprecedented reach has given us so many voices offering taxonomies, tables, and descriptions for ontological, epistemological stances with accompanying methodologies that it becomes challenging for any modern researcher to declare positionality without numerous caveats. Hay (2005) states:

It is not easy to establish how and why one comes to hold the ontological assumptions one does – how one comes to view the world the way one does. What is, I think, clear however is that a variety of influences are potentially significant – many of these are experiential (and hence in no small part empirical), yet others are clearly normative, whilst others can perhaps only be labelled intuitive. (p. 41)

It is relatively uncontested in qualitative research literature that the beliefs and values of the researcher can affect qualitative and even quantitative results and reportage. As Hay mentions, many influences affect our assumptions, as well as our belief systems and our values. Mine have been influenced by a family background in the positivist Western science paradigm, subsequent education in classics and humanities, further education in educational research, and life experiences in Western middle-class settings and academic institutions. Ontologically, I identify with a kind of *subtle realism* (Blaikie, 2007), subscribing to the idea that reality exists beyond our empirical experience of it and independent of our cognitive or social interpretations of it; however, our relationship with reality, and our communications with each other concerning reality, is biased by the limitations of our interpretations.

My epistemological stance is broadly interpretivist and grounded in constructivism and social constructionism. Ormston, Spencer, Barnard, and Snape (2014) define *interpretivism* as the claim that:

natural science methods are not appropriate for social investigation because the social world is not governed by regularities that hold law-like properties. Hence, a social researcher has to explore and understand the social world through the participants' and their own perspectives; and explanations can only be offered at the level of meaning rather than cause. (p. 24)

My approach to the present study employs both constructivist and social constructionist lenses for interpreting the data. Guterman (2006) offers a concise description of the focus of each: "Although constructivism and social constructionism both endorse a subjectivist view of knowledge, the former emphasizes individuals' biological and cognitive

processes, whereas the latter places knowledge in the domain of social interchange (p. 13). The UTAs made meaning from the combination of their past experiences as students and their current experiences teaching. Their individual perceptions of and reactions to their circumstances had interplay with their preconceived notions about both teaching and learning—notions they inherited as social constructs and value-laden beliefs. So, the UTAs constructed new knowledge, based on their perceptions and individual experiences over the semester by building upon their pre-existing knowledge (constructivism). Yet, their pre-existing knowledge base was not merely the product of the individual UTA's conceptions of the world; they had inherited concepts, values, and beliefs that framed their thinking and the pre-existing socially constructed norms accompanying those constructs (social constructionism). Edith Ackermann (2001), in a paper that delineates the theoretical perspectives of Piaget and Paupert, has this to say about the interplay of constructivism and constructionism: "beyond the mere play on the words, I think the distinction holds, and that integrating both views can enrich our understanding of how people learn and grow" (p. 438).

My stance is additionally a pragmatic one, in that I believe it is essential to bear in mind the empirical and practical consequences of specific interpretations. Johnson and Onwuegbuzie (2004) point out that the pragmatist philosophers Pierce, James, and Dewey all examined the practical consequences of philosophical stances in order to judge the meaning of an idea or action (p. 17). Pragmatism is often associated with mixed methods designs (Bryman, 2006; Creswell, 2003; Creswell & Plano-Clark, 2007; Teddlie & Tashakkori, 2011). Snape and Spencer (2003) describe the connection this way:

We align ourselves with other pragmatists because we believe in the value of choosing the most appropriate research method or methods to address specific research questions. We are more interested in ensuring a suitable “fit” between the research methods used and the research questions posed than we are in the degree of philosophical coherence of the epistemological positions typically associated with different research methods. We believe that quality and rigour in research practice have more to do with choosing the right research tools for the job than with limiting ourselves to combining only those research methods which are viewed as philosophically consistent.

This means that we are happy to combine qualitative and quantitative methods in the same study where this is viewed as necessary and helpful in answering the research questions posed. We acknowledge that qualitative and quantitative data do not calibrate exactly, but see this as a manifestation of the different ways in which each method contributes to an understanding of the research question. Inconsistency and contradiction need to be acknowledged and explanations for them sought, but we do not believe this undermines the value of either. (p. 23)

Johnson (2009) coined the term *dialogical pragmatism* to describe a necessary component of the integrative practice in mixed methods research. He uses the term to emphasize that “mixed methods researchers must carefully listen to, consider, and engage in dialogue with qualitative and quantitative perspectives, and learn from the natural tensions between the two perspectives, when developing a workable solution for a mixed methods research study” (p. 456). It was Johnson, along with Onwuegbuzie and Turner

(2007), who pointed out that “evaluation as a field” has moved more quickly into a practical form of mixed methods research than either psychology or educational research (p. 116).

For the past few decades, and increasingly in recent years, approaches, strategies, and methods for conducting qualitative research have been explored and refined and new categories created: ethnography, phenomenology, phenomenography, discourse analysis, grounded theory, etc. Methodologies and approaches have been grouped into new research “traditions,” partly based on the disciplines out of which they grew (i.e., sociology, anthropology, philosophy, psychology, education, and interdisciplinary combinations) and partly based on the exigencies of the research at hand (Creswell, 2003; Denzin, & Lincoln, 2000; Ormston, Spencer, Barnard, & Snape, 2014). In some cases, methodological descriptions and research strategy boundaries have been hotly contested. I view these scholarly disputes as the inevitable growing pains brought about by many researchers’ and theorists’ genuine concern for quality in research methods.

Design Framework and Data Integration

Fetters, Curry, and Creswell (2013) recommend planning the integration of methods early in the design and then following through with integration during data collection and interpretation. They describe various frameworks for mixed-methods designs and various methods for integrating data for interpretation in each of these frameworks. The present study was conceived and designed with integration in mind and employed a multistage framework: not only was data collected at four different points, but integration of datasets for interpretation also took place in stages. Fetters et al. mention that the multistage framework “may be used in longitudinal studies focused on

evaluating the design, implementation, and assessment of a program or intervention” (p. 2137). As mentioned in the Introduction, a thorough program review had not been conducted, and a full review of FAW was beyond the scope of the present study; however, this initial exploration of selected aspects of the new FAW program was designed and conducted using frameworks and methods similar to those that are used for program reviews.

The data in the present study were integrated three ways, as described by Fetters et al. (2013) and by Creswell and Plano-Clark (2011). The methods used for integration were: *connecting*, *building*, and *merging*. For integration purposes, connecting simply means that the groups of participants involved in the quantitative data collection are connected to the participants involved in the qualitative data collection. In the present study, interview participants were a random sample drawn from the pool of survey participants; connected in this way, their data was available for integration during interpretive stages. Building for integration during interpretation means that one type of data informs the approach to collecting the other type of data. In the present study, the building method for integration was used during data collection because the interview guides were partially informed by the survey data. Thus, the process of interview data collection was informed by (i.e., able to build upon) data from the surveys at two different collection points. The third method used for integrating the data for interpretation, merging, took place after the quantitative and qualitative data underwent separate analytic processes. In the present study, merging involved using quantitative results from comparing the two sets of survey data to inform interpretation of interview data analysis and vice versa (Fetters et al., 2013, pp. 2139-41; Creswell & Plano-Clark,

2011, pp. 233-238).

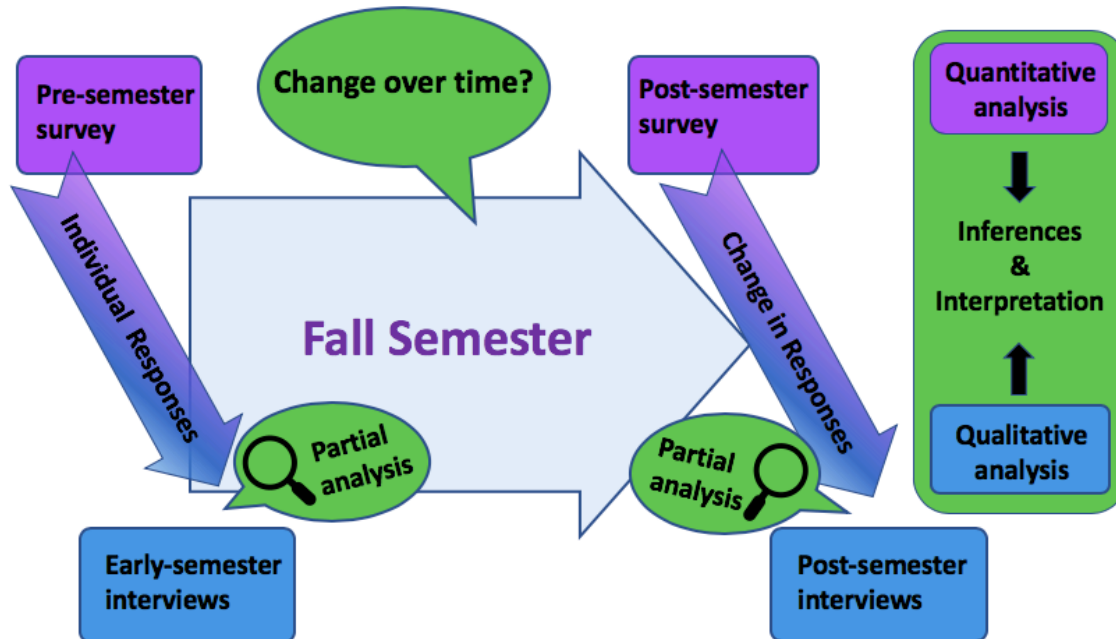


Figure 3. Expanded research design.

Participants

Participants were drawn from a small pool: 30 undergraduate teaching assistants who were hired in the fall semester of 2013 to assist with the University's two Foundations of Academic Writing program courses, known as FAW I and FAW II. All 30 UTAs agreed to participate in the research study. One UTA left the FAW program after completing the initial questionnaire, but the remaining 29 participants completed the study.

The UTAs' disciplinary backgrounds were related to the hiring criteria. The UTAs came from a variety of disciplines, although the majority were enrolled in the Faculty of Arts, Humanities, and Social Sciences (FAHSS). Figure 4 illustrates the broad range of disciplines the UTAs were studying while acting as teaching assistants in the FAW Program. The Foundations of Academic Writing courses were mandatory for all

students in FAHSS. When UTAs were screened for hiring, those who had taken and passed both FAW courses at a high level were strongly preferred. There were occasional exceptions, although a strong record of academic achievement was required in those rare cases. Some participants had no previous experience as teaching assistants, some had been UTAs in other courses, and some had previous experience assisting in FAW. These two areas of difference between the UTA participants, their fields of study and their levels of previous experience, were examined as potential variables in the subsequent data analysis (Table 1).

All FAW TAs were undergraduates; none of them were in their first year of study, but some were beginning their second year of university at the time of the present study.

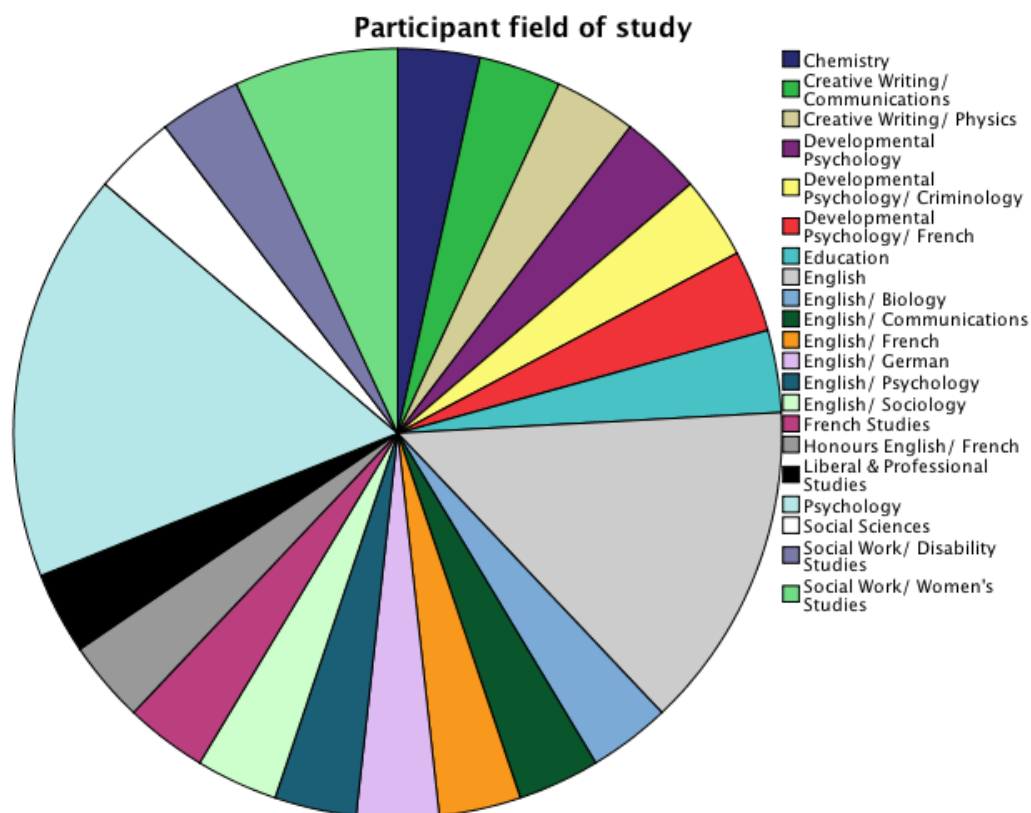


Figure 4. Range of participants' fields of study.

Program Logistics

In the FAW context, the UTAs followed a previously determined syllabus with standardized methods and timetables (Singleton-Jackson & Colella, 2012). Their teaching tasks had some room for flexibility within that framework; however, the course design pre-determined at least some parts of the program's overall approach.

The program's two courses were divided into sections of approximately 400 students, and sections were further divided into large classes of approximately 80 students for FAW I and 50 students for FAW II. The sections were overseen by two or three supervising instructors, and individual classes were overseen by UTAs. The courses were offered in each of the University's three semesters, so some of the UTAs were repeat hires; for example, an undergraduate student assisting with FAW I in one semester might be re-hired to assist with FAW II in the following semester. Chapter 1 has a more detailed description of the FAW context in which the present study took place.

Survey Instrument Design

The survey questionnaires for the present study were designed to collect data about the UTAs' conceptions of teaching and to discern whether their conceptions changed over the course of one semester's UTA duties. Originally, the intention was to use a previously established survey instrument to collect this data from the UTA participants. Of the many existing survey instruments, five were examined closely: The TA Self-Efficacy Scale (TSE), the Approaches to Teaching Inventory (ATI), the Philosophies of Adult Education Inventory (PAEI), the Revised Two Factor Study Process Questionnaire (R-SPQ-2F), and the Teaching and Learning Conceptions Questionnaire (TLCQ). The literature review chapter has a more in-depth discussion of

these instruments. In general, these survey questionnaires are used for comparisons between groups in different contexts or to compare a group's responses before and after an intervention. The instruments were each revised after feedback from respondents and after factor analyses were conducted with results from several groups. Some of the more well-established instruments, such as the ATI, were designed and revised using phenomenography. Trigwell, Prosser, and Ginns (2005), reviewing the ATI after several years of research studies using the instrument, describe their process this way: "The aim of the phenomenographic pedagogy process is to raise teachers' awareness of their thinking and practice and on how variation in this practice might be related to their students' approaches to learning" (p. 350). The aim of the present study was slightly different: instead of "raising awareness" amongst a group of experienced instructors or teachers-in-training, the aim was to explore conceptions about teaching amongst a group of untrained undergraduate students. Thus, the present exploratory study called for a process and qualitative analysis that differed somewhat from the approaches and analyses used to revise the five established survey instruments. In each of the five previously existing surveys, the instrument was designed to measure a slightly different perspective on teaching or learning. However, the instruments designed for measuring teaching approaches were intended for participants who had some prior teaching experience or at least some pedagogical training. These instruments ask respondents to rate statements about teaching approaches, philosophies, or in one case, conceptions of teaching. In every established questionnaire, it was implicit that the respondents would already have formed ideas and opinions around the concept of teaching and its accompanying skills and activities, based on training, teaching experience, or both.

In the FAW program, the UTAs were unlikely to have prior teaching experience, and so there was reason to doubt that they had yet developed teaching philosophies, or even purposeful approaches to teaching. The FAW UTAs were most likely situated in a different, earlier developmental stage of pedagogical knowledge or practice than the populations for whom the established instruments had been devised. Thus, the suitability of any of the established instruments was in question.

In the present study, the subtle, but important, differences between approaches to teaching, philosophies of teaching, and conceptions of teaching affected decisions about phrasing the survey question items. A cluster of ideas as complex as “teaching” requires an initial mental description, a personal definition or conception, before purposeful approaches can be established. A teacher with some experience, or an individual new to teaching with some training in pedagogy, may begin to establish a theoretical stance or philosophy about teaching. An individual possessing a concept of teaching may begin to establish a purposeful approach towards the activities involved in teaching. The UTA participants, especially those who were first-timers, were unlikely to have given the concept of teaching much consideration. The UTAs’ upcoming responsibilities would include many of the same skill-sets required of professors: assessing assignments, offering feedback, explaining content, leading students through their peer-to-peer activities, answering questions, etc. However, this group of undergraduate TAs, who were not taking part in a pedagogical training program and had not established identities as teacher candidates, may not have considered the UTA role a teaching role, nor considered their requisite UTA tasks as “teaching.”

Statements used in instruments such as the Approaches to Teaching Inventory (Trigwell & Prosser, 2004) or the Philosophy of Adult Education Inventory (Zinn, 1983b), imply a level of intentional focus on pedagogy that was not suited to the context and experience level of the FAW UTA population. For example, on a Likert-type scale, respondents rate statements such as: “In planning an educational activity, I am most likely to assess learners needs and develop valid learning activities based on those needs” (Zinn, 1983a; 1983b), or “I encourage students to restructure their existing knowledge in terms of the new way of thinking about the subject they will develop” (Trigwell & Prosser, 2004, p. 424). Given the UTAs’ early stage of pedagogical development, compared to the levels of development in the established instruments’ target populations, it was more relevant to measure the UTAs’ conceptions of teaching, rather than their approaches to, or philosophies about, teaching. Although one of the established instruments, the Teaching and Learning Conceptions Questionnaire (TLCQ), was designed to measure conceptions, it was intended for use with teacher education students, individuals who have been purposefully studying pedagogy (Chan & Elliot, 2004).

The survey questionnaire designed for the present study was based on statements about teaching drawn from established instruments, such as the five mentioned above and described in more detail in the literature review. Statements from those instruments refer to specific aspects of teaching or learning, and statements from different surveys were often similar, or overlapped. Similar statements were grouped into categories covering a wide spectrum of philosophies, approaches, and conceptions about teaching. From the combined and categorized group of teaching statements, a broad sample was extrapolated representing either end of the teacher-focused to learning-focused continuum. Based on

those sample statements, a set of revised statements was constructed in which the language was more geared towards “What is teaching?” than “How do you teach?”

Two colleagues who were familiar with teaching inventories, having used them in their own teaching and research, assessed the questionnaire items. They coded them with a “T” for teacher-focused and an “L” for learning-focused. Their coding aligned with the survey key on all but two statements, so those statements were revised to increase clarity before the new survey instrument was distributed to the UTAs.

Data Collection Procedures

Data collection took place in four stages, two surveys and two sets of interviews (Figure 1). A survey questionnaire was administered to UTA participants immediately prior to the fall semester and again post-semester (see Appendix A). From the pool of survey participants, 10 UTAs were selected at random to participate in early-semester and post-semester interviews. Interviews were semi-structured. As mentioned above, at pre-determined points, partial analysis of the data informed the next stage of data collection. The guide for the first set of interview questions (Appendix B) was informed by participants’ responses from the pre-semester survey, and the second set of interview questions (Appendix C) was informed by initial comparisons between the pre- and post-semester surveys, as well as by each participant’s responses from the early-semester interviews. Although time constraints in the data collection schedule precluded a more robust analysis of data at these stages, the study was designed so that initial comparisons would lead to better integration of the two methods in the design structure as described above (Fetters et al., 2013).

The University's Research Ethics Board granted approval for the study just prior to the beginning of the 2013 fall semester. Then, prior to a mandatory four-hour orientation about the FAW program, UTAs who had been hired to assist with the FAW courses received an email invitation to participate in the research study. The email briefly informed them about the study, invited them to participate, and mentioned that more information would be available at the FAW orientation. Near the end of that orientation, the UTAs were offered more information and an opportunity to ask questions about the study. Questionnaires and accompanying information and consent forms were passed out in manila envelopes. UTAs who chose to remain and consider participating in the research were instructed to read the consent form and ask any questions they might have after reading the form. Since all potential participants were gathered in one room, the manila envelopes were intended to protect the identities of those UTAs who chose to participate in the research. Peers in the room could not distinguish those who filled out the questionnaire from those who merely read the questionnaire and declined to sign a consent form. Copies of the email invitation, the script for the orientation address, and information and consent forms are in Appendices D, E, and F.

Each UTA in the FAW program was responsible for holding one office hour per week in a large shared office. During their individual office hour times in the final week of classes, participants from the initial survey were asked if they would be willing to complete the second survey questionnaire. The second questionnaire was composed of the same set of questions, but the order was changed. One UTA who completed the initial questionnaire had left the FAW program, but a total of 29 pairs of pre-semester and post-semester questionnaires were collected.

Interviews

When the initial survey data had been collected, code numbers were assigned to the 30 survey participants, and 10 of those numbers were drawn at random¹ by two colleagues from the University who were not associated with the research. The 10 participants whose names had been drawn were contacted by email and invited to participate in interview sessions. Interview participants each received a USB flash drive, and they were entered in a draw to win an iPad mini. Appointments were scheduled and, prior to each interview, that participant's questionnaire responses were used to inform portions of the interview guide.

Interviews were held and audio recorded in a quiet basement office on campus. During the first set of interviews, each participant's pre-semester questionnaire was at hand for reference. All 10 participants agreed to a second interview after the semester's end, so a total of 20 interviews were collected and transcribed. Prior to the second set of interviews, each participant's individual pre- and post-semester survey responses were compared and entered in a table. The comparison tables were at hand during the post-semester interviews, and a substantial portion of the second set of interviews was devoted to asking participants about changes in their pre- and post-semester survey responses. Occasionally, a participant was surprised when reminded of her pre-semester response to a question, and the original questionnaires were made available to those participants during the interview (see interview guides in Appendices B and C).

¹ There were 30 participants in the first survey and each was assigned a number. Slips of paper with the numbers folded inside were placed in a bowl, and two colleagues from the University took turns plucking a slip of paper from the bowl until ten names were selected. The one participant who subsequently left the FAW program was not selected.

Transcription

Interviews were transcribed with the aid of Dragon Naturally Speaking voice-recognition software. During the three-phase transcription process, audio files were frequently stopped and reviewed for accuracy. The first set of transcriptions included every utterance. Notations were added about the participants' use of emphasis, pauses, laughter, sarcasm, etc. Then, a set of transcriptions was edited for clarity, so that participants could read their own pair of interviews. In the edited set of transcripts, most of the notations were removed, but a few were retained in parentheses, such as [laughs], or ellipses to indicate a pause. Many of the place-holder utterances, such as "um," "uh," "you know," and "like" were removed for readability; any words or sounds deemed to make a meaningful contribution were retained.

The edited set of transcripts was sent by email to participants, in a password-protected format, with a request to check the transcripts for accuracy. Two participants responded, noting typographical errors, but no participants responded negatively to the accuracy check.

Quantitative Analysis

Survey data were tabulated in MS Excel spreadsheets for sorting and counting, and then entered in SPSS v23 for conducting statistical tests. Since the research questions involved change over time, the data included two independent variables, responses to the pre-semester questionnaire ($N = 29$) and responses to the post-semester questionnaire ($N = 29$). The survey questions were categorized by Focus (either *teacher-oriented* focus or *learning-oriented* focus). Although the questionnaire employed two different item stems, the stems were not intended to act as categories. Question items were worded in terms of

actions or teaching tasks, regardless of the stem, and each stem had an equal number of items in the two Focus categories (Appendix A). Focus categories were further divided into five sub-categories: *Classroom Management* and *Course Content* were in the teacher-oriented Focus, and *Modelling for Students*, *Student Needs*, and *Student Endeavours* were in the learning-oriented Focus (Table 2). For some tests, participants were grouped according to their previous UTA experience or non-experience and by their fields of study (Table 1).

Given that the survey instrument was a new design, it was appropriate to conduct a reliability analysis using Cronbach's Alpha. After confirming the internal consistency of the survey response data, composite response scores for the factors were calculated.

Shapiro-Wilk normality tests were conducted on the composite scores to check the distributional assumptions. Once the appropriate assumptions were met, a two-tailed, paired *t*-test was conducted to compare mean responses over all questions for change from the pre-semester survey (Survey 1) to the post-semester survey (Survey 2).

Levene's tests for homogeneity were conducted to check the assumption of equal variance for analyses of variance (ANOVAs).

For some pre-test/post-test research designs, an analysis of covariance (ANCOVA) might be an appropriate test, but the repeated measures ANOVA and the ANCOVA answer slightly different research questions. Since the research questions in the present study focus on *change over time*, rather than on the *differences in response*, the repeated measures ANOVA was the more appropriate test (Grace-Martin, 2013).

Two-way repeated measures ANOVAs were conducted to test change in composite mean scores over time by Focus (teacher-oriented or learning-oriented). The

sphericity assumption was met for Focus, but was not met for the Focus sub-categories, and the Greenhouse-Geisser correction to the degrees of freedom was applied.

A mixed repeated measures ANOVA was conducted using a combination of the within-subjects factors Time (Survey 1 or Survey 2) and Focus (teacher-oriented vs. learning-oriented), and the between-subjects factor Experience (any UTA experience vs. no UTA experience). A second mixed repeated measures ANOVA was conducted with Time and Focus, but using Field of Study (English or Languages vs. Other) as the between-subjects factor.

In a repeated measures design, comparison of the group's responses from pre-test to post-test may be biased by differences in the pre-test distribution (Dimitrov & Rumrill, 2003; Hennig, Müllensiefen, & Bargmann, 2010). In the present study, very few participants answered any of the Survey 1 question items with a 1 "not very important" or a 2 "slightly important" on the Likert-type scale. Therefore, comparison with the Survey 2 data needed adjustment to account for the left-skewed data in Survey 1 (Figure 5). Due to the limited range of pre-test responses on the 1-5 Likert-type scale, a final set of quantitative tests was conducted employing a conditional, non-parametric, relative change method: the *Post-stratified Relative Change Scores (PRCS)* method, as laid out in Hennig, Müllensiefen, and Bargmann (2010). In the PRCS method, mean post-test values are calculated conditional on the pre-test values. The test statistic, \bar{D} , is a weighted difference between the mean post-test results for the two factor levels being compared and has an approximate t distribution (Hennig et al., 2010). The weight of a score is determined by the number of times each individual participant responded to a question with a particular value in the pre-test. For example, if an individual participant responded

with a “3” more often than with a “1,” the “3” response would be given more weight. For this test, there is an assumption that participants view the intervals between the response numbers as equal. In the present study, a one-sample *t*-test was therefore used to answer the question: are the changes in question responses from Survey 1 to Survey 2 different for Focus (teacher-oriented versus learning-oriented)?

Excel pivot tables were employed to calculate mean Survey 2 responses for each possible Survey 1 response, for each participant. From the pivot table, \bar{D} was calculated for each participant, to test the effect of the limited range of answers on mean changes in individual question responses for teacher-oriented and learning-oriented Focus over all participants. The \bar{D} values were then analysed with a one-sample *t*-test in SPSS.

When discussing the power of different tests on controlling for bias in pre-test scores, Dimitrov and Rumrill (2003) state “the power of the test represents the probability of detecting differences between the groups being compared when such differences exist.” Hennig et al. (2010) argue that the PRCS is a more powerful test for such conditions as are in the present study.

Framework Analysis

Interview transcripts were examined using *Framework Analysis*, a method first developed in the 1980s by “a specialist qualitative research unit” based within a British institute, now the National Centre for Research Methods, where applied policy research is “undertaken on behalf of central or local government, voluntary organizations, universities, or other public bodies” (Ritchie & Spencer, 1994/2002, p. 173; see also NCRM, 2015, p. 2002). Framework Analysis has been used for applied policy research because it can identify issues and needs in advance of development, change, or

implementation in new programs. Spencer, Ritchie, Lewis, & Dillon (2003) state that it can be used “to examine an issue or problem that is poorly understood or to inform the kind of intervention required” (p. 3). Since the FAW program was relatively new, and it appeared that UTAs were asked to take on more than the traditional teaching assistant roles and tasks, framework analysis had the potential to highlight previously unidentified programmatic issues, gaps, or UTA needs or interventions in advance of a full program review. Ritchie and Spencer (2003), discussing Framework Analysis for program evaluation, claim “the framework will be relevant for a range of types of qualitative evaluations including practice evaluation, policy development and appraisal as well as evaluations of particular interventions, schemes or programmes” (p. 5).

Framework analysis takes place in five stages: familiarization, identifying a thematic framework, indexing, charting, and mapping and interpretation. Ritchie and Spencer (1994/2002) are careful to point out that these five stages are interconnected rather than strictly linear and that the researcher will move back and forth between stages as meaning and connections are reworked (p. 186).

The rationale for using framework analysis lies in both the method’s versatility and its suitability for applied policy research. Spencer et al. (2003), in their discussion of the range of possible uses for qualitative research, mention some of the factors that must be identified when evaluating “programmes, services or interventions” (p. 3):

These include identifying the factors that contribute to successful or unsuccessful delivery; identifying outcomes (intended or unintended) and how they occur; examining the nature of requirements of different groups within the target

population; exploring the contexts in which policies operate; and exploring organisational aspects of delivery. (p. 3)

Framework analysis is a versatile, transparent, and explicitly documented approach to analysing data (Pope, Ziebland, & Mays, 2000; Smith & Firth, 2011). Unlike some methods of qualitative analysis, all the original data is retained in formats that permit the identification and retrieval of granular pieces of data. Framework analysis also permits easy access to analytical processes and stages for replication and/or subsequent studies.

The accessibility and easy retrieval of data used in framework analysis is partly a function of the relatively new data organizing software programs in development around the same time that the framework analysis method was developed. Richards and Richards (2002), in a chapter describing one such early design for electronic data organization, mention that “the methodological implications of controlling techniques are seldom considered” (p. 147). They emphasize the need for constructing ways to directly connect the researchers’ evolving ideas and insights directly to the data that generate or inspire those ideas. They discuss the methodological implications of “jettisoning” the data once categories have been constructed and ordered, the [then] practice of qualitative researchers using classic grounded theory (p. 150). They argue that theorizing as well as analysis is involved in decision making during the coding and indexing processes, that they are not sequential stages.

The data documents seemed increasingly distant and dead, killed off by the coding process. This effect had not been so pronounced in smaller projects, where records could be known and reviewed constantly. Now, the filing system segmented documents and ripped segments from context. It became evident that

we needed techniques to reinstate context and retain knowledge of the multiple meanings of any segment. (p. 151)

Ritchie and Spencer (1994/2002) explain that framework analysis is often used when qualitative data has “some kind of linkage to statistical inquiry (i.e., to help, develop, illuminate, explain or qualify statistical research)” and that the method’s transparency is important for stakeholders who may make decisions based on the findings (p. 175). This is in line with Richards and Richards (2002) argument that “nothing is to be jettisoned if it might later be useful” and the importance of “a particular approach to theory testing, the ability to produce all the evidence to validate claims about it” (p. 150).

Since its development, the framework analysis method has been refined and used in a variety of fields, including health, social care, and educational research. Pope, Ziebland, and Mays (2000) mention that framework analysis tends to be more structured, more explicit, and more informed by a priori reasoning than some other qualitative methods. Archer, Maylor, Osgoode, and Read (2005) describe framework analysis as “particularly useful to ensure that the analysis is grounded in the experiences and opinions of the sample” (p. 30). Srivastava and Thomson (2009) note that framework analysis is similar to grounded theory but differs in emphasis, “although framework analysis may generate theories, the prime concern is to describe and interpret what is happening in a particular setting” (p. 73). Smith and Firth (2011), comparing the method to thematic analysis, find that the systematic, interconnected stages of framework analysis can mitigate concerns about subjective or fragmented interpretations of data. “Ensuring data analysis is explicitly described enhances the credibility of the findings” (p. 53).

The specific qualities of framework analysis make it well suited to the study of UTAs' conceptions of teaching. The method is grounded in the original expressions of participants. It allows for deeper illumination of statistical data. It is dynamic and versatile for within- and across-case comparisons. It is comprehensive with systematic, replicable stages, and it is transparent for both ease of data retrieval and for ease of access to the analytical processes (Smith & Firth, 2011; Srivastava & Thomson, 2009). These are valuable qualities for research that is a preliminary foray into a potentially larger project of program review and policy evaluation.

This research study was intended to explore conceptions of teaching by undergraduate teaching assistants, changes in those conceptions, and their beliefs about the reasons for changes if any occurred over the course of one semester. The study was designed to collect data in stages and to integrate some of the data into the collection process for a later stage of collection (Figure 1). The mixed methods design was intended to collect data about the UTAs' beliefs at two different stages of their teaching experience, and to allow the sub-group of interview participants to reflect on those beliefs at two different stages. The survey participants did not have access to their own responses from the pre-semester questionnaire, and although the question items were identical in both pre- and post-semester surveys, the order of the questions had been changed to minimize the participants' recollection of their early responses. The interview participants had access to their pre-semester questionnaire responses only during the first round of interviews early in the semester. During the post-semester interviews, participants had access to the raw changes in their own responses from the first survey to

the second, but no further statistical analysis. The survey was intended to collect data towards exploring the first two research questions:

- What are the UTAs' conceptions of teaching prior to teaching?
- What changes take place in the UTAs' conceptions of teaching during the 13-week semester experience?

The early- and post-semester interviews were intended to collect rich data for further exploration of the first two research questions and to explore the third research question:

- What are the UTAs' beliefs about the relationship between their own past student experiences, their current teaching experiences, and any changes that may have occurred during the semester in their conceptions of teaching?

Results of analysis from the statistical tests conducted on the two sets of survey data, as described above, will be presented in the next chapter, and the results of qualitative analysis using the framework method with the interview data will be presented in a later chapter.

Chapter 4: Quantitative Analysis Results

In this chapter, statistical analyses of data from the pre-semester and post-semester questionnaires are described. The repeated measures design of the present study was intended to determine if there were any significant changes in the 29 participating UTAs' conceptions of teaching over the course of a 13-week semester (research questions one and two). As described in the previous chapter, the questionnaires had identical items, but the order of question items was changed for the second survey. Since the survey instrument was a new design, based on established questionnaires but altered to better address the current participants' level of expertise, tests were conducted to assess internal consistency in the new instrument. The datasets were tested to determine whether the assumptions of normality and homogeneity had been met for conducting further testing. To assess change over time, statistical analyses were conducted to compare pre-semester (Survey 1) and post-semester (Survey 2) responses by sums and by comparisons of mean response scores within categories and sub-categories. Mean response scores were also compared by the UTAs' fields of study and previous experience. A conditional, non-parametric, relative change method, the *PRCS*, was used to calculate mean post-test values conditional on the pre-test values—for each possible response for each participant, and then a one-sample *t*-test was conducted on the weighted scores. Descriptive and inferential statistics are presented. Quantitative results will be further addressed in the Discussion.

Participant Demographic Data

For statistical purposes, the participants' demographic data revealed a relatively homogeneous group. There were few between-subject factors to divide the group for

comparisons. For example, there were not enough differences in the group to divide them by gender, age, nor by ethnic background. However, the participants were divided into two groups of approximately equal size by general field of study and by previous experience as UTAs.

Participants came from a wide range of fields, many with declared double majors. Fields of study included: Biology, Chemistry, Communications, Creative Writing, Criminology, Developmental Psychology, Disability Studies, Education, English, French, German, Liberal and Professional Studies, Physics, Psychology, Sociology, Social Sciences, Social Work, and Women's Studies (Figure 4). Since the content of the FAW courses was basic written English and grammar, the participants' own grounding in the field was a potential factor that might have affected how they conceptualized teaching the FAW course content. Participants were grouped by field of study as either students of English or Languages ($n = 13$) or Other ($n = 16$). In some cases, participants listed double-majors that included English or Language studies as well as a science or another non-language field. In these cases, the participant's field of study was considered English or Languages.

Participants' teaching experience prior to the semester of teaching assistantship in FAW was also a relevant between-subjects factor to test. Some of the UTAs had previous experience as teaching assistants ($n = 13$) and some had no experience ($n = 16$). Table 1 shows the division of Field of Study and prior teaching Experience among the participants.

Table 1. Participants by Field of Study and Experience.

	Experience	No Experience	Total
English or Languages	6	7	13
Other	7	9	16
Total	13	16	29

Note. The 29 participants had a wide range of fields of study (see Figure 4). Since the FAW courses' content was central to the participants who were studying English or Languages, the remaining fields of study were grouped together as Other for testing.

Data Categories

As discussed in previous chapters, the survey instrument was new. It was intended to address, in part, the first two research questions: “what are the UTAs’ conceptions of teaching prior to teaching?” and “what changes take place in the UTAs’ conceptions of teaching during the 13-week semester experience?” The survey for the present study was designed for participants in an earlier developmental stage of teaching and learning knowledge and skills than established survey instruments. The survey questionnaire items were intended to describe teaching in terms of teaching tasks; each item was phrased using an active verb, such as: “select,” “assist,” “providing,” or “explaining.” Using a Likert-type scale, participants were asked to rate the level of importance for each teaching task (1 = not very important, 2 = slightly important, 3 = somewhat important, 4 = quite important, 5 = extremely important). The complete questionnaire is in Appendix A. Some aspects of the instrument and Likert-type scale are further mentioned in the Discussion.

The 28 questionnaire items were divided by Focus into two main categories, either teacher-oriented tasks (14) or learning-oriented tasks (14). The two Focus categories were further divided into five sub-categories: teacher-oriented items having to

do with Classroom Management or Course Content, and learning-oriented items having to do with Student Endeavours, Modelling for Students, or Student Needs. Appendix G shows the questionnaire items grouped by stem, and by Focus categories and sub-categories. Although the questionnaire used two different stems, the stems were not intended as conceptually different categories and were not used for testing. Questionnaire items for both stems were worded in terms of actions or teaching tasks, and each stem had an equal number of items in each Focus category. The Methods and Methodology chapter has more detail about the instrument design. Table 2 shows the number of survey items in each category and sub-category.

Table 2. Distribution of Questionnaire Items by Focus and Sub-categories.

Focus Category	Sub-category	Questions per	Total
Teacher-oriented	Content	9	14
	Management	5	
Learning-oriented	Endeavours	7	14
	Modelling	2	
	Needs	5	
Total			28

Note. Content = Course Content; Management = Classroom Management; Endeavour = Student Endeavours; Modelling = Modelling for Students; Needs = Student Needs.

Internal Consistency of the Instrument

Two faculty members who specialize in teaching and learning issues vetted the newly designed instrument. The intention was to check the consistency of question items for each Focus category prior to conducting the survey (i.e., did experienced faculty members, with pedagogical expertise, consistently interpret the same question items as applying to either a teacher-focused approach to the task or a learning-focused

approach?). Based on these results and subsequent discussion with the two faculty members, the survey was refined slightly and the wording adjusted before it was administered to the participants.

After survey data was collected and tabulated, reliability analyses were conducted using SPSS v.23 to measure the internal consistency of the response data. If items in a category measure the same concept, a Cronbach's Alpha test will show a high alpha coefficient; if the data shows little correlation between responses for items in the same category, the alpha will be low, and the assumption of reliability downgraded. Since there were two surveys conducted, internal consistency was tested separately on each dataset and the results compared. "Acceptable" values for the alpha coefficient ranging from .65 to .80 or .70 to .95 are often suggested in the literature, and these suggestions generally reflect different disciplinary contexts. Many authors in social and educational research settle on .70 as the baseline for internal reliability. Acceptable values are both context-driven and a matter of judgement (Lance, Butts, & Michels, 2006; Tavakol & Dennick, 2011; Vaske, Beaman, & Sponarski, 2017).

The alpha coefficient was high for both Focus categories in Surveys 1 and 2, respectively: teacher-oriented ($\alpha = .856$ and $\alpha = .873$) and learning-oriented ($\alpha = .880$ and $\alpha = .837$). Each of the sub-categories was tested separately. The alpha was greater than .70 for most, but not all, of the items in sub-categories. Based on the Cronbach's Alpha results, a few individual questionnaire items were flagged, and their potential to reduce the data's reliability was analysed. Table 3 has a summary of Cronbach's Alpha results.

Table 3. Summary of Cronbach's Alpha Results.

Focus Categories	Sub-categories	Survey 1 α	Survey 2 α
Teacher-oriented		.856	.873
	Content	.736	.784
	Management	.718	.727
Learning-oriented		.880	.840
	Endeavours	.853	.814
	Modelling	.187	.167
	Needs	.670	.690

Cronbach's Alpha for the sub-category Modelling for Students was below the acceptable range of values for internal reliability ($\alpha = .187$ and $\alpha = .167$). The corrected inter-item correlation between the two questions in this sub-category was also low for both surveys (.103 and .091). Vaske, Beaman, and Sponarski (2017) recommend a corrected inter-item correlation of less than or equal to .40 (p. 9). The Modelling sub-category, unlike the other sub-categories, included only two items in the questionnaire (#3 and #9, Appendix G). Just as the alpha may be artificially inflated by including many items in a category, it may be lowered by having too few items (Clark & Watson, 1995; Tavakol & Dennick, 2011; Vaske et al., 2017). Therefore, the Modelling sub-category was not used in further testing. However, the Cronbach's Alpha analyses did not indicate that removing either of the individual questionnaire items from the higher order category would substantially increase the alpha. Although the sub-category was removed as a conceptual group, participant responses to the two items were included in further tests of the category learning-oriented Focus.

The sub-category Student Needs had alphas just below .70 for both surveys ($\alpha = .670$ and $\alpha = .690$). Only one item in the sub-category in Survey 1 (#19) was flagged for a low corrected inter-item correlation and, if omitted from the sub-category, its removal would increase the alpha. However, the increase was not substantial (from $\alpha = .670$ to $\alpha = .677$). In Survey 2, item #19 had a corrected inter-item correlation greater than .40 (.606), and if omitted, the alpha would not have increased. Therefore, the sub-category remained as a conceptual group and was used in subsequent testing.

The teacher-oriented Focus category had only two sub-categories, Course Content and Classroom Management. Cronbach's Alpha analyses revealed that items flagged in these sub-categories for potential omission did not substantially alter the alpha coefficient. Since the higher order Focus category (teacher-oriented) and both sub-categories had alphas greater than .70, subsequent testing included the sub-categories and no items were removed.

Schmitt (1996), writing about the use and reporting of Cronbach's Alpha results, concludes that the details of reliability tests must be examined with consideration for the test's limitations and that "there is no sacred level of acceptable or unacceptable level of alpha. In some cases, measures with (by conventional standards) low levels of alpha may still be quite useful" (p. 353). Reliability analyses to measure the internal consistency of the response data from both survey questionnaires resulted in acceptable alpha levels. Some questionnaire items that might have been removed were left in the datasets. In each case, the decision to include an individual item was based on acceptable alpha levels in the categories and sub-categories, the limited increase in alpha were the item to be omitted, and to some extent, informed by analysis of the qualitative data. In the present

study, qualitative data offered some insight concerning the wording, categorization, and analysis of the Modelling sub-category that was dismissed. This topic is further addressed in the Discussion and in the chapter on qualitative results.

Results of Survey Data Analyses

The survey design was intended to partially address the first two research questions: “what are the UTAs’ conceptions of teaching prior to teaching?” and “what changes take place in the UTAs’ conceptions of teaching during the 13-week semester experience?” Once the internal consistency of the questionnaire items’ Focus categories and sub-categories had been confirmed, tests were conducted to compare scores from the pre- and post-semester surveys. Participants’ response scores were compared by individual participant and by individual question ($N = 812$), and composite mean scores were calculated and compared by the Focus categories and sub-categories.

Response scores overall were greater in Survey 1 than in Survey 2. Appendix H shows the change in sums of responses from Survey 1 to Survey 2 by each participant. As a group, participants rated the importance of questionnaire items higher prior to the semester of teaching and lower after the semester (Table 4). Subsequent tests examined whether the change was significant.

Table 4. Summary of Change in All Response Scores

	Survey 1	Survey 2	Difference
<i>N</i>	812	812	812
Mean	4.240	4.170	-0.070
Median	4	4	0
Mode	5	5	0
Std. Deviation	0.845	0.864	0.729
Sum	3444	3384	-60

Note. *N* = number of questions x number of participants. Difference = the Survey 2 responses (for each participant for each question) minus the Survey 1 responses. Total response scores were lower (less important) in Survey 2; therefore, the sum of the difference, Survey 2 – Survey 1, is a negative (in boldface type).

Given the limited range of possible responses, the mean was used for conducting comparison tests because it is a more versatile measure than the median or the sum, and since the mean is on the same scale as the Likert-type questionnaire items, it was more easily interpreted than the sum. Median and Mode results demonstrate that all responses were high on the 1-5 Likert-type scale. The difference in response, for a given question by a given participant, ranged from -3 to 2.

Aggregate responses were calculated for Focus categories and sub-categories. Table 5 shows that there was a difference in change between the surveys, depending on the Focus. Although responses overall were lower in Survey 2, participants changed their “importance” scores downwards for items in the teacher-oriented category more than they changed them downward in the learning-oriented category. The sub-category Student Needs was the only sub-category that participants rated more important after the semester of teaching.

Table 5. Aggregate Sums of Change in Categories and Sub-categories

Focus	Sum of Change
Learning-oriented	
Student Endeavours	-13
Modelling for Students	-5
Student Needs	6
Learning-oriented	-12
Teacher-oriented	
Course Content	-18
Classroom Management	-30
Teacher-oriented	-48
Total Sum of Change	-60

Testing Assumptions.

Paired *t*-tests and repeated measures ANOVAs were conducted to test for change, and differences in change, between the two surveys using the Focus categories and sub-categories as within-subject factors and using Experience and Field of Study as between-subject factors. Before conducting these *t*-tests and ANOVAs in SPSS, tests were also conducted to determine if assumptions of normality, homogeneity, and sphericity (where required) had been met. To test the data for normal distribution, a series of Shapiro-Wilk tests were conducted on the mean composite response scores for all combination groupings used for the ANOVAs. Results indicated that the majority of the data were normally distributed (Appendix I). Cases that Shapiro-Wilk tests indicated were non-normal were either uniformly distributed or left-skewed; for example, the distribution of composite scores for the Field of Study group, Other, in Survey 1 is left-skewed, as illustrated in Figure 5. The assumption of sphericity was met for Focus, because there

were only two categories. The sphericity assumption was not met for the four remaining sub-categories (Mauchly's $W = .359$, $X^2 = 27.4$, $df = 5$, $p = .000$), and therefore the Greenhouse-Geisser correction to the degrees of freedom ($\epsilon = .590$) was applied in that ANOVA. Levene's tests were conducted to test for homogeneity of variance on the between-subject groupings for the ANOVAs. For Experience, the assumption of equal variance was met. For Field of Study, the assumption was met for learning-oriented Focus in both surveys, as well as for teacher-oriented Focus in Survey 1. However, the equal-variance assumption was not met for Field of Study overall, nor for teacher-oriented Focus in Survey 2 (Table 6).

Table 6. *Levene's Tests Results*

			Survey 1			Survey 2		
			<i>F</i>	<i>df</i>	<i>p</i>	<i>F</i>	<i>df</i>	<i>p</i>
Experience	Survey	Overall	1.400	1,27	.247	0.128	1,27	.724
	Focus	L-oriented	0.195	1,27	.662	0.082	1,27	.776
		T-oriented	0.247	1,27	.624	0.771	1,27	.388
Field of Study	Survey	Overall	3.731	1,27	.064*	5.905	1,27	.022*
	Focus	L-oriented	0.138	1,27	.714	1.329	1,27	.259
		T-oriented	0.189	1,27	.667	4.121	1,27	.052*

Note. *F* = test statistic. L-oriented = Learning-oriented and T-oriented = Teacher-oriented.

* $p < .1$.

Variance was greater amongst the participants who were *not* studying either English or Languages (i.e., Other) than those who were. Figure 5 illustrates the differing range of values between the Field of Study groups.

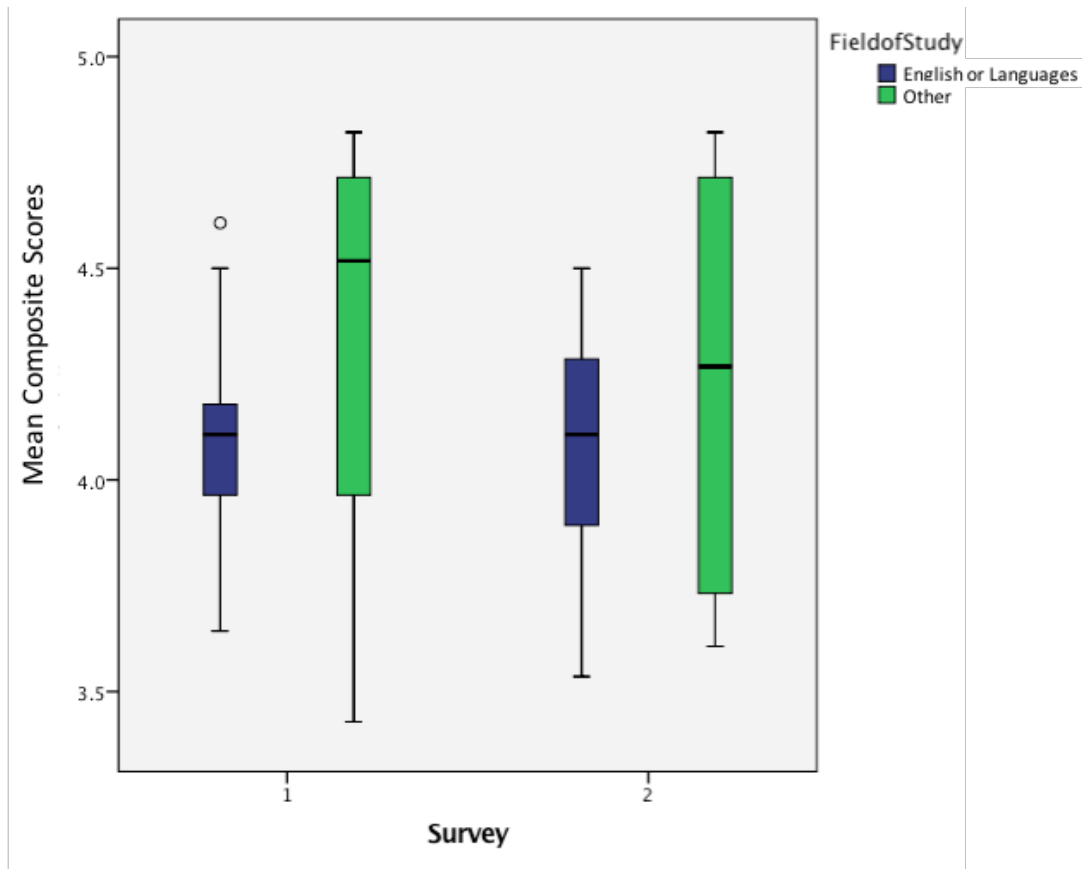


Figure 5. Distribution of mean composite scores by survey and field of study.

The Survey 1 boxplots are left-skewed, while the Survey 2 boxplots are symmetrical. In both cases, Other fields of study shows greater variance.

Change in Response.

Overall.

To examine whether the overall responses changed from Survey 1 to Survey 2, a two-tailed, paired *t*-test was conducted on the composite mean scores over all question items for all participants. The *t*-test showed no significant difference from Survey 1 to Survey 2 ($t = 1.565$, $df = 28$, $p = .129$).

Having determined the participants' mean responses over time (although the change was not significant at the 5% level), further tests were conducted to determine

whether those limited changes in the participants' responses over time had been affected by additional within-subject and between-subject factors. Was the change over time in the participants' responses related to the focus of the question (i.e., a difference between teacher-focused questions and learning-focused questions)? If the participants' responses changed, was there a difference in the change depending on the experience level of the participant (i.e., a difference in the change of response over time between the group of participants with no previous experience as a TA [$n = 16$] and the group of participants with one or more previous semesters of experience [$n = 13$])? Similarly, was there a difference in the change of response over time, depending on the participants' field of study? In this case, given the content of the FAW courses, between the group of participants studying English or Languages ($n = 13$) and the group of participants in fields Other than English or Languages ($n = 16$)?

Focus.

The present study was designed with the a priori concept that there is a spectrum of teaching approaches that range from a focus on the teacher to a focus on the learning (Barr & Tagg, 1995; Fuller, 1969). To measure change in the participants' focus along this spectrum, a two-way repeated measures ANOVA was conducted with the factors Survey and Focus (Table 7). The responses differed by Focus ($F = 18.772$; $df = 1,28$; $p = .000$), meaning there was a significant difference in mean aggregate scores between teacher-oriented and learning-oriented Focus. There was no Survey by Focus interaction ($F = 2.547$; $df = 1,28$; $p = .122$), meaning that there was no significant difference in mean aggregate scores of either Focus over the course of the semester.

Table 7. Two-way Repeated Measures ANOVA for Focus

Effect	<i>F</i>	Hypothesis <i>df</i>	Error <i>df</i>	<i>p</i>
Survey	2.448	1	28	0.129
Focus	18.772	1	28	0.000*
Survey x Focus	2.547	1	28	0.122

* $p < .05$.

Figure 6 illustrates the differences in mean composite scores between Survey 1 and Survey 2 in terms of Focus. While all response scores were lower in Survey 2, responses to the teacher-oriented questions went down more (indicating less importance) than responses to the learning-oriented questions.

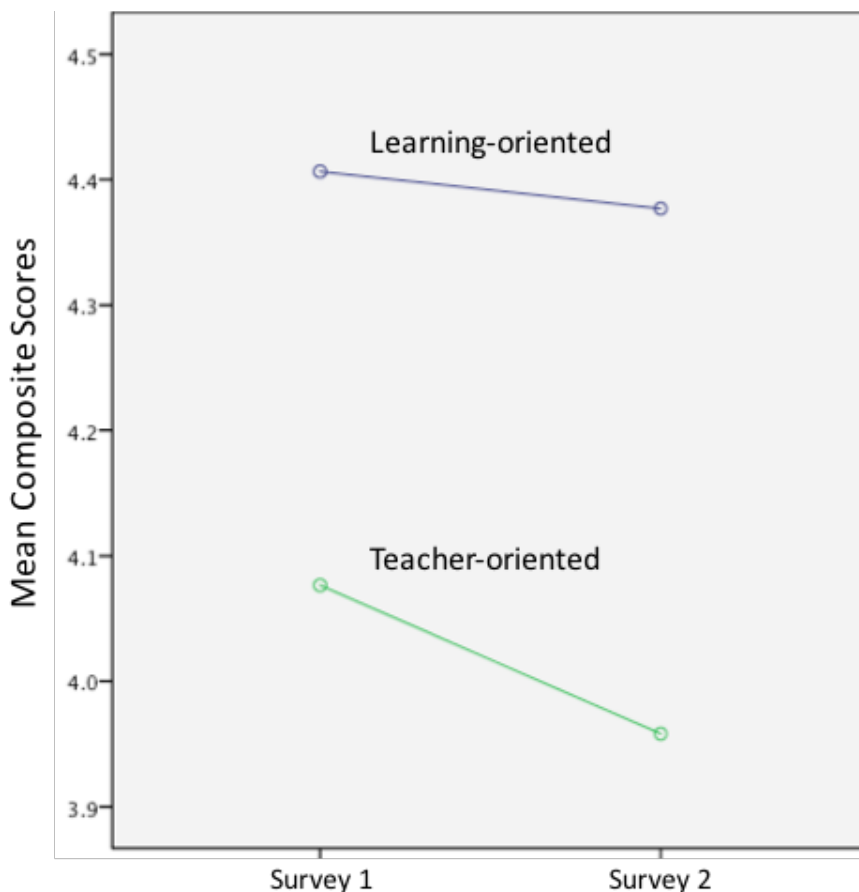


Figure 6. Profile plot for repeated measures analysis by focus.

Focus was a significant factor, as the locations of the profile plot lines indicate, meaning responses overall were higher for learning-oriented than for teacher-oriented Focus in both surveys. Change in the slopes for both Focus orientations, indicating change in “importance,” were not significantly different from horizontal or from each other.

Sub-categories.

Results for the sub-categories were different from each other, and there was a significant Survey by Sub-category interaction, meaning that at least some of the participants’ responses to the sub-categories of Focus changed over the course of the semester (Table 8). The mean scores for each sub-category were significantly different from the mean scores of every other sub-category.

Table 8. Two-way Repeated Measures ANOVA for Sub-categories

Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Survey	0.323	1	0.323	2.428	0.130
Error(Survey)	3.726	28	0.133	-	-
Sub-categories	18.564	1.769	10.497	29.043	0.000*
Error(Sub-categories)	17.897	49.518	0.361	-	-
Survey x Sub-categories	0.451	2.813	0.160	4.313	0.008*
Error(Survey x Sub-categories)	2.927	78.761	0.037	-	-

* $p < .05$.

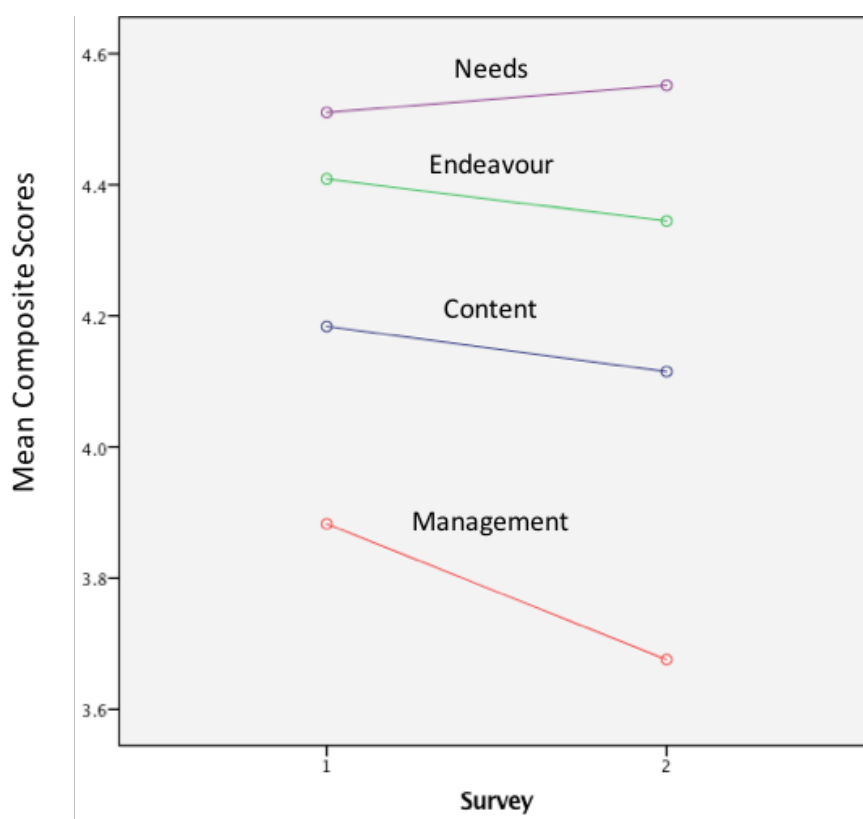


Figure 7. Profile plot of repeated measures analysis for sub-categories.

Sub-categories were a significant factor. As the locations of the profile plot lines indicate, responses overall were highest for Needs in both surveys, and lowest for Management in both surveys. Change in the slopes for both Focus orientations, indicating change in “importance,” was significantly different for Needs than Endeavour, Content, and Management as a group. Change in “importance,” was significantly different for Management than Needs, Endeavour, and Content as a group.

Pairwise comparisons indicated that all sub-categories were significantly different from each other (Figure 7). To determine which sub-category(ies) may have been driving the difference, the two-way ANOVA was repeated with one sub-category at a time omitted. When Student Needs, the only sub-category to increase in importance over the course of the semester, was omitted, Survey became a significant factor ($F = 5.687$; $df = 1,28$; $p = 0.024$). The aggregate responses for other three sub-categories were significantly lower in Survey 2 than in Survey 1. The other three sub-categories were significantly different from each other, but the interaction with time was not significant, meaning the amount by which those three categories decreased in importance over the semester did not differ significantly.

Table 9. Two-way repeated measures ANOVA with Needs omitted

Source	Type III Sum of Squares	<i>df</i>	Mean Square	F	<i>p</i>
Survey	0.558	1	0.558	5.687	0.024*
Error(Survey)	2.749	28	0.098		
Sub-categories	10.551	1.398	7.550	19.442	0.000*
Error(Sub-categories)	15.196	39.132	0.388		
Survey x Sub-categories	0.191	1.988	0.096	2.827	0.068
Error(Survey* Sub-categories)	1.889	55.668	0.034		

* $p < .05$.

When Management was omitted, neither Survey nor Survey by sub-category was significant (Table 10), indicating that the significant interaction with all four sub-categories (Table 8) was being driven by Management. The amount by which Management decreased from Survey 1 to Survey 2 was different from the amount by

which the other three sub-categories decreased in importance over the course of the semester (Figure 7).

Table 10. Two-way repeated measures ANOVA with Management omitted

Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Survey	0.041	1	0.041	0.425	0.520
Error(Survey)	2.676	28	0.096		
Sub-categories	4.275	1.423	3.004	10.190	0.001*
Error(Sub-categories)	11.747	39.841	0.295		
Survey x Sub-categories	0.113	1.881	0.060	1.611	0.210
Error(Survey x Sub-categories)	1.958	52.669	0.037		

* $p < .05$.

Experience.

To determine whether the UTAs' level of prior experience had affected the amount of change in their mean scores over time, a mixed repeated measures analysis of variance was conducted with the UTAs' previous experience as a factor. Experience did not have an effect on change in scores ($F = .222$; $df = 1,27$; $p = .642$).

Focus and Experience.

To determine whether the UTAs' level of experience had affected the amount of change in the participants' mean scores by Focus, a mixed two-way repeated measures ANOVA was conducted. There was a significant effect of Focus, as there had been in the earlier two-way repeated measures ANOVA on Focus alone (Table 7). There was no significant effect of Experience alone nor Focus by Experience interaction (Table 11).

Table 11. Mixed Two-way Repeated Measures ANOVA for Focus by Experience

Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Survey	0.167	1	0.167	2.506	0.125
Survey x Experience	0.015	1	0.015	0.222	0.642
Error(Survey)	1.796	27	0.067	-	-
Focus	4.210	1	4.210	19.396	0.000*
Focus x Experience	0.202	1	0.202	0.932	0.343
Error(Focus)	5.861	27	0.217	-	-
Survey x Focus	0.048	1	0.048	2.170	0.152
Survey x Focus x Experience	0.036	1	0.036	1.624	0.213
Error(Survey x Focus)	0.591	27	0.022	-	-

* $p < .05$.

Field of Study.

To determine whether the UTAs' field of study had affected the amount of change in their mean scores over time, a mixed repeated measures analysis of variance was conducted with the UTAs' field of study as a factor. Field of Study did not have an effect on change in scores ($F = 2.065$; $df = 1,27$; $p = .162$).

Focus and Field of Study.

To determine whether the UTAs' field of study had affected the amount of change in their mean scores by Focus, a mixed two-way repeated measures analysis of variance was conducted. There was a significant effect of Focus, as there had been in the earlier two-way repeated measures ANOVA on Focus alone (Table 7). There was no significant effect of Field of Study or Focus by Field of Study interaction (Table 12).

Table 12. Mixed Two-Way Repeated Measures ANOVA for Focus by Field of Study

Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Survey	0.129	1	0.129	2.065	0.162
Survey x Field of Study	0.129	1	0.129	2.065	0.162
Error (Survey)	1.682	27	0.062	-	-
Focus	4.244	1	4.244	19.818	0.000*
Focus x Field of Study	0.281	1	0.281	1.310	0.262
Error (Focus)	5.782	27	0.214	-	-
Survey x Focus	0.056	1	0.056	2.426	0.131
Survey x Focus x Field of Study	3.38E-06	1	3.38E-06	0.000	0.990
Error (Survey x Focus)	0.627	27	0.023	-	-

Note. 3.38E-06 = 0.00000338.

**p* < .05.

Conditional Measures of Change

A refinement on the second research question, “what changes take place in the UTAs’ conceptions of teaching during the 13-week semester experience?” would be: “if conceptual change took place, was such a change towards teacher-oriented items being more important than learning-oriented, or vice versa?” Although the Likert-type scale offered a range of possible scores from 1 to 5, participant responses in survey 1 tended to the higher side of the range (median = 4, mode = 5). Figure 8 demonstrates the range of mean scores for Survey 1. Given that the participants’ responses were limited in range, on the high side of importance ratings, the data was examined using a conditional method.

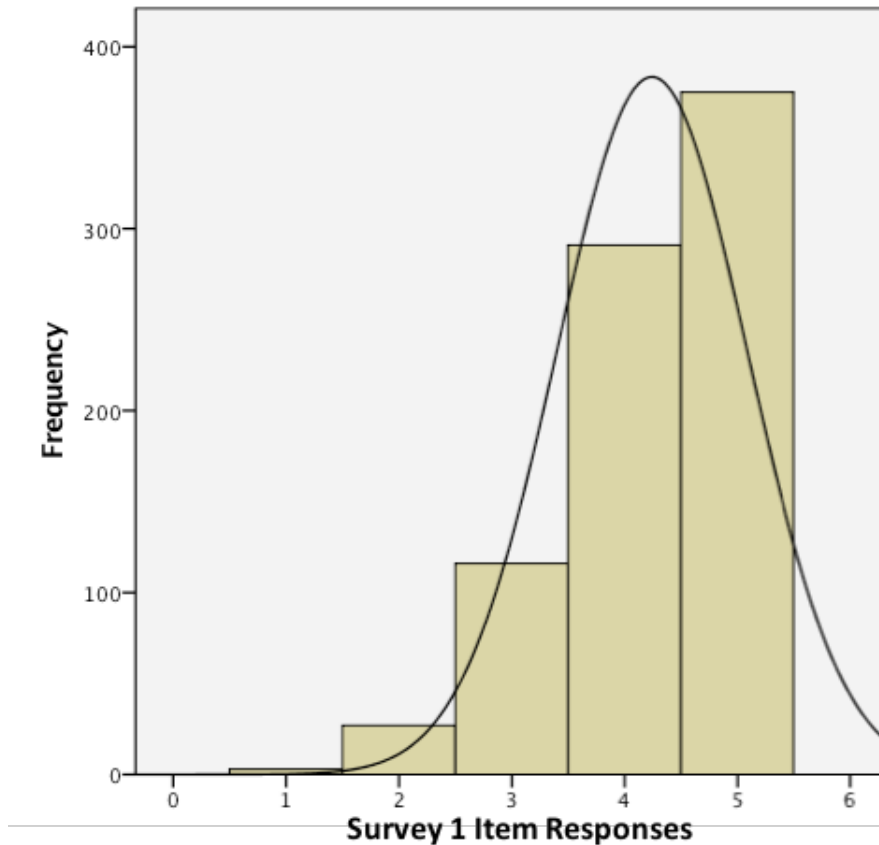


Figure 8. Response frequency histogram for Survey 1 is left-skewed.

The Poststratified Relative Change Scores (PRCS) method proposed by Hennig, Müllensiefen, and Bargmann (2010) is a nonparametric (distribution-free) conditional procedure for examining change by looking at raw answers for individual questions. Using the PRCS method, individual participants' mean responses for survey 2 were examined in light of their raw responses for Survey 1. In other words, the method begins with the answers to questions in Survey 1, and then calculates the average of how the questions were answered the second time—by individual participant—given how they were answered the first time. The calculations were made separately for each Focus category in order to address the above research questions. The differences between

averages for learning-oriented and teacher-oriented question items were weighted according to the prevalence of that individual's actual response values for both surveys, with the resulting statistic being \bar{D} . Hennig et al. (2010) explain that, "the resulting score values [\bar{D}] provide a directly interpretable measure of the size of the differences between within-subject changes" (p. 298).

Since the theoretical mean of \bar{D} (the expected value of the weighted mean difference) approximately follows a *t*-distribution, change in teacher-oriented versus learning-oriented Focus can be determined with a *t*-test (Hennig et al., 2010). A Shapiro-Wilk test on the values of \bar{D} confirmed the appropriateness of using a *t*-test ($W = .970$, $df = 29$, $p = .570$).

There was a significant change in the participants' average responses in survey 2, conditional on their responses in survey 1 ($t = -3.576$, $df = 28$, $p = .001$). The participants' average responses for learning-oriented items decreased significantly less than their average responses for teacher-oriented items. The mean value of \bar{D} was -0.218 , with 95% confidence interval $(-0.343, -0.093)$.

From the pre-semester survey to the post-semester survey, the change in mean responses indicated a decrease in importance for both learning-oriented and teacher-oriented items (Figure 9). The results of the PRCS *t*-test described above show that the mean survey 2 responses for all learning-oriented items versus all teacher-oriented items—conditional on the raw responses for each participant on survey 1—are statistically significantly different. \bar{D} was less than zero due to the difference in Focus: the mean responses to the learning-oriented items were higher on the second survey than the mean responses to the teacher-oriented items on the second survey (Figure 10).

There was directionality to the difference, so that the learning-oriented items tended to be rated higher for importance (i.e., less low) than the teacher-oriented items. Figures 9 and 10 illustrate the differences between Focus categories: the learning-oriented items were rated as less low in the second survey than in the first survey compared to the teacher-oriented items, which, according to the weighted *t*-test, were significantly lower. All items on both surveys tended to be rated lower (i.e., less important) at the end of the semester, and the difference between the learning-oriented items and teacher-oriented items was marked.

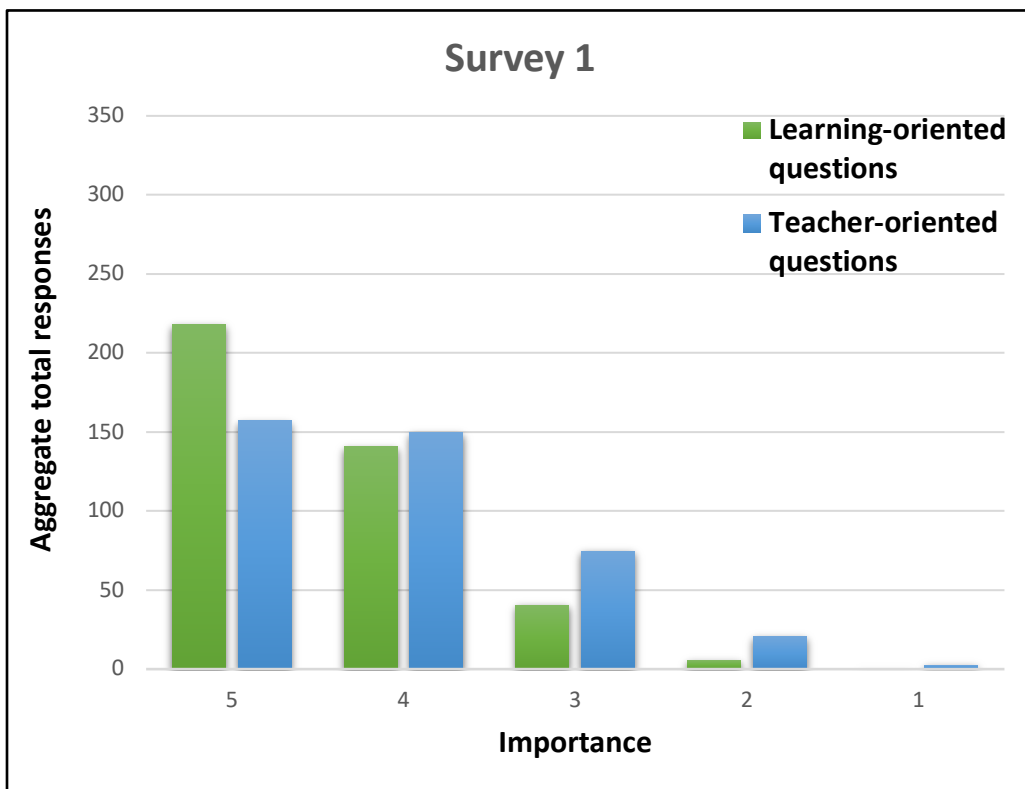
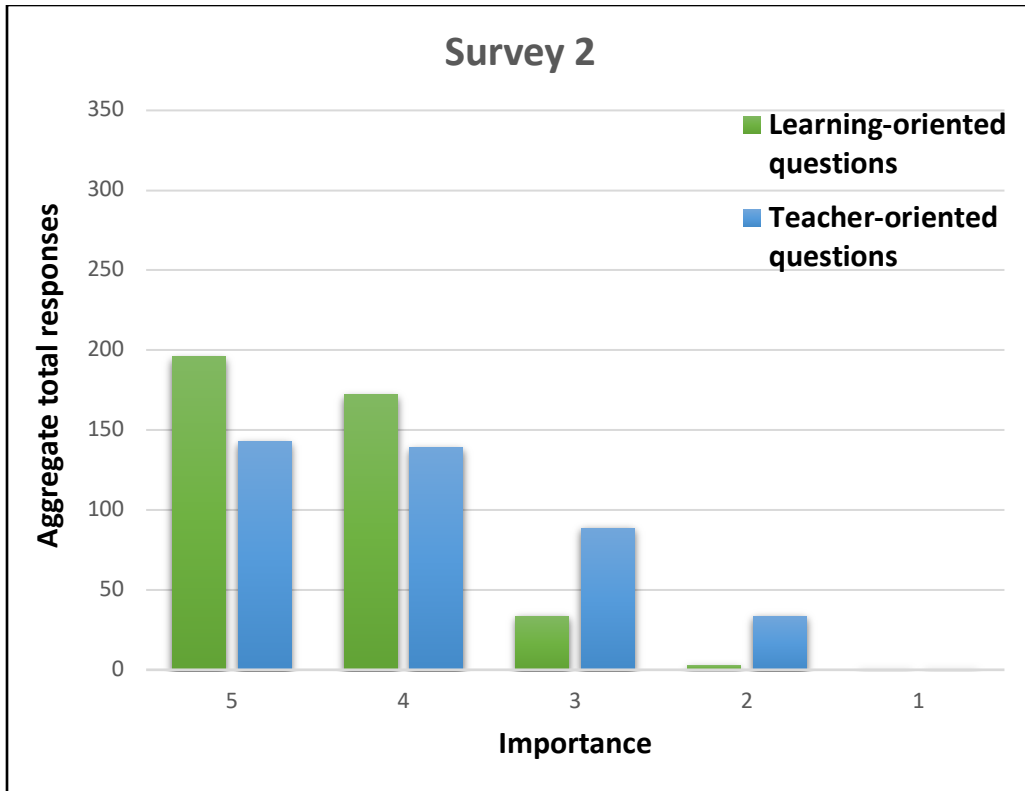


Figure 9. Survey 1 and Survey 2 aggregate sums of raw responses by focus.

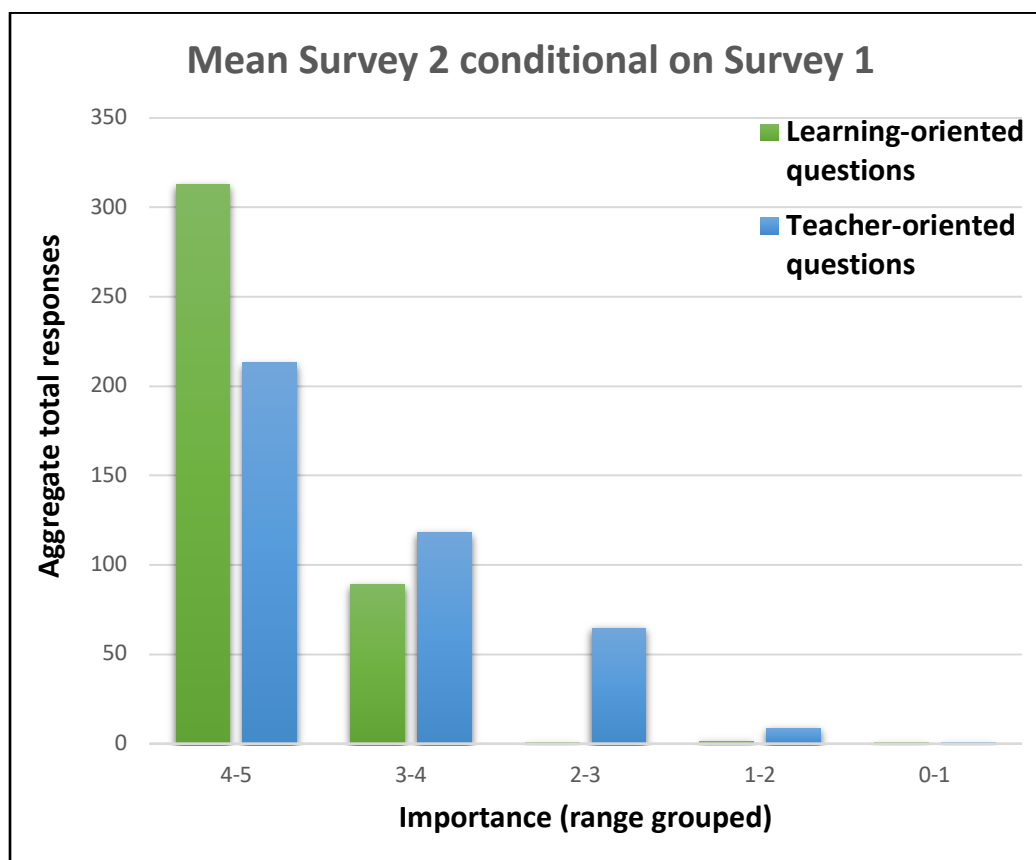


Figure 10. Mean Survey 2 conditional on Survey 1.

Summary of Quantitative Results

Analyses of the data sets for Survey 1 (pre-semester) and Survey 2 (post-semester) offered some detail for exploring the first two research questions about change over time in the UTAs' conceptions of teaching. The participants were a relatively small and demographically homogenous group. The group was divisible (close to half and half) by differences in their major fields of study, and again (close to half and half) by differences their previous experience as teaching assistants (Table 1). Variance in scores was greater amongst the group of participants who were *not* studying either English or

Languages than amongst the group in those two fields of study (Figure 5). However, there was no significant effect by Field of study nor Experience on the change in teacher-oriented vs. learning-oriented Focus.

The quantitative data did reveal some changes in the UTAs' responses overall from pre- to post-semester. When conditionally adjusted for the high level of importance the UTAs gave to all teaching tasks (Figure 8), the post-semester scores revealed that participants rated learning-oriented tasks as significantly more important than teacher-oriented tasks (Figure 10). When the survey responses were divided into sub-categories by types of teaching tasks, the mean scores for each sub-category were significantly different from the mean scores of every other sub-category. Student Needs was the only category to increase in importance. Responses overall were highest for Student Needs in both surveys, and lowest for Classroom Management in both surveys (Figure 7). Only the sub-category Classroom Management had a significant effect on the overall change in Focus.

Quantitative data alone does not address the third research question about the UTAs' beliefs about the relationship between their own past student experiences, their current teaching experiences, and any changes that may have occurred during the semester in their conceptions of teaching. Interview questions intended to explore the UTAs' conceptions of teaching in greater depth, and to address the third research question, were partially guided by responses to the surveys. Results from framework analysis of the two sets of interview data are presented in the next chapter.

Chapter 5: Qualitative Results

Two sets of interview data, collected from 10 UTA participants early in the semester and the same 10 participants after the semester, were analysed using the framework method developed by Ritchie and Spencer (1994/2002). The interviews were semi-structured, with several questions asked of all participants, and with variations that depended on the individual participant's responses to the survey questions. Srivastava and Thomson (2009) point out that framework analysis is "primarily based on the observation and accounts of the participants" (p. 77). They also say that framework analysis is both dynamic and flexible, allowing "change or addition or amendment throughout the process," while allowing for "methodical," "comprehensive," and transparent analysis (p. 77). In the present study, the iterative process of working through the five stages of framework analysis offered both a structure for examining connections between quantitative and qualitative data at several stages and the flexibility to add an additional theoretical framework, or lens, when the data generated a need for one. For example, while Fuller's (1969) stages of concern and Barr and Tagg's (1995) paradigm shift towards learning-oriented approaches were a priori themes considered in the original research design, Feldman's (1976) characteristics of teachers became a critical lens only when the qualitative data demanded it.

Stages of Framework Analysis

Framework analysis was "designed to facilitate systematic analysis within the demands and constraints of applied policy research" (p. 176), such as ensuring that rich original data was not lost in the iterative process between creating codes and categories and generating theories. The analysis takes place in five stages: familiarization,

identifying a thematic framework, indexing, charting, and mapping and interpretation (p. 178). Ritchie and Spencer (1994/2002) are careful to point out that these five stages are interconnected rather than strictly linear, and that the researcher will move back and forth between stages, as meaning and connections are reworked. The framework analysis process as it was carried out for the present study is detailed below.

Stage one: Familiarization.

Some of stage one, the familiarization process, took place during transcription, when interview recordings were played and reviewed multiple times. Then, typing, preparing transcription documents for member-checking, and taking notes about key issues, first impressions, and emergent categories all contributed to familiarization or “immersion in the data” (Ritchie & Spencer, 2002, p. 179). This stage was essential for building capacity for coding, identifying thematic categories, making connections, and interpretation of the data.

Stage two: Thematic Framework.

Srivastava and Thompson (2009) describe the second stage of framework analysis in terms of both the researcher’s conceptual processes and the influences of a priori ideas when creating a framework. “Devising and refining a thematic framework is not an automatic or mechanical process, but involves both logical and intuitive thinking. It involves making judgments about meaning, about the relevance and importance of issues, and about implicit connections between ideas” (p.76). In the present study, some overarching themes were conceived in the design phase. Fuller’s (1969) original stages of concern model suggested three a priori themes: (a) Pre-concern or Non-concern, (b) early stage concerns (Concern with Self), and (c) later stage concerns (Concern with “Pupils”).

The present study's participants, undergraduate teaching assistants, differ from the participants in Fuller's "Concerns of Teachers" studies, in that the UTAs are neither pre-service nor in-service students of teaching programs. One unknown factor prior to data collection was whether the UTAs would self-identify as teachers at all, so the second theme was divided into Self-concern as Apprentice and Self-concern as Teacher, to account for possible differences in the UTAs' self-identification. Fuller sub-divided the self-concern theme in which she addressed covert and overt concerns. The covert self-concerns, she labeled "Where do I stand?" and the overt self-concerns she labelled "How adequate am I?" (p. 220). The sub-divisions in Fuller's and in the present study are roughly parallel conceptually, given the differences in the participants' contexts.

Two of the four a priori stages of concern themes are closely associated with the paradigm shift from a focus on instruction to a focus on learning as identified by Barr and Tagg (1995). One a priori hypothesis about the qualitative data was that self-concerns expressed by UTAs associated with their teaching duties might reveal an inclination to a teacher-oriented approach to teaching and that concerns expressed about benefits to students might reveal a learning-oriented approach to teaching. Analysis of the interview transcripts began with these four themes in mind:

- Non-concern: UTA as Employee
- Self-concern: UTA as Apprentice
- Self-concern: UTA as Teacher (teacher-oriented approach)
- Concern for Students or Student Learning (learning-oriented approach)

Stage three: Indexing.

Defining codes for a category index was an iterative process. Each interview transcript was placed in a table with rows dividing the text by each interview question and the subsequent participant answer. Every row was labelled by participant number, by which interview (early-semester or post-semester), and by a row number. For example, the row label E4.27 was the 27th question and response from the early-semester interview with participant number four. Labelling individual rows with pieces of text was intended to ease subsequent retrieval and reference to the original interview context when comparing responses between participants or between the two interviews with a single participant. Table columns included the text, an area for placing codes beside lines of text, and an area for researcher notes. Table 13 illustrates the interview transcripts as tabulated for coding and retrieval.

Table 13. Example of Tabulated Transcript Format

#	Early-semester interview with #17:	Codes	Notes
E17.1	Interviewer: Transcript of the Interviewer's question here.		
E17.1	Participant 17: Transcript of the Participant's response here. (Often longer than this sample, and may have any number of associated codes.)	2.4.2, 2.4, 3.6.3b,	Notes about ideas, connections, emergent concepts, etc.
E17.2	Interviewer: Transcript of the Interviewer's next question here.		
E17.2	Participant 17: Transcript of the Participant's response here.	Q7, Q27 3.2, 4.8.3	

Note. The # column labels each response with early- or post-semester interview, the participant's identifying number, and the specific question and response pairing in order. In the Codes column, Q indicates a question from the survey data; other numerals indicate specific codes from the theme codebook (Appendix J).

The 20 transcript tables were searchable, so that each instance of a single numerical code could be retrieved and viewed in its original context. After each interview was tabulated, with the rows of text labelled, categories and sub-categories within each of the four main themes were identified and noted in the tables. As Ritchie and Spencer (2002) mention, “the approach involves a systematic process of sifting, charting and sorting material according to key issues and themes” (p. 177). Assigning numerical codes to concepts or ideas was the “sifting” process to which Ritchie and Spencer allude. During several iterations of a guiding codebook, the categories and sub-categories were specified in detail; some categories were collapsed and others split or expanded, as ideas and connections emerged from the transcripts. For example, the initial code for teaching strategies was split into three parts, so that the concepts of interactive/engaging and lecture could be coded separately, because the interviewees associated these two types of teaching strategies with substantially different connotations. In the final version of the codebook, Non-concern: UTA as Employee had five categories and eight sub-categories, Self-concern: UTA as Apprentice had seven categories and 11 sub-categories, Self-concern: UTA as Teacher had eight categories and 29 sub-categories, and Concern for Students/Learning had eight categories and 24 sub-categories. The final codebook (Appendix J) included 91 numerical codes; however, most codes were repetitions of a single topic as paired with a concern or with a teaching approach. For example, there were three numerical codes having to do with marking student work: one code associated with Self-concern: UTA as Apprentice for marking as a non-teaching activity, and two separate codes for marking and feedback, depending on whether the interviewee’s

comment referred to Self-concern (i.e., teacher-oriented) or Concern for Students/Learning (i.e., learning-oriented).

The Notes column of the tabulated interview transcripts held references to perceived trends, possible nuances of emergent ideas, potential connections between ideas, etc. This column was also used to indicate possible connections between interview responses and data from the surveys. For example, a sentence from one participant's post-semester interview response, "teaching is passing on your knowledge to students, and, I guess, in a way that will maximize understanding" had a notation indicating a connection to survey question #7 "A teacher should pass his or her expert knowledge on to students" (teacher-oriented), and a connection to survey question #27 "Good teaching is delivering information in a way that the students will absorb it and retain it." In the Codes column for this participant response, were codes for the theme Self-concern: UTA as Teacher: self-as-teacher, secure with, content mastery, communication skills, helpful/guiding, and for the theme Concern for Students/Learning: concern for student progress/success.

Once the indexing was complete, code data were entered in an Excel workbook and counts of individual codes were summed by participant and interview. Counts of codes were not further analysed with statistical processes. Counts were used only to offer indicators of possible trends, as supplemental support for perceived trends, or to flag the perception of a trend as potentially flawed. For example, the code for student interactions was used when a participant described a specific interaction with a student or students.

In the early semester interviews, counts of these codes per each theme were:

- Self-concern: UTA as Apprentice (27)
- Self-concern: UTA as Teacher (50)
- Concern for Students/Learning (7)

In the post-semester interviews, counts of the same student interactions code were, respectively: (4), (35), and (1). According to these counts, the UTAs described specific interactions with students that were interpreted as Self-concern: UTA as Apprentice 27 times in the early semester interviews, and only four times in the post-semester interviews. The greatest numbers of student interactions were interpreted as Self-concern: UTA as Teacher (50 and 35 times), and the least were interpreted as Concern for Students/Learning (7 and 1 times). In the case of this code, the counts suggested that the UTAs might have viewed the majority of their interactions with students through the lens of a teacher identity with a teacher-oriented approach to the interactions. The counts offered enough information to warrant a closer look at the context and wording of those parts of the transcripts, but no conclusions were drawn based solely on counting codes.

Stage four: Charting.

Charting involved arranging responses to key questions or topics in various configurations, so that the data could be examined and compared within and across cases. Since the pieces of data in these charts (MS Word tables) had been removed from their interview contexts, each piece of charted text was accompanied by its individual transcript label (participant #, early- or post-interview, and line #). The identifying labels allowed for easy reference back and forth between comparison charts and original interview context. For example, a chart was created with comments from all interviewees

that pertained to “what is teaching?” This was a key interview question, closely related to the research questions, so it was raised in all interviews, and at two different points during the early-semester interviews. Table 12 contains some excerpts from that chart. Charting the larger categories aids the fifth stage of framework analysis, mapping and interpretation. However, without easy reference to the original context in which a comment was made, participants’ intended meanings could be misinterpreted; thus, specific labels identifying each comment in searchable transcript tables were necessary to ensure greater likelihood of a sound interpretation (Pope et al., 2000, p.116; Richards & Richards, 2002, pp. 148-150; Ritchie & Spencer, 2002, pp. 175-177). Charts were also created for emergent concepts: for example, separate charts were created for the concepts (or similarly phrased ideas) *I’m not a teacher*, for *Students teach themselves*, and for *Frustrating/Difficult*, among others.

Table 14. Example of Charting Process: Excerpt from the Chart “What is Teaching?”

#	Early-semester responses	Post-semester responses
#11	<p>11E.14 [Laughs]. I would say teaching is... passing on knowledge, I guess. And I guess there's a bunch of different ways of doing that. Um...</p> <p>11E.43 Okay. Well firstly, it's passing on knowledge in a helpful way, and not being derogatory, and understanding that students are in a class to learn. They're not in a class to...to know what they already know. It's to gain new knowledge. So, that's definitely part of it. You have to be clear, definitely passing on your knowledge in a very clear way.</p>	<p>11P.36 [Laughs] Passing on knowledge – I think I said something similar to this – passing on knowledge about specific coursework and providing guidelines for learning, maybe? I think a lot of it was that you need to be able to relate with students. . . .it's a lot easier when students can come to me and talk to me about their marks and how they can improve, because I'm able to relate to them. So, I think that's important for a teacher to be able to relate to their students and, kind of, empathize with their students.</p>
#12	<p>12E.19 Teaching is...you know, being able to impart knowledge on to somebody who doesn't have that knowledge. But they should probably also want to get the knowledge, not just, you know, it being forced on them . . .</p>	<p>12P.48 Well, you have to teach them the material, but then if they're not getting it and you don't give any feedback, they're not going to change their ways suddenly and actually get it . . . feedback is especially important because we're not the ones doing the initial teaching. Like, they're reading from the textbook, and then if they don't get it, feedback is the way to correct them and actually teach them.</p>
#13	<p>13E.11 Teaching is conveying knowledge, previously acquired knowledge, from one person to another. Like, to have that concept... Yeah, trying to give that person the concepts. Yeah, sharing the concepts, sharing knowledge with that person, in whatever means you can, just for the person to understand what you're saying.</p>	<p>13P.32 In any context, as far as information is being passed from one person to another, then there is teaching going on. I feel like teaching is a lot more complex than I used to think. I mean, I can say this because sometimes you think that, “Oh, the teacher is not experienced well,” or something like that. But it's difficult for the teachers.</p>

Note. The # column indicates which participant's responses are in the row. E or P in each cell indicate early- or post-semester interviews; the numeral following E or P indicates the specific response to a specific Interviewer question.

^aThis example table contains actual participant comments, but the numbers have been changed.

^bEllipses indicate pauses. Italics were added rarely, only when the emphasis was strong.

Stage five: Mapping and Interpretation.

As mentioned in the Methods and Methodology chapter, there were two main reasons for employing framework analysis: its structured transparency and its association with, and suitability for, applied policy research such as program review (Ritchie & Spencer, 2002, p. 173). While the present study is not a program review, the impetus to begin FAW program research was the comparison to alternate writing program models, as well as the innovative nature of the program. The intent was to take an initial exploratory step, based on the research literature about teacher training and professional development, and interpretation of the participants' data was to be based on an analysis of trends that indicated shared experiences, rather than on experiences mentioned by individual UTAs that were less likely to be shared or common. The choice of methodology was pragmatic: to use methods for collecting and analysing data that would not only answer the research questions, but that could easily be replicated and used to inform further research.

The research questions were narrowed to the current three from an initial overall interest in the efficacy of the FAW program for student learning. Since teachers' approaches to teaching affect students' approaches to learning, and students' approaches to learning affect learning outcomes (Gibbs & Coffey, 2004), the research questions were an attempt to begin exploring the teaching approaches of UTAs who were tasked with carrying out some "front line" teaching responsibilities.

The fifth stage in the framework analysis, mapping and interpretation, was complex and layered. It first involved examining the interview transcripts in light of a priori hypotheses about the UTAs' likely stages of awareness of, or "concern" about,

teaching and learning. During the previous four stages of analysis, emergent concepts gleaned from the interview transcripts added to the complexity of mapping and interpretation. Beyond these, analysis of the quantitative data from pre- and post-semester survey questionnaires added a layer of both information and questions to mapping and interpreting the UTAs' comments. In the following paragraphs, results of the mapping and interpretation of interview transcripts will be presented in light of these multiple layers: a priori concepts, emergent ideas, and results from the quantitative analysis.

The first research question, "what are the UTAs' conceptions of teaching prior to teaching?" was considered in light of the UTAs' likely stages of teaching and learning awareness while remaining alert to the indications of the unexpected. Assuming that at least most of the UTAs would have had little-to-no education in pedagogy, this population of undergraduates seemed likely to hold similar beliefs and concerns to the population described in Fuller's initial 1969 study:

These students rarely had specific concerns related to teaching itself. The teaching-related concerns they did express were usually amorphous and vague: anticipation or apprehension. Most often they didn't know what to be concerned about. They thought of teaching in terms of their own experiences as pupils and as college students. What concerns they did spontaneously express about their coming student teaching were based mostly on hearsay: discipline problems, getting a good grade or wangling an assignment to a favored supervisor. (p. 219)

One a priori hypothesis was that the UTAs might not consider themselves teachers, nor their duties "teaching." If that were the case, Fuller's earliest stage of concern, "non-concern" (p. 219), might come close to describing the UTAs' approaches to teaching.

Unlike the pre-service and in-service population of teacher candidates in Fuller's study, the UTAs were not enrolled in a teaching education program. Therefore, the UTAs might have approached teaching less as early-stage teaching apprentices and more as though they were employees tasked with carrying out non-teaching duties.

UTAs' Stages of Development

After further investigation using factor analysis on 1,359 Teacher Concerns Statements (Fuller, Parsons, & Watkins, 1974), Fuller and Bown (1975) reported on a refined stages of concern model, separating the stages into "Pre-teaching concerns," "Early concerns about survival," "Teaching situation concerns," and "Concerns about pupils" (pp. 38-39). Since then, many researchers have made use of Fuller's model; some have added further refinements, added to definitions, or changed the terminology. For example, Kugel (1993) added two more stages, one on each end of the usual four, "preparation" and "tuning" (pp. 325-326), and Hall and Hord (2001) describe Fuller's stages as "unrelated," "self," "task," and "impact" (p. 58). Despite the intervening decades, the basic developmental stages of concerns remain constant in the literature on investigations into teacher and instructor development. According to Conway and Clark (2003), Fuller's model "remains appealing because of the elegance and clarity with which it portrays the outward trajectory of teacher development. Furthermore, we speculate that countless teacher educators have noticed a similar progression of concerns among their prospective teachers" (p. 467). Tables 15-19 show the categories and sub-categories used for coding the four themes: Non-concern: UTA as Employee, Self-concern: UTA as Apprentice, Self-concern: UTA as Teacher (teacher-oriented approach), and Concern for Students or Student Learning (learning-oriented approach).

Non-concern: UTA as Employee.

Participant comments that appeared to refer to employment rather than teaching were identified as: interactions with the instructor-as-supervisor, rules and regulations pertaining to the course or the institution, non-teaching issues to do with the online systems, job experience, and affective comments to do with the employment experience (Table 15). When code counts revealed a pattern that seemed of interest, the code was searched, and comments were read in context to see if the pattern was meaningful.

Counting codes in the Non-concern: UTA as Employee theme revealed a few patterns. In the early-semester interviews, all 10 participants had comments coded *resume building* or *need the money* or both, associated with their reasons for seeking out a teaching assistant position. For example, a typical response to the interview question “Why did you apply to be a TA in FAW?” was:

I like that it’s an on-campus job. And that way, I don’t know, I think it just
 ...[pause¹] it looks good in all academia. It’ll look good if I’m applying for grad
 school to say I was a TA.

Only one each of these two codes was noted in the post-semester interviews. Comments coded *rules and regulations* also dropped off substantially in the post-semester interviews. However, neither pattern, when examined in context of the original interviews was revelatory. In the former case, *resume building* and *need the money* were responses to a direct question in the early-semester interviews—that was not asked in the post-semester interviews. In the latter case, responses coded *rules and regulations*, when

¹ In all participant comment quotes, ellipses mean the participant paused.

examined in the context of original interviews, revealed the kinds of apprehensions normal to novices in any new workplace situation; those apprehensions about rules and regulations in the workplace were resolved during the semester on the job. These examples illustrate one of the strengths of using framework analysis, false positive interpretations of patterns can be mitigated by the ease with which coded data may be examined in its original context.

Table 15. Theme 1, Non-concern: UTA as Employee categories and subcategories

Theme 1	Category	Subcategory
Non-concern: TA as employee	Instructor interactions Rules and regulations Online vs. Classroom Job experience Affective	Previous TA experience Need the money Resume building Positive Surprised by . . . Concerns / Desires <ul style="list-style-type: none"> ▪ Time management ▪ Job performance

The most frequent codes in theme Non-concern: UTA as Employee were *job performance* and *time management* in both early-semester and post-semester interviews. The UTAs, with one exception, were apprehensive early in the semester about their ability to adequately manage their time, “Time management is a big, big thing, because it’s an extra 10 hours a week, on top of basically . . . essentially, more than a full-time job on top of classes and studying.” Time management issues were also raised in the themes Self-concern: UTA as Apprentice and Self-concern: UTA as Teacher. Without exception,

in both pre- and post-semester interviews, the UTAs expressed frustration at the difficulty of offering the amount of feedback they felt was required within the 10 hours per week. Comments were coded according to whether the concern was most associated with an employee role, self-concern from a non-teacher point of view, or self-concern from teacher point of view. In theory, the UTAs would move from one stage to the next as they became more familiar with their roles and the requirements of the position. However, Fuller and Bown (1975), in their refinement of Fuller's original stages of concern theory, state that it had not yet been established "whether these are really 'stages' or only clusters, whether they are distinct or overlapping, and whether teachers teach differently or are differentially effective in different stages" (p. 37). They re-labelled the earliest concerns of teachers "survival" concerns, "at first contact with actual teaching, however, education students' concerns change radically. Their idealized concerns about pupils are replaced by concerns about their own survival as teachers" (p. 38).

Self-concern: UTA as Apprentice.

The UTAs may have been moving through various stages of development towards adopting a teacher identity, even towards more learning-oriented concerns by the end of the semester, although this developmental path/direction was not certain and not straightforward. They did occupy more than one role, and they did appear to switch between roles/identities as they addressed specific issues in the interviews. Hamman, Gosselin, Romano, and Bunuan (2010) wrote about possible-selves theory in relation to the development of pre-service and in-service teachers. Although UTAs in the present study were not studying educational theory and practice, they were in a similar, if less deliberate, situation in terms of learning on the job. Hamman, et al. explain, "because

possible selves are thought to be created within the parameters of an individual’s social context, projections of the self are likely derived from what is valued, or perceived to be valued, within an individual’s specific social experiences” (p. 1351). As described in the Stage two: Thematic Framework section, the four major themes identified during analysis (refined from three a priori themes) all have to do with the UTAs occupying—or speaking from the point of view of—one of the multiple roles or the stage(s) from which they were performing their duties, reflecting on experiences, and describing. The relative importance or value UTAs placed on aspects of their teaching over the course of the semester may indicate ways in which they were projecting “possible selves” or identities as they grappled with their conceptions of teaching and their roles.

Table 16. Theme 2, Self-concern: UTA as Apprentice categories and sub-categories

Theme 2	Category	Subcategory
Self-concern: TA as Apprentice	Instructor’s responsibility Head TA interactions Peer TA interactions Student interactions Affective Past experiences connected to ...	I’m not a teacher Students teach themselves Marking as non-teaching activity Positive <ul style="list-style-type: none"> ▪ Secure with . . . ▪ Empathy for . . . Surprised by . . . Concerns / Desires <ul style="list-style-type: none"> ▪ Concern with Instructor and/or Peers’ opinions Self as Student Self as TA

Time management.

Time management was a concern that straddled all UTA roles. Some of the UTAs' concerns about time management seemed to come from a point of view that was more about their roles as student assistants/apprentices than about the rules of their employment, for example, "I'm really worried about if I'm going to be like, 'Surprise!' and I'm going to be like, 'Oh my God, I have two hours left to mark these papers!'" or

I would try to mark as much as I could immediately. That way, I had time to do my own things. I wasn't waiting to the very last minute. Just trying to get stuff done. So, I try not to be rushed that way, because I don't want to, you know, give inaccurate marks to people.

Other comments about time management, addressed later in the chapter, were worded more as though the UTA was occupying the teacher role than the apprentice role.

I'm not a teacher.

The code for *I'm not a teacher* was only categorized as belonging to the theme Self-concern: UTA as Apprentice. These comments were various, but they indicated the UTA was identifying more as an assistant or an apprentice than as a teacher, at least in that moment of the conversation. In the first set of interviews, eight of the 10 UTAs made a comment to which the code *I'm not a teacher* was assigned. The counts of the code amongst those eight ranged from one to 15 instances per participant. The two participants who did not have the code assigned to any of their comments in the early-semester interviews did have some in the post-semester interviews. One participant did not have the code assigned in the second interview, but that participant had the code 11 times in the first interview. Here are some examples of comments that were assigned the *I'm not a*

teacher code: “I don’t think that really, that I’m a teacher [laughs] by any means;” “It’s not like I really have to go out of my way to teach them—just if they come for help;” “[It] doesn’t carry the huge responsibility that being a teacher carries. You’re kind of like a little bit of a supplement in there, and you’re a helping hand.” These comments all came into the conversation indirectly; the UTAs were not asked if they considered themselves teachers. *I’m not a teacher* was frequently associated with the *students teach themselves* code, for example, “since I wasn’t a professor, and the students were mostly learning on their own, I’m not really sure (laughs) what else they would learn.” When the UTAs made statements denying responsibility for teaching, they seemed to see a need to fill in the blank—who was the teacher? Some of the UTAs suggested the answer was the FAW Instructor, “I know that with any kind of more important issues, I guess, like needing an extension on an assignment, or even changing a grade or something like that, they always interact with the professor.” Another suggestion was that *the textbook does the teaching*, and a third was that the *students teach themselves*: “most of the teaching is done through the textbooks, and through the quizzes and so on, it’s not as much responsibility specifically teaching that way,” or “I thought that students would be very independent, and kind of ... I guess we do expect them to teach themselves the material” or “everything was basically taught by the website itself,” or “it’s expected that the students teach themselves. So, I think it’s more just helping with the course material, not teaching it.” These, and similar *I’m not a teacher* comments, were still frequent in the post-semester interviews (54 times in the early-semester interviews and 37 times post-semester), “as a TA, I really am just, kind of, a marker. And then, I guess, my side role is just helping students.”

In both sets of interviews, the UTAs seemed to switch between roles or identities rapidly, so some comments were difficult to categorize as either Self-concern as Apprentice or Self-concern as Teacher; for example,

We're not the ones doing the initial teaching [i.e., *I'm not a teacher*]. Like, they're reading from the textbook [i.e., *the textbook does the teaching*], and then if they don't get it, feedback is the way to correct them and actually teach them [i.e., UTA as teacher].

Comments such as this that blur apprentice and teacher identities were common, and they could indicate either a transitional phase through the stages of concern or merely indicate rapid switching between points of view without necessarily moving through successive stages.

Marking as a non-teaching activity.

Another code that appeared frequently in the theme, Self-concern: UTA as Apprentice, was *marking as a non-teaching activity*. The UTAs were given detailed rubrics and instructions for marking, and even though they consistently offered feedback along with the marked assignments, they made clear distinctions between marking and feedback: “with a TA, you're not really interacting, you're more just marking assignments” or “As a student, I don't want anyone to be mad at me [laughs]. Because, I'm worried that a student might not get a good grade, and then come in the little bit angry” or “TAs are kind of just in the backseat. Like, we're just back there marking, and then we send you your feedback, and then you say ‘Oh my God, why did I get this?’” Much like the *I'm not a teacher* code, comments about *marking as a non-teaching activity* persisted, but with slightly lower counts, in the post-semester interviews (58

times in the early-semester interviews and 41 times post-semester). While it was occasionally difficult to tease out the differences in the UTA's self-perceived identities when they spoke about marking and feedback, it was while discussing feedback that most of the UTA comments revealed glimpses of teacher-identities.

Self-concern: UTA as Teacher.

What is teaching?

To the interview question “what is teaching?” the most frequently offered response was some form of “passing on knowledge.” A few variations were “conveying information,” “taking information and relaying it in an effective way,” “trying to inform,” and “imparting knowledge.” In their early attempts to define teaching, the UTAs tended to use “knowledge” and “information” interchangeably; for example, “the knowledge is there, it’s in the textbooks and it’s in the lectures.” Their novice definitions of teaching aligned with an “empty vessel” or “blank slate” concept of teaching. A notable trend was that every UTA interviewee appeared to find her initial description of teaching inadequate, even in the early-semester interviews, and upon attempting to expand the definition, the UTAs’ most frequent addition to the concept was *guidance* or *being helpful*. The early, but expanded definitions come from a more teacher-oriented approach than a learning-oriented approach.

Responses to the question “what is teaching?” belonged to more than one theme, as the UTAs switched between their self-perceived roles/identities. In the following example from an early-semester interview, the UTA describes her transitioning conceptions of the role:

I know that, at the orientation for our TAs, we were told that we are “teaching assistants,” and I hadn’t really thought ... I mean, obviously, I knew that’s what TA stood for, but I hadn’t really thought about that before. I didn’t really consider myself a teacher. I just, kind of, considered myself a marker [laughs]. I know that, this semester, I have tried to “teach” [air quotes gesture] my students. You know, I sent an email, and I came up with examples on how to use a semi-colon, and I used examples that weren’t in the textbook, because I didn’t think the textbook was really covering it that well. Um, and I really do try to teach now. And, I guess, I’m sure a lot of other TAs feel the same way, that you don’t really consider yourself a teacher, but I guess that is part of our job.

The question “what is teaching?” was challenging for the UTAs to answer; teaching is a complex concept, not easily described in a few words. Their conceptions of teaching often came out, not in direct answer to the interview question, but when answering additional interview questions, as the UTAs described interactions with students, feedback, their own past experiences as students, their frustrations, and their goals. One interviewee’s response to the question, a description from her experience as a student, is representative: “there are some professors, where they’ll just lecture and lecture and lecture [laughs]. And other professors will stop, ask questions, and they’ll want to get feedback from students.” This excerpt from an early-semester interview illustrates how asking about teaching in terms of *teaching skills* helped the interview participants articulate their conceptions of teaching:

Interviewer: If I were to ask you the question “what is teaching?” what would you say?

Participant: Teaching, I guess, the definition would be sharing one's knowledge on a particular topic, or just in general with somebody else, or group of people.

Yeah, that would be it.

Interviewer: Can you expand on that at all?

Participant: I guess ... trying to inform. I don't know if I can [laughs].

Interviewer: Yes, that's a tough question to answer. What if I were to ask you about teaching skills, the different skills involved in teaching? Would that help a bit?

Participant: Yeah, you have to make sure that you're very patient with people.

You're not going to get frustrated if they don't understand the concept right away.

You should be personable as well and make sure that students understand where you're coming from, and you understand them, and it's not just so generic. You know, so, those are important skills. If you're physically teaching, like in a classroom, you should be able to speak very, you know what I mean like, speak well, and get the class involved. For FAW, you have to make sure that the class understands what's expected of them, when things are due, just make sure that you're communicating very well with them.

In this case, the comments were coded as teacher-oriented (Table 17), although some of the responses to "what is teaching?" were coded for the fourth theme, Concern for Learning: UTA as Teacher (Table 19), even in the early-semester interviews. Comparing answers to this question between the two sets of interviews was simplified by using the framework analysis chart in which comments were placed side-by-side (Table 12). Table 17 shows categories and sub-categories for the third theme.

Table 17. Theme 3, Self-concern: UTA as Teacher categories and sub-categories

Theme 3	Category	Subcategory
Self-concern: TA as Teacher / Teacher-Oriented	<p>Online vs. Classroom Rules and regulations Head TA interactions Peer TA interactions Student interactions</p> <p>Affective</p> <p>Past experiences connected to ...</p> <p>Teacher Characteristics</p>	<p>Marking and Feedback Office hours Teaching Strategies <ul style="list-style-type: none"> ▪ Interactive/engaging ▪ Lecture Student Responsibility Impressions/Opinions of students</p> <p>Positive <ul style="list-style-type: none"> ▪ Secure with . . . ▪ Empathy for . . . Surprised by . . . Concerns / Desires <ul style="list-style-type: none"> ▪ Concern with students' opinions ▪ Concern with own content mastery ▪ Concern with own teaching efficacy Frustrating / Difficult</p> <p>Self as Student Self as TA Self as Teacher</p> <p>Leadership/ Authority Planning and organization Content mastery Communication skills Approachable Available Flexible/ Accommodating Helpful/ Guiding Enthusiastic / Motivating Fair</p>

In general, the UTAs' post-semester answers were more considered and detailed, since they were based on their experiences during the semester in addition to their origins in previous experiences as students. More about changes in the UTAs' conceptions of teaching appear later in this chapter.

Teacher characteristics.

Teacher characteristics was an emergent concept. The survey questionnaire was designed to elicit responses about the importance of various teaching *tasks*—actions or activities performed by the instructor—with the intent to measure the UTAs' conceptions of teaching in terms of teacher-oriented versus learning-oriented approaches, based on the activities/actions/tasks described. However, the interview questions, designed to delve further into the UTAs' reasons for their ratings of teaching activities, revealed an unexpected dimension of the UTAs' conceptions about teaching. When discussing their conceptions of teaching—from the viewpoint of any of their multiple roles as students, assistants, and teachers—the UTAs all brought up *characteristics* of the teacher (i.e., teachers are like this, rather than teachers perform these acts). This way of conceptualizing teaching, the teacher's personal characteristics, was absent from the survey questionnaire. The UTAs did not necessarily differentiate between the characteristics of the person in the teaching role and that person's approach to teaching or deliberate instructional choices.

During analysis of the interview transcripts, multiple characteristics of teachers were identified and coded. Through many iterations, and as categories and sub-categories emerged, some of the more specific terms for characteristics were collapsed. For example, “helpful” and “caring” were frequent descriptors, and—based on the context of

the UTAs' interview conversations—words such as “helpful,” “caring,” “patient,” “personable,” or “understanding” were collapsed into the teacher characteristic *approachable* or *helpful/guiding*.

The characteristics of good/effective teaching and good/effective teachers have been studied extensively and reported in the literature on student ratings of instruction (SRI) or student evaluations of teaching (SET), or variations of these terms. Foundational research by Feldman (1976, 1988, 1989a, 1989b) and Marsh (1987, 2007) involved large-scale statistical analyses of many smaller studies to identify a taxonomy of characteristics, or dimensions, of teaching. Feldman's original list of teacher characteristics in the Table titled, “Characteristics of Ideal and Best College Teachers and Characteristics Important to Superior College Teaching, as seen by College Students,” offers 19 characteristics, and it details the various descriptions from which he derived the terms used in his report (1976, pp. 246-251). Marsh and others adapted Feldman's list of characteristics for use in follow-up studies, and although many characteristics/dimensions of teaching have been listed, studied, and entered in taxonomies under various labels, several remain core to standardized SRIs/SETs (Abrami, d'Apollonia, & Rosenfield, 2007; Marsh, 2007, p. 323). More recent literature has focused less on adding to or refining these lists of teacher characteristics and more on re-organizing them into meaningful categories for examining various aspects of student rating scores. For example, Abrami, d'Apollonia, and Rosenfield (2007) suggest viewing teaching characteristics/dimensions of teaching in terms of the products or the processes of teaching.

McKeachie, building on Feldman's and Marsh's work, suggests that "student ratings of teaching involve a mix of personality characteristics and characteristics related to the content and assessment of achievement" (2007, p. 459). It was standard at the time of Feldman's research for an instructor to have complete control of the course content. While this may still be considered the norm, there are now many cases wherein institutional requirements or the increased use of contingent or part-time faculty have altered the landscape, and in these cases the instructor's control of the content and materials may no longer be taken for granted. In Table 18, codes for teacher characteristics that emerged during analysis of the interviews are listed side-by-side with Feldman's (1976) list of teacher characteristics. Since the UTAs did not design the FAW courses and had no power to alter course content, four of Feldman's original categories were removed from the comparison table: "Value of course material," "Usefulness of supplementary materials," "Difficulty (workload)," and "Intellectual challenge" (1976, p. 252).

Table 18. Comparison of Codes with Feldman's Teacher Characteristics

Emergent Codes	Feldman's Characteristics *
Enthusiastic / Motivating	1. Stimulation of interest 2. Enthusiasm
Content mastery	3. Knowledge of subject 4. Intellectual expansiveness
Planning and organization	5. Preparation and organization
Communication skills	6. Clarity and understandableness 7. Elocutionary skills
Flexible / Accommodating Helpful / Guiding	8. Sensitivity to class level and progress
Communication skills Planning and organization	9. Clarity of objectives and requirements
Fair	13. Fairness and evaluation
Leadership / Authority	14. Classroom management
Available Helpful / Guiding	16. Encouragement of discussion (openness)
Fair Helpful / Guiding Communication skills	15. Feedback to students
Approachable	18. Respect for students (friendliness)
Available Helpful / Guiding	19. Availability and helpfulness

Note. *Partial list from Feldman, 1976, p. 252

Enthusiastic/Motivating.

In the Feldman (1989a) study “Stimulation of interest in content” and “Teacher enthusiasm for subject” were separate *dimensions* or characteristics of teaching that were ranked differently by students and faculty. Faculty members thought it more important to be enthusiastic about their own subjects than the students thought they needed to be (ranked 2 vs. 5 in order of importance). Students thought it more important that instructors stimulate their interest in the subject than the faculty members did (ranked 3.5

vs. 12). In the present study, coding for *enthusiastic/motivating* did not require separation. Most frequently, the UTAs spoke of these dimensions as paired, as though their enthusiasm in their teacher-selves roles would naturally and inevitably motivate their students,

Especially with a course like FAW, where most students don't enjoy it, it's important for me to say that, "I do enjoy this material. I enjoy the course; I enjoyed it when I took it, and, yes, it is important, because if you don't pass it, not only are you wasting your \$700, but it's ... these are the kind of skills that you are going to take into every single class, that you're going to use for the rest of your university career. It's not just something that you're going to learn and then recycle and never use again."

Positioned part-way between student and instructor, the UTAs were asked to reflect on issues around teaching that at times stimulated thoughts from their teacher-selves and at other times their student-selves. It may be that the rapid switch between identities had them viewing *enthusiasm/motivation* as one, envisioning the student-self responding to an enthusiastic teacher-self with increased motivation.

Communication skills.

Communication skills were another rich topic for the UTAs. Again, this code straddled themes and was associated with other codes such as *concern with own teaching efficacy* and *frustration/difficulty*. Communication skills was a sub-category under Teacher Characteristics, and interview responses about teachers' communication skills in theme Self-concern: UTA as Teacher were the second-most frequently mentioned characteristic (104 times in the early-semester and 105 times post-semester). Another

teacher characteristic, *helpful/guiding*, was the most frequently mentioned in this theme. This example is representative of the UTAs' attempts to expand on their definitions of good teaching, and using the characteristics of teachers, rather than the activities of teachers to explain it:

Professors have to be able to guide the students. They have to know the answers, but also that they are there for guidance. Like, if the student needs the help, needs the guidance, that they are there. That affected me as a student, because I know that a lot of professors are there to help, but also that, as a TA, that you have to be able to know the material. And you have to be able to help the students in the ways that they'll understand, because students have different then ways that they understand material.

Figure 11 illustrates the relative importance of the characteristics of teachers to the UTAs as they described teaching during the early- and post-semester interviews. References to characteristics emerged when they described either "good" and "poor" teaching from their past experiences as students. Teacher characteristics also emerged when they spoke of their personal goals in their positions with FAW. Most often, their descriptions of teacher characteristics were associated with the Self-concern: UTAs as teachers; however, they also referred to characteristics of teachers in the theme Concern for Students/Learning.

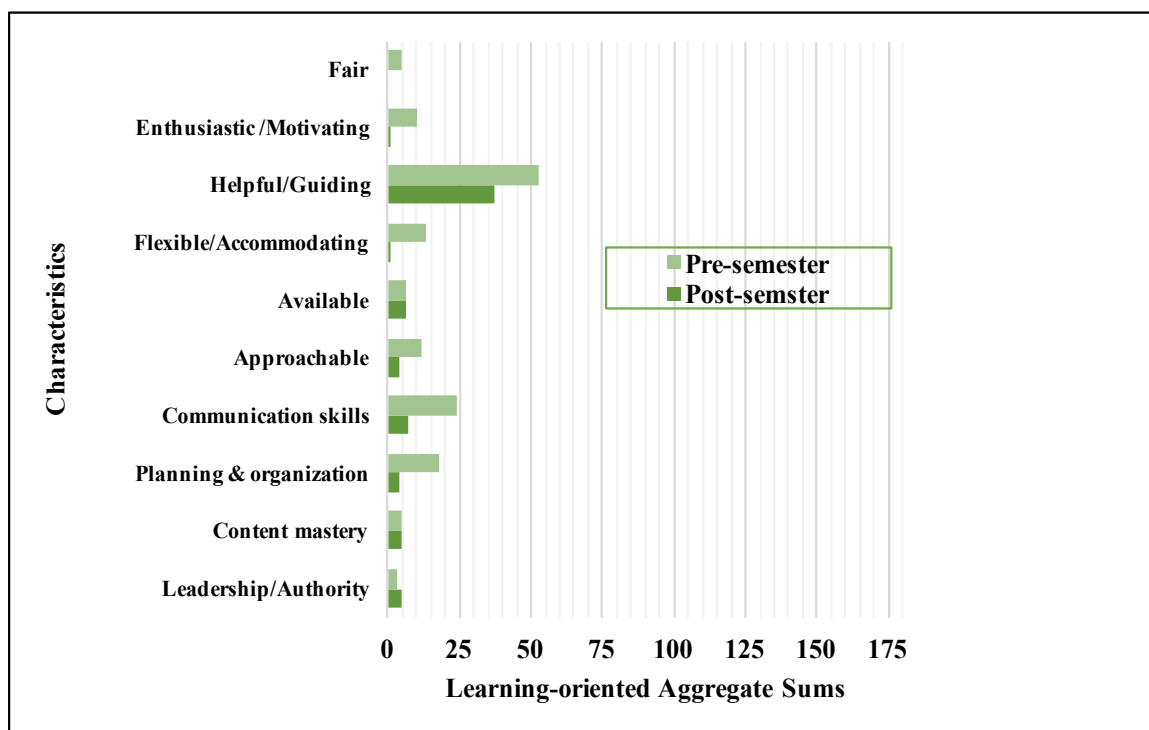
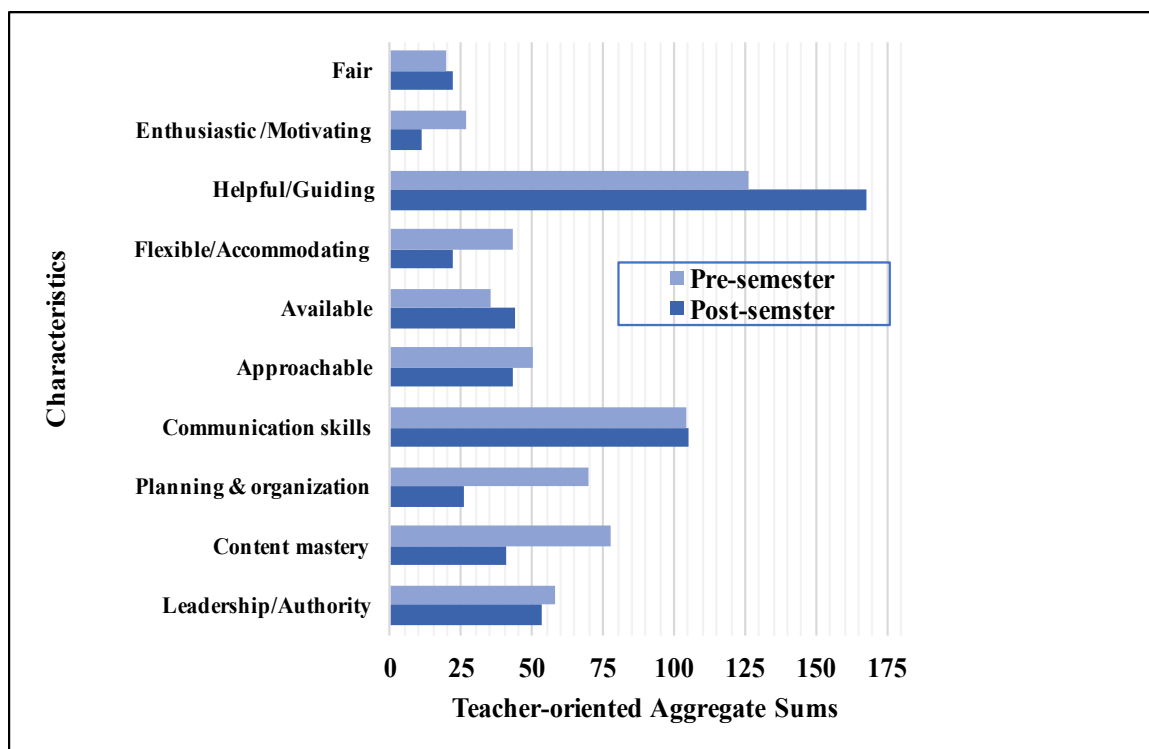


Figure 11. Aggregate sums for interview responses of teacher characteristics.

Marking and Feedback.

The topics of marking and feedback generated much of the affective (i.e., feelings and attitudes) in the UTAs' responses. They tended to downplay marking—the one task they consistently claimed to be their primary responsibility—referring to it as “only marking” or “just marking.” A typical response to the interview question “what do you see as your primary responsibilities as a TA in FAW?” was “we’re not really that actively involved in teaching per se, so it’s more marking I’d say.” The FAW rubrics and strict rules for marking left UTAs feeling distanced from responsibility for assigned grades, while anxious about “getting it right” (as an employee) and “getting it done on time” (as an apprentice). Thus, the sub-category *marking as a non-teaching activity* emerged in the theme Self-concern: UTA as Employee. While the UTAs were relieved to disclaim ultimate responsibility for grades, they faced frustrations and difficulties while explaining the marking system to students, and they felt “bad” or “guilty” when students were upset about the grades: “It just made me feel like the marking scheme is really harsh, because I had to give out a lot of low marks. And it’s not even like ... if you make a mistake once, you lose 5%” or “we feel so bad giving out bad marks, but we ... we’re just following the marking scheme. That’s the mark we pretty much have to give out” or “I had to give out a lot of bad marks, and I feel like if they had come to see me, I could really help them understand things and help them get better grades.”

Codes for *marking and feedback* often straddled the Self-concern themes UTA as Apprentice or UTA as Teacher. *Marking and feedback* frequently overlapped with affective codes such as *frustrating/difficult*, for example:

Like, I didn't really think it would be this way. And a lot of the students ... they didn't like me. They didn't like the course. They're very mean about it. They're like, "Why do I have to be taking this?"

The code for *marking and feedback* was also associated with *concern with own teaching efficacy*, for example:

My biggest difficulty, when I was marking, I would have to constantly be looking back into the Handbook to make sure I knew the material myself. Just so I didn't want to get caught saying "this was wrong," if they were actually right. So, I found I needed the actual knowledge of the subject [laughs] I guess a lot, because you can't correct it if you don't know what it is. Which probably sounds very obvious and everything, but that's something that I found.

However, on closer examination of the coded comments in their transcripts, it became clear that the concern with efficacy was consistently about marking, not about offering feedback. Offering feedback was often paired with the code *secure with*.

Frustrating/Difficult.

As previously mentioned, codes for affective aspects of the UTAs' experiences were associated with other codes, such as certain teaching tasks or communication issues. The code for *frustrating/difficult* was the most frequently occurring code in the early-semester interview transcripts, and it was nearly as frequent in the post-semester. The sources of frustration, however, changed over the course of the semester. Early in the semester, UTAs were still getting used the rules for marking and finding strategies for their interactions with students,

The rude emails I would get offended from, you know, insinuating certain things about me. Which, I got this position for a reason. I'm not stupid or anything. So those are the kind of emails I would have got offended at. At this point, I just kind of put myself in student shoes and say, "Okay, they're upset." Whatever. I feel bad giving out failing grades, because when I see that somebody's written an entire piece, and has put in – however many words, like 500 words – and they're still getting 45 or 50 or something like that. That, I feel bad about, because I see there was work put in.

UTA comments that address both *frustration* and *marking* are further examined in the section on Concern for Students/Learning.

Student responsibility for learning.

While marking and time management were the greatest sources of frustration mentioned in the early-semester interviews, the students' lack of personal responsibility for their own learning was the greatest source of frustration mentioned in the UTAs' post-semester interviews. For example, this comment from a post-semester interview in response to a question about what the UTA had learned about teaching, had both codes *frustrating/difficult* and *student responsibility*:

My biggest learning experience through that was that you can only do so much. And you can do your job, and you can do it well, but sometimes the students just don't get what you're giving them, kind of thing, and that you, kind of, just have to let it go after that, because you can only go so far.

Concern for Students/Learning.

What is teaching?

Differences in responses to the question “what is teaching?” between the early-semester interviews and the post-semester interviews were quite varied. In some cases, the UTAs repeated their answers from the earlier interviews almost word-for-word before expounding on them. In other cases, the answers had changed quite a lot. For example, one participant changed her answer from a more teacher-oriented response, “sharing one’s knowledge on a particular topic, or just in general with somebody else, or group of people” to “teaching is basically just making sure that you’re helping the students out in any way that you can, that they’re aware of what’s expected of them. That they don’t feel overwhelmed with assignments or anything.” Another example of a similar shift towards concern for learning was a change from this early-semester response, “I think at the University, in how I have understood it, the teachers more or less relay what they know. And relay what the material is, and then it’s your responsibility to understand it,” to:

I would say that teaching is... taking information and relaying it in an effective way to your students that everyone can grasp it, and everyone can understand it.

And trying your best to make them want to understand it, and want to learn it, and feel that it’s important to know. At the same time, you have to provide the things they need to be able to understand the material.

In each example, the UTA’s latter answer revealed a shift towards concern for the students’ needs. This shift towards more concern for the students’ needs was also evident (although not statistically significant) in the overall changes between scores on the two

surveys, wherein the mean scores for the three other sub-categories went down, but the mean scores for Student Needs went up (Figure 7).

Table 19. Theme 4, Concern for Students/Learning categories and sub-categories

Theme 4	Category	Subcategory
Concern for Students / Learning-Oriented	Online vs. Classroom Rules and regulations Head TA interactions Peer TA interactions Student interactions Affective Past experiences connected to ... Teacher Characteristics	Concern for student progress/success Marking and Feedback Office hours Teaching Strategies <ul style="list-style-type: none"> ▪ Interactive/engaging ▪ Lecture Student Responsibility Impressions/Opinions of students Positive <ul style="list-style-type: none"> ▪ Secure with . . . ▪ Empathy for . . . Surprised by . . . Concerns / Desires Frustrating / Difficult Self as Student Self as TA Leadership/ Authority Planning and organization Content mastery Communication skills Approachable Available Flexible/ Accommodating Helpful/ Guiding Enthusiastic / Motivating Fair

Concern for student progress/success.

In both pre-semester and post-semester interviews, the most frequently mentioned teacher characteristics in the learning-oriented theme were *helpful/guiding* and *communication skills*—as they were in the teacher-oriented theme. Repetition of this pattern in both themes suggests the relative importance of these two characteristics to the UTAs’ conceptions of teaching. It is interesting to note that, in a meta-analysis of student ratings of instruction by Feldman (2007), the teacher characteristic “Clarity and Understandableness” had the second greatest correlation with student achievement, and “Teacher’s Availability and Helpfulness” had the sixth greatest, out of 28 “dimensions of instruction.” For both of these dimensions/characteristics in Feldman’s study, the correlations were statistically significant (pp. 103-104). In the present study, codes for *helpful/guiding* and *communication skills* were frequently associated with the UTAs’ personal goals, with their comments about “good” teaching, and with their frustrations.

Marking and Feedback.

The UTAs were surprisingly consistent in their security with the quality of the feedback they offered to students. When codes for *marking and feedback* were associated with codes for *frustrating/difficult*, the issues were about time management, FAW rules, and student responsibility for learning, among others. The concerns were not related to self-efficacy with offering feedback for example, this comment about time management: “I mean, I still gave good feedback, but definitely I would say it decreased in volume a bit, because you just can’t,” or this comment about student responsibility for learning:

It’s so difficult, because you think if you are expending so much energy, but if the person you’re teaching is not trying to ... Like, the person also has to make an

effort, but if the person is not making an effort, it just makes everything so difficult. Like, I was sitting with a student who kept making the same mistake throughout the whole semester, and it's like, "I'm giving you everything. Like, just take it."

McKeachie (2007), citing Feldman's work on the correlations between aspects of teaching and outcomes, says,

Feedback, for example, does not correlate particularly well with student achievement. But we now know that feedback can have unintended effects depending upon the context and the student's attributions. Criticism, for example, may be taken by a student as evidence that he or she lacks the ability to succeed, or it may be interpreted as evidence that the teacher thinks that one has the ability to improve. Thus the kind of feedback and the previous relationship between the teacher and the student may determine whether the feedback produces a reduction in motivation or increased motivation. (p. 469)

The fact that the UTAs were consistently secure about their ability to offer feedback, combined with McKeachie's cautions about unintended effects, means it will be important, in future investigations, to examine the nature of [pedagogically untrained] UTAs' feedback offerings and their potential effects on student motivation.

Frustrating/Difficult.

Codes for *frustrating/difficult* were associated with many aspects of the UTAs' teaching experiences, from time management to students not taking more responsibility for their own learning. These codes were more prevalent in the teacher-oriented theme Self-concern: UTA as Teacher, than they were in the Concern for Students/Learning

theme. However, this does not mean that the UTAs were less frustrated about their students' learning, instead it is an indication of the importance the UTAs were placing on their own performance as teachers. Here is an example of the code for *frustrating/difficult*, when it was associated more with concern for student learning than concern about the performance of the teacher-self:

FAW I is supposed to focus on grammar, and FAW II is supposed to focus more on the essay writing part. But a lot of them still have bad grammar in the second part, so it's really confused, because they're making all the grammar errors plus they're making the essay errors. They're not really learning either of them well.

The UTAs related their experiences of marking as “looking for errors” and “docking” points per error. Comments about employing prescribed rubrics for marking their students' writing and overseeing their students' use of rubrics for peer assessment, coded *frustration*, emerged from the points of view of every thematic role (employee, apprentice, teacher-oriented, learning-oriented). Several UTAs expressed frustration with their inability to reward students' creativity or critical thinking in writing via the assessment process. The following comments are representative of those expressing concern from a learning-oriented point of view: “a lot of the times the content is amazing, and it's there, and it...they've very well-articulated what the question was asking them, but we're looking for grammar;”

You're still docked if you have any grammar errors that you've been taught, that you should know. So this... it ends up being a grammar course, because a lot of the students, for some reason, it hasn't stuck with them;

and,

Well, if I was teaching the course, I could change the rubrics or create the rubrics. Whereas with being a teaching assistant, you just... you have the rubric, and you mark by the rubric, and you don't go off it at all.

Student responsibility for learning.

Although the UTAs were consistently frustrated with the students' lack of personal responsibility for learning, the level of frustration, the tone of the comments, and the evident concern for learning could change within that specific frustration; for example, these two comments, both from post-semester interviews and both on a similar topic, illustrate the variety within categories and coding: "I don't think teaching is useless, but I mean, it really does depend on the students. If your students don't want to learn anything, then ... you really don't have any power over that," and from a different participant:

I was able to definitely empathize with them a little bit more. So that, kind of, changed my thinking about ... because I know at the beginning of the semester, I was like, "Well, it's up to the students to do their learning for this course." But, like with every course, it's definitely a team effort . . . it's less of just the student trying to learn everything themselves and more a combination of the teacher and the student working together.

As mentioned in an earlier section, since the UTAs were "not the teacher," and yet neither was "the teacher" present in the sense they were most familiar with from their own experiences as students, the UTAs seemed to need a place to locate the responsibility for the act of teaching. Sometimes they placed it with the course designer, sometimes with the textbook or online resources, and sometimes with the students who were supposed to take responsibility to "teach themselves."

Conceptions of Teaching

In both sets of interviews, UTAs responded to questions about their own experiences as students, such as “thinking back to your experiences as a student, and teachers that you thought were very good teachers, what were some of the skills they had that you appreciated?” These questions were in place to tease out more information about the UTAs’ conceptions of teaching, as were questions such as “after this semester, what would you like your students to say about you?” It was in answer to these questions, rather than to the more direct “what is teaching,” that the UTAs offered their more affective responses, and many animated narratives of “good” and “poor” teaching they had experienced. Responses to these questions were also where most of the codes for teacher characteristics were paired with *frustrating/difficult*, *surprised by*, *positive*, or *empathy for*, as well as *student responsibility*. When interpreting their responses, it is important to remember that this population of UTAs were all high-performing students.

Prior to the second set of interviews, individual participants’ pre-semester survey responses were compared to their post-semester responses, and a large portion of the second set of interviews was devoted to asking the participants about changes in their responses to the survey questions. This portion of the interviews was intended to help answer the second and third research questions:

- what changes take place in the UTAs’ conceptions of teaching during the 13-week semester experience?
- what are the UTAs’ beliefs about the relationship between their own past student experiences, their current teaching experiences, and any changes that may have occurred during the semester in their conceptions of teaching?

According to Entwistle, Skinner, Entwistle, and Orr (2000),

There may well be a developmental progression between unexamined beliefs and conceptions of teaching, although prior experience will strongly influence the starting point and any subsequent developmental pathway. Among the student teachers, there was some indication that reliance on a guiding metaphor or image provided greater clarity in thinking about teaching than beliefs, but such an image would be too simple to match the complexity of everyday teaching.

Unsophisticated conceptions, with or without guiding imagery, also involve unrealistic over-simplification of experience. (p. 22)

The next chapter will include discussion of the implications of UTAs developing their conceptions of teaching while on the job, and with limited guidance. In 1975, Cogan warned that teachers need more than their “naïve but deeply rooted preconceptions” about teaching:

If we recognize the power and pervasiveness of the processes of social and cultural “molding,” then we must view the future teacher as an individual who is already far along in his professional education. But the fly in this ointment is obvious: the models of teaching he has learned so well just will not do. (p. 212)

Entwistle et al. (2000) note that “newly appointed lecturers in higher education can be expected to hold equivalent beliefs and guiding metaphors which affect their ways of thinking about teaching, and even established staff continue to be influenced by their initial beliefs and by experiences when they were students” (p. 9). Both Cogan (1975) and Entwistle et al. (2000) warn that those with little experience teaching will fall back on models and experiences from their personal histories. Interviews with the UTAs in the

present study bear this out. Their experiences as students clearly affected their conceptions of teaching, and their experiences as teaching assistants reinforced some of those pre-conceived ideas but amended others. While none of this may be surprising, post-secondary institutions have increasingly offered faculty members and graduate students professional development in order to alter the previously accepted norm—learning to teach entirely by trial-and-error.

Summary of Qualitative Results

Interview data from ten of the UTAs was examined in light of a revised version of Fuller's and Fuller and Bown's (1969/1975) Stages of Concern model:

- Non-concern: UTA as Employee
- Self-concern: UTA as Apprentice
- Self-concern: UTA as Teacher
- Concern for Students/Learning

The UTAs' comments were coded by these four large themes. The latter two stages, Self-concern: UTA as Teacher and Concern for Students/Learning, parallel the category *Focus* used in the study's quantitative analysis, i.e., teacher-oriented approaches vs. learning-oriented approaches. The UTAs took on various roles as they performed their duties and tasks, and they appeared to switch between these roles during the interviews as they commented on their experiences.

In their Apprentice roles, the UTAs were most concerned with time-management, with meeting the requirements for marking students' assignments correctly, and they did not appear to consider marking a part of teaching. As apprentices, they often denied being

“teachers.” However, at other times, the UTAs spoke from a teacher’s point of view, as though inhabiting the role of teacher when commenting on their experiences.

The UTAs’ responses to the question “what is teaching?” related directly to the first two research questions. Responses to that question were often accompanied by anecdotes from past experiences as students, and the responses were coded according to the UTA’s point of view when answering. Sometimes the answers were teacher-oriented (Self-concern as Teacher theme), and other times the answers were learning-oriented (Concern for Students/Learning theme). Some of the UTAs’ comments were unequivocally from a teacher’s point of view and demonstrated Self-concern in the teacher role, for example, comments about enthusiasm, motivation, or communication. Other comments were unequivocally from a teacher’s point of view but demonstrated Concern for Students/Learning. At times, the UTAs referred to themselves as “teachers,” despite having denied taking on that role elsewhere in the interview. Codes for three other types of comments: marking and feedback, frustrating or difficult experiences, and the students’ responsibility for learning were similarly divided between these two themes, depending on the point of view, or role, from which the UTA appeared to be making the comment.

The idea that teaching is not about the tasks involved in doing the job, but was about the individual characteristics of teachers was an emergent concept. Codes for the characteristics of teachers identified by the UTAs’ are remarkably similar to Feldman’s foundational taxonomy of teacher characteristics (Table 18).

While the UTAs’ comments were often easily categorized according to a certain point of view or role, occasionally they appeared to straddle roles or to inhabit more than

one role without any demonstrable awareness of inconsistency. Certainly, there was no smooth transition from one stage to another. While there were indications of a general trend from greater self-concern to a greater concern for students and learning, this was neither a steady progression through stages nor a consistent trend.

Chapter 6: Discussion and Recommendations

The present study examined undergraduate teaching assistants' conceptions of teaching before and after a semester working in the FAW Program. The circumstances of the UTAs' employment encouraged them to occupy more than one role: student, employee, apprentice teacher, and—at times, and for certain teaching tasks—they more fully occupied a teacher role than has been noted in the literature on traditional UTA roles. Thus, some of the interactions they experienced in FAW were unprecedented, unexamined, or unreported in the literature on Canadian post-secondary education and therefore worthy of exploration.

In this study, the first and second research questions (what are the UTAs' conceptions of teaching prior to teaching? and what changes take place in the UTAs' conceptions of teaching during the 13-week semester experience?) were partially answered by responses to the pre- and post-semester survey questions. The survey responses were left-skewed overall, meaning that the UTAs found nearly all the questionnaire items “important.” The lack of range in responses may have been due to a number of causes: the UTAs' enthusiasm at their new venture, naiveté about teaching, or anxiety about pleasing their university instructors. Regardless of the reason, the UTAs rated all the question items quite high at the beginning of the semester (Figure 8) and only slightly lower overall after the semester.

The lack of range in the UTAs' responses made it more difficult to discern change overall between the two surveys. However, when the post-semester survey responses were analysed in light of weighted responses to the pre-semester survey, the relative change in importance was statistically significant—the UTAs found learning-oriented

items of greater importance after the semester (Figure 10). This means that, concerning the difference between teacher-oriented types of tasks and learning-oriented types of tasks, the UTAs did show significant change over the course of the semester: a significant overall increase towards the importance of learning-oriented tasks (Figures 9 and 10).

Statistical testing of sub-categories within Focus (i.e., either a teacher-oriented or a learning-oriented focus) revealed even more specific results about change in the UTAs' responses. For example, the teacher-oriented sub-category, Classroom Management, decreased in importance enough to have a significant effect on the overall change in Focus between the two surveys. The learning-oriented sub-category, Student Needs, was a significant factor in the difference between the first and second surveys. It was the only group of items to increase in importance over the semester (Figure 7).

The UTAs' responses were necessarily constrained by the survey design and the questions asked, as noted in the Methods and Methodology chapter. However, the study's mixed methods design allowed results from interview data to fill in some gaps, and the multiple stages of the design allowed partial analysis of the survey data to inform the semi-structured interviews. For example, analysis of the interview data supports the quantitative finding about change in the UTAs' ratings of importance for Student Needs. Interviewees showed greater concern for the needs of students in the post-semester interviews than in the early-semester interviews. Interview data further revealed that, while the UTAs responded to the question items about *teaching tasks* in the surveys, they did not conceptualize teaching in that way. Instead, they thought of teaching in terms of the characteristics of individual teachers.

Both quantitative and qualitative data offer some support for the UTAs' development towards taking on a teaching role. The third research question was more complex than the first two: what are the UTAs' beliefs about the relationship between their own past student experiences, their current teaching experiences, and any changes that may have occurred during the semester in their conceptions of teaching? Interview questions were intended to explore the UTAs' perceptions of and responses to their teaching experiences in light of their past experiences as students. Over the course of the semester, the UTAs exhibited a general trend moving from inhabiting mostly employee and assistant points of view towards thinking of themselves more often in the teacher role, and they moved from mostly self- or teacher-oriented concerns towards more student and learning-oriented concerns. Further discussion of specific findings will demonstrate some of the points at which quantitative and qualitative data supported and informed the interpretation of both.

Conceptions of Teaching

Change in the UTAs' conceptions of teaching in the present study was uneven, inconsistent, and dependant on the moment or the task. In 2000, Entwistle, Skinner, Entwistle, & Orr studied student teachers' conceptions of "good teaching," and concluded:

The nature of conceptions may involve strong imagery, as well as related emotions, recollected events, formal knowledge, and established relationships between ideas . . . It is thus not possible to provide a fully satisfactory account of a sophisticated conception of teaching without recognising an amalgam of cognitive and affective components. (p. 21)

The UTAs' conceptions of teaching were such an amalgam: they were convoluted, and they originated from more than one source. Their conceptions were largely based on their experiences as students, and they accessed those experiences to develop their own teacher identities; for example, this UTA expressed her teaching goals in terms of memories of her needs and desires as a student:

I guess that I was . . . efficient in marking and getting things back in time. I know that's a complaint that I would have a lot of times, especially in first year. Just, I wanted my mark on certain midterms and certain assignments, and I'd wait weeks and finally I'd get it back. And I'd try to be quick with that, because I know that I would want that if I was a student.

As the UTAs who were interviewed discussed teaching, they cognitively "moved" between different roles or identities, sometimes switching points of view in mid-sentence. One a priori hypothesis in the present study was that UTAs' conceptions of teaching would be affected by their teaching experiences during the semester, and that their concerns, and possibly changes in their stages of concern, might offer some insight into how their conceptions of teaching were formed and how they might have been affected. However, the UTAs did not progress smoothly through stages of concern from teacher-oriented concerns to learning-oriented concerns. Their conceptions of teaching were less focused on the tasks or activities of teaching and more focused on their concerns about their interactions with students, the *characteristics* of teachers, based on their own student experiences and on the affective aspects of their work.

Stages of Development

Fuller's (1969) early supposition that the concerns of teachers-in-development followed a predictable sequence from self-concern to concern about impact was framed as tentative, and her report was accompanied by numerous questions in need of consideration, including, "can some individuals skip a phase, be in more than one phase at a time, regress to an earlier phase?" (p. 222). Not unexpectedly, in the present study, it was often difficult to discern whether a specific comment originated in only one stage or straddled two. Some concerns segued as the UTAs switched points of view from one role to another, for example:

I mean, the TAs in classes that I'm in, they didn't really do too much teaching, because that's up to the professor. . . . I actually think that for the online TAs, it's almost more teaching, because the instructor doesn't have lecture hours, so it's more up to us.

There were some indications that progress from teacher-oriented concerns to learning-oriented concerns may have been a trend; however, there was not clear progression from one stage to another. The UTAs inhabited multiple roles, and switched rapidly between perspectives in those roles, depending on the task at hand.

In her early-semester interview, one participant responded to "what is your primary responsibility as a TA?" with "my primary responsibility would just be grading them fairly and un-biased." She responded to the same question after the semester with "The role of the TA is to give supplementary information for students who don't really understand the concepts." Another interviewee stated in her early-semester interview that

teaching is “sharing the concepts, sharing knowledge with that person, in whatever means you can,” and

they expect to come to you, and for you to be able to provide them with all their answers . . . They just . . . they feel like they are accessing the answer machine. They actually need you, and they want you to provide the answer [laughs].

The same UTA, after the semester, said “teaching is not about you. It’s actually mostly about the person or the people you are trying to teach. That was something, I guess, it’s like a – not a circle [laughs] – like it goes back and forth.” Most, but not all, of the interviewees demonstrated similar, partial, tentative movement in the direction of an increased learning-orientation.

Concerns

When applying a framework such as Fuller’s, first developed in 1969 and further developed in 1975, it is necessary to remain aware of the connotations of key terms, since language evolves and connotations may affect interpretation. Fuller’s use of the term concern was intended to connote the emotional aspects involved in becoming a teacher, a deliberately selected connotation that may have been intended to unsettle a complacent system that she viewed as inadequately preparing teacher candidates for their positions (Fuller, 1969). Hall and Hord (2001) attribute Fuller with “the idea of calling one’s feelings and perceptions concerns” (p.58). Cho, Kim, Svinicki, and Decker (2011), suggest that Fuller intended the term to indicate “interest,” as well as emotions such as “apprehension” and “distress.” Cho et al. (2011) define the term as either “something teachers worry about or something they care about” (p. 270). In the present study, interviewees frequently referred to concerns in the sense of apprehension or distress in

relation to their employee roles, specifically their concerns about time management and efficacy with the complex rules for marking. The UTAs alluded to frustration when speaking of their roles as teachers and of their students' lack of personal responsibility for learning. Concern then, may hold multiple meanings, including—but not limited to—apprehension, worry, frustration, and distress. In the present study, “concerns” held some of these negative connotations, but perhaps fewer than in Fuller’s work. Compared to the pre-service and in-service teachers’ contextual settings, the UTAs’ performances of their roles were less central to their anticipated careers. Depending on the specific context within the UTAs interviews, the term *concern* may connote simply “interest” or “the focus of the moment.”

Affect

In the present exploratory study, unexpected findings were both welcome and cause for some re-direction and delving. The extent of UTAs’ affective responses to questions about teaching quality was one such unexpected finding. They did not treat the topic of teaching as an objective discussion of the profession’s activities and approaches. Teaching was personal. Their narratives of past experiences as students included both positive and negative experiences (a factor of the interview questions). The opinions they expressed about teaching quality were self-assured. Having been on the receiving end of various teaching approaches and styles as long-time students, they were speaking from a place of expertise when discussing the characteristics of teachers.

The UTAs, for the most part, did not speak of the surprises and obstacles they encountered while teaching as challenges. Instead, they expressed a great deal of frustration with the difficulties they encountered in their positions, for example,

They'll make the same mistake over and over on assignments, even though you specifically said "Do not do this. You have to do it this way," and then, you have to walk away, because then you're angry and you can't mark them angry, and it takes longer which is more frustrating. There's a lot of frustration.

It may be that students who are planning to teach as a career path will more easily see frustrating and difficult experiences as challenges, whereas the UTAs did not generally speak in terms of next steps.

Another area of affect the UTAs raised was empathy for their students. In their rapid switching between roles/identities, they also switched between empathizing with and frustration about their students. Empathy such as the UTAs exhibited is one reason that's often mentioned in the literature for employing UTAs as peer tutors in the classroom (Fingerson & Culley, 2001). This is an example of a comment coded "empathy":

I think that the teacher should be, like, approachable and relatable, and that's what I tried to do with my students. Definitely it's try and relate with them and understand that we're both in the same boat, we're both taking full course loads and we both want the best mark. So, I think that helps me relate to them.

Fingerson and Culley (2001) note, "this provides not only a role model but also someone to whom the students can go who more fully understands their undergraduate experiences than do instructors who are often far removed from undergraduate life" (p. 307). On the other hand, the UTAs' frequent frustration with their students' lack of responsibility for their own learning came from the same source. Although the UTAs are close to their own experience as students, giving them the ability to empathize, UTAs also tend to be

students of a certain stripe, who were successful because they did take personal responsibility. It can be difficult for them to empathize with students who approach their learning differently. As one UTA put it,

Most of the students just – they didn't even open up their feedback. Like, I had a student tell me she didn't open up anything that I returned to her. She came into my office and said that, so that's kind of a learning moment too, where it's like, "Oh, people don't care, I guess."

The UTAs frequently mentioned feeling frustration, empathy, anger, anxiety, and occasionally pleasure. One noticeable trend was their tendency to move from surprise and frustration at the behaviours of their students, which they took personally at first, towards a more resigned attitude they expressed as the students needing to take more responsibility for their own learning.

Characteristics of Teachers

Another unexpected finding from qualitative analysis of the interview data is that the UTAs' conceptions of teaching, prior to and throughout the semester, were closely aligned with the types of data gathered by student ratings of instruction. The UTAs' descriptions of teachers and of their experiences—particularly their past experiences as students and their personal goals for the semester of teaching—indicated that the UTAs did not conceive of teaching in terms of teaching tasks or activities so much as they thought in terms of the teacher's characteristics (Table 15). The characteristics identified by the UTAs, parallel research findings about teacher characteristics or "dimensions of teaching" based on student ratings of instruction (Feldman, 1989a).

Several characteristics of teachers are common to student ratings of instruction, despite some variance from institution to institution. Students are generally asked to rate their classroom experiences based on two categories, the design of the course and the characteristics of the instructor's teaching (Abrami et al., 2007; Feldman, 1976; Marsh, 2007). In the past, it was a fair assumption that a course was designed by the instructor, and so the ratings in both categories were closely connected, but the grounds for that assumption have been eroded by recent changes in post-secondary institutions' hiring practices. Course instructors may, or may not, be involved in the design of the courses they teach (Magda, Poulin, & Clinefelter, 2015). In the present case, the UTAs, like many contract or sessional instructors, had no power to alter the pre-designed course, and this lack of power affected their frustration levels. It also added to their reluctance to see themselves in a teaching role, as though the design of a course was a more important defining factor in their conceptions of teaching than individual interactions with students.

It is possible that the UTAs, having been exposed to ratings questionnaires several times in their previous few semesters as university students, were influenced by those very questions into conceptualizing teaching in terms of teaching characteristics. However, in the long history of student ratings of instruction (SRI) development, the characteristics and dimensions of teaching used in SRIs were originally based on statements made by students and faculty members about teaching (Abrami et al., 2007; Feldman, 1976; Marsh, 1987, 2007). So, it is also possible that the UTAs' many years of experience as students observing their own teachers is responsible for the similarity between their conceptions of teaching and typical SRI characteristics of teachers.

Interestingly, although the UTAs describe teaching as a collection of

characteristics belonging to the teacher rather than tasks or activities performed by the teacher, it is when describing their own performances of teaching tasks that they most often speak from the teacher point of view.

“Real” Teachers

The present study involves courses that were taught in a largely online format. It is not within the purview of this study to explore differences in courses taught mostly online versus mostly face-to-face. Since the FAW courses are not fully online modules with entirely automated feedback and marking, the UTA presence in a teaching role is added value: the UTAs interact directly with students; they offer feedback on the students’ assignments and answer questions; they hold office hours; they contribute supplemental explanations to assignment instructions and to course content materials; and they mark assignments according to a rubric, but using their own expertise and judgement. In these ways, the FAW UTA role is little different than the role of many sessional or adjunct faculty members who are course instructors in blended courses they have not designed but inherited.

With these factors in mind, it is interesting to note that the UTAs held technology-enhanced, blended courses—that were mostly online versus mostly face-to-face—to a different standard when it came to teaching. Teaching mostly online was not only a different method for teaching, it was not “real” teaching. The explanation for this binary conception of teaching methods, categorizing *real* or *not real* teaching, may lie in the UTAs’ conception of teaching as more strongly associated with the characteristics of teachers than with the activities of teachers. The UTAs viewed online teaching as peripheral or supplementary to “real” teaching. For example, when questioned further

about responses such as “I’m not a real teacher,” they referred to their constraints in terms of making any alterations to the course design, the content, or the marking schemes. The inference was that the “real” teacher was the designer of the course, and the UTAs were peripheral, despite their comments about the importance of “helpfulness,” feedback, and communication to “good” teaching and to student learning—and despite the fact that these are the very aspects of teaching on which the UTAs spent most of their time, concern, and energy. Similarly, the UTAs did not consider on-line courses “real” courses. The UTAs inhabited what they viewed as a distant position from their students, by virtue of the mostly online platform, and the lack of face-to-face contact added to their perceptions of being peripheral. “I just feel like I’m talking to . . . I’m giving feedback to my computer. I don’t know if the other person on the other end actually is listening to what I’m saying.” The UTAs differentiated between a performative version of teaching (a single teacher in front of a group of students) that was “real” teaching, and a one-to-one version of teaching (via email communications) that was not “real” teaching. Even when the UTAs were communicating with all their students at once, through mass emails or online platform announcements, they seemed to perceive the students who were receiving the communication as single, faceless entity. By contrast, they did conceive of the limited occasions in which they were face-to-face with students, such as during office hours or while proctoring exams, as “real teaching.” Despite the UTAs’ reluctance to call themselves teachers, their interview comments often revealed that they were speaking from within the role of teacher as they told their stories. Thus, the UTAs were reluctant to think of themselves teachers, not only because the position title was “teaching assistant,” but because they were rarely teaching face-to-face.

Connotations of Debate and Discussion

The UTAs' interpretation of the word "debate" was unexpected. In the questionnaire item *A teacher should model debate and discussion about the topic*, the UTAs focused on the word "debate" as a negative activity. They gave surprisingly low ratings to the importance of debate and discussion, the lowest mean response of the 14 the learning-oriented items. When asked about the low ratings for modelling debate and discussion in interviews, comments revealed the UTAs thought of debate as an unenjoyable and pointless activity from secondary school that would not be aligned with good teaching, for example:

Interviewer: So, you don't think that modeling for the students about debate and discussion over a topic is as important as these other things?

Participant: I don't really like debates, because debates gives you the opportunity to say that two different things are correct. You're just arguing (laughs). I don't see how that helps.

In the culture and practice of post-secondary education, the concepts of debate, discussion, and argumentation are generally considered essential for good scholarship, important processes for countering the dangers of ideological thinking, and essential for creating social balance and maintaining a just society. Interview data revealed that, for many of the UTAs, the terms held significantly different connotations.

The importance of these basic concepts and values held by those in the academy and the disconnection with how the UTAs interpreted the terms cannot be overstated. The survey question items were based on assumptions about educational values and conceptions of teaching held by experienced scholars and educators. The undergraduate

students who interpreted the terms differently are not at fault, and with more time in scholarly endeavours, they may very well adjust their conceptions of debate, discussion, and argumentation. However, this single difference in fundamental educational concepts and values points again to the question, “who is teaching?”

Training

The UTAs in the FAW program were not expected to teach without structure. They had thoroughly prescribed assignments, assessments, and rubrics with which to work, and they had informal supports and mentoring by the more experienced undergraduate “Head TAs.” The program designer was well-versed in the importance of setting up a guided, structured system for peer editing—for the students to follow and for the UTAs to oversee. In a 2008 article, she discussed the challenges of designing peer-editing methods for approximately 2000 students, “the undertaking is not one for the faint of heart or the short of patience; after all, you can’t let your fledgling reviewers fly before they can walk,” and “in my experience, the key to making peer review an effective pedagogical tool is in preparation, patience, and a willingness to peruse the literature for the best practices” (Singleton-Jackson, 2008, pp. 3-4). The UTAs were trained to apply the FAW peer-review method and assessment processes. However, they expressed a great deal of frustration with these. It is possible that, had the UTAs been offered some degree of training in the pedagogy behind the assessment scheme, parallel to the kinds of professional development offered to GTAs or teacher candidates, the additional training might have mitigated their frustration and their approach to the marking process. Gibbs and Coffey (2004) note that “training can change teachers such that their students’[sic] improve their learning,” and “without the support of training no such positive change in

student learning is evident” (p.98). The UTAs’ frustration with the assessment processes and marking scheme in FAW is one example among many that suggest pedagogical training may be valuable for those who perform teaching tasks. Hogan and Norcross (2012) conclude that research evidence supports employing UTAs in certain roles; however, they add, “consider a training process for your UTAs. Every source emphasizes the importance of such training,” and they recommend that the training process “[encompass] both formal experiences, such as a seminar, and informal contacts, such as weekly meetings between the UTA and the supervising professor. Include ethical issues in teaching, especially respecting confidentiality and avoiding dual relationships” (p. 6).

Differences Between GTAs and UTAs

The present study was conceived in part to address a gap in the literature around a relatively new phenomenon, the practice of employing undergraduate students to fulfill greater responsibilities than had been expected of UTAs in the past. Undergraduate students have long performed duties as teaching assistants to great effect, both pedagogical and practical. Necessary tasks associated with teaching courses in post-secondary institutions—usually clerical in nature, including some forms of objective marking—when performed by UTAs, may save the instructor time and allow him/her to devote that time to other endeavours (Hogan et al., 2007).

However, the beneficial-but-limited roles of undergraduates as peer-learning supports (UTAs) and the traditional roles of graduate students as apprentice professors (GTAs) ought not to be conflated without due diligence to the rationale, boundaries, and teaching tasks tied to each of those roles. Hogan and Norcross (2012) outline some crucial differences between UTAs and GTAs that may impact faculty supervisors:

Anyone having experience with GTAs and now contemplating the use of UTAs should be alerted to crucial, practical differences between the two categories.

First, UTAs typically do not bring the same total commitment to the enterprise as do GTAs. Almost by definition, GTAs have committed to a field of study, and likely think of their role as a first career step. Not so for typical UTAs. UTAs devote most of their coursework outside the field in which they serve as assistants. (p. 4)

They also discuss the challenges for faculty members planning to hire, train, and support UTAs as partners in teaching, because these activities are not generally supported by a graduate studies administration unit, and the workload falls to faculty members (p. 4).

There are additional considerations for those who are planning to design roles and duties for UTAs, such as the relative age and/or maturity levels between (typical) undergraduate and graduate students, the lower turn-over rate for PhD students, and GTAs' experience with research and the literature in their fields. Hogan and Norcross (2012) offer another possible differentiation that may affect the roles assigned to each level of teaching assistant:

GTAs and UTAs differ in degrees of responsibility. GTAs may have complete responsibility for teaching a course, a lab section, or a significant part of a course. That would never hold for a UTA. A UTA may handle part of one class meeting or a discussion section. In a related vein, GTAs may have complete or nearly complete authority to grade students, whereas UTAs may grade only objective tests. Finally, we confront the ubiquitous concern about confidentiality. How much does or should the UTA know about fellow undergraduates? Of course,

GTAs need to be alerted to the professional ethics of confidentiality, but they occupy a higher step in the hierarchy with respect to undergraduates, much like faculty do. (pp. 4-5)

According to Hogan and Norcross, there is a great deal of difference in the degree of responsibility typically assigned to GTAs versus UTAs for several reasons having to do with different levels of experience and commitment to an academic career. The UTAs in the FAW program had responsibilities more closely resembling those typically assigned to graduate students than to undergraduates. As in Sutherland's (2009) study, the roles assigned to these UTAs defy previously established conventions for responsibilities, and without the accompanying training and support typically offered to graduate students.

Peer Editing.

Peer editing by the students enrolled in the FAW courses is a "cornerstone" of the program (Singleton-Jackson & Colella, 2012, para.10). The multiple benefits of peer-supported learning activities, such as peer review or peer editing, in undergraduate education are well-documented in the literature. Well-designed peer-tutoring activities, overseen by the instructor, can benefit students, teaching assistants, and faculty members (Gordon, Henry, & Dempster, 2013; McKeachie, 1999; Rangachari, 2010). Some benefits of note are increased student engagement, more feedback offered sooner, improved retention; reduced faculty workload; increased social interaction around learning, and improved meta-cognitive awareness, as well as gains in self-efficacy, self-confidence, and empathy (Colvin, 2007; Topping, 1998; Whitman & Fife, 1988). While the benefits of peer-editing or peer-mentoring activities are supported by the research evidence, authors consistently offer cautions about the necessity for careful planning,

close supervision, and time investment on the part of the supervising faculty member (Baker, 2016; Hodges & Brill, 2007; Singleton-Jackson, 2008). Baker (2016) notes that “in spite of the recognized value of peer review in improving students’ writing, self-assessment, and learning, there is substantially less research available on the process of structuring the peer review to maximize these benefits.”

There is a great deal of difference between UTAs acting as peer tutors or peer editors—a standard UTA role—and UTAs supervising their students through the process of peer editing each other, which is one of the FAW UTAs’ responsibilities. The course designer planned the FAW students’ peer-to-peer editing activities with care and foresight; nevertheless, the UTAs are responsible for overseeing, assessing, and responding to students about their peer-editing activities. During one post-semester interview, a UTA was asked about the change in her response to the survey question about “creating a secure environment for expressing ideas,” and the UTA made this remark:

Our students do... we have peer reviews, which are anonymous assignments, and sometimes our students do put things in the assignments that are not appropriate, or call each other names in the assignment and make rude remarks to each other, because it’s anonymous. Or make fun of people. So, I think you [students] should feel secure, but you shouldn’t be secure enough to express whatever you want [laughs].

The research literature frequently mentions two points concerning UTAs as partners in the classroom: (a) peer mentoring and peer reviewing by undergraduates are beneficial, but these activities require careful planning and oversight by experienced

faculty members (Evans, 2013; Simpson & Clifton, 2015; Topping, 2010), and (b) UTAs who participate in these activities should undergo specific training for their roles (Strijbos & Sluijsmans, 2010; Sutherland, 2009). Given the expert recommendations about the optimal conditions under which peer assessments might take place, it is important to question the impact of placing UTAs in the position of *supervising* peer-editing activities, rather than *participating* in the activities as peer reviewers.

Alternate Models for Working with UTAs

In the research literature that supports undergraduate peer-to-peer mentoring interactions and peer-editing activities, authors generally outline multiple benefits for the UTAs, the students, and the faculty members. Moreover, there are some common themes in their recommendations for implementing programs for UTA/faculty partnerships having to do with models for training, mentoring, and otherwise supporting the undergraduates involved in teaching activities (Fingerson & Culley, 2001; Hogan et al., 2007; Hogan & Norcross, 2012; Sutherland, 2009; Wallace, 1974). For example, from Filz and Gurung (2013): “we propose a model of training that emphasizes not only the fundamentals of teaching but promotes characteristics that are directly related to UTAs being perceived as helpful, qualified, and accessible to students” (p. 50). Hogan et al., (2007) offer a substantial list of tasks carried out by UTAs in various courses, and they describe the activities of a one-credit UTA preparation seminar. They add, “perhaps most important, UTAs do not grade the work of fellow students, although a UTA may score an objective exam” (p. 188). Fingerson and Culley (2001) advocate for making sure the UTAs benefit from the experience, rather than using them as, in the words of one of their participants, “cheap labor” (p. 312). Sutherland (2009), whose research revealed that

some UTAs were practicing in far less nurturing environments than most of the literature to date had reported, says “what the department expected of the undergraduate tutors was no different from what they expected of the graduates and professionals” (p. 149).

Like others advocating for UTA training to accompany their roles and duties, she recommends providing “more support and guidance to these inexperienced teachers” (p. 162). The possible effects of under-supporting UTAs in their teaching roles has not been reported in the research literature, but recommendations for pairing training and support with UTA duties are quite consistent. This excerpt from a post-semester interview in the present study sums up one participant’s experience of teaching:

I spent one semester as a TA, and now I feel like I know less about it, and I’m having more trouble defining what it is I was doing, than I did before when I was so optimistic. And I was just this like, “Yes! I’m a TA! And this is what I do, and this is what learning is!” But [laughs] I think that anything comes with its fair set of challenges, but I think that for me, as a person, I would... Teaching is not a career path. I think that’s what I got the most out of it, in general, in relation to my life is – teaching isn’t a career path that I would pursue.

At first glance, her words may come across as a condemnation of the lack of supports in place for UTAs in the FAW program. However, “I feel like I know less about it, and I’m having more trouble defining what it is” is not necessarily a negative comment in terms of her learning about teaching. This UTA, whether through her own reflections, informal supports by more experienced UTAs, interactions with students, or some combination of these, had shed some of her (possibly naïve) self-assurance and some of her preconceived conceptions of teaching. Her statement reflects greater progress than an entrenched

reiteration of her pre-teaching conceptions would have. Fuller and Bown (1975) say that becoming a teacher entails unlearning old habits and disrupting previously smooth performance. Considering the constraints of “the powerlessness of their position, the paucity of their resources, and their inadequacy as teachers, it is not surprising that prospective teachers are typically anxious and preoccupied with their own survival” (p. 49).

Recent Changes to the FAW Program

From well over 2,000 students in the fall semester of 2011, the FAW Program has seen declining enrolment. There were 1,598 students enrolled when data for the present study was collected in the fall semester of 2013, and 987 students were enrolled in the fall semester of 2015 (University of Windsor, 2015). The Program has undergone further changes in the past two years, and the full-time faculty member who designed the course is no longer involved. Two full-time instructors with MAs in English were hired to manage the Program and supervise the UTAs and a few GTAs, who now hold face-to-face labs for the students. (None of these changes were a result of the present study.) The courses are now called “Effective Writing.” Enrolment numbers for 2017/18 are not available at the time of this writing.

Future Research

Further research on current practices at Canadian universities is needed, concerning their use of UTAs and the possibility that UTAs’ roles and tasks are changing. For individual UTAs, the impact of modified teaching roles on their development as scholars (e.g., has performing the role of teacher made the UTA a better learner?), as well as the impact of those roles on their beliefs about self-efficacy and

identity, or the impact of performing in those roles on their perceptions of their own instructors, are rich areas for exploration. The affective impact of their roles on UTAs, their frustrations and the disconnection they feel between their lack of power and their responsibilities, are also worthy of research. On a program or course level, reviewers could assess the impact of role modifications, or potential “role creep,” and they could compare student learning outcomes before and after changes were instituted.

Additionally, reviewers might compare results and/or replicate their inquiries with other UTA partnership models, to discover what findings might be generalizable.

The benefits and consequences of UTAs’ versus GTAs’ assigned roles and duties ought to be carefully considered, and the potential challenges of employing UTAs in such modified roles—to the students, the faculty members, and the teaching assistants—need to be examined. As Fuller and Bown (1975) put it, “teaching teachers is a bit like trying to repair a speeding automobile in the midst of a bitter argument about how it should be done. More information about how the car runs is badly needed” (p. 49).

The present study was exploratory in nature, and while some a priori hypotheses appear to be supported by the data, the study did not generate theories so much as questions and a few more hypotheses to be explored. For example, are the roles and responsibilities of these positions in the FAW program both suitable and beneficial to the UTAs, and since other models of UTA partnerships advocate ongoing, structured training and mentoring, might UTAs in the FAW Program benefit from similar supports?

Survey instrument.

While the survey had high uptake from the selected population (29 of 30), the population was small, and the context in which the population was situated was atypical.

The survey instrument is an adaptation from instruments typically used in different contexts with different populations (i.e., teacher candidates, graduate students, and faculty members), and it was used for the first time in the present study, so the results have not yet undergone a confirmatory factor analysis. The questionnaire did not include items about ideas that emerged from the interview data. In future, the survey could be revised to reflect nuances attuned to the UTA population more closely and to address some of their pre-conceived conceptions of teaching. Refinements might also address the UTAs' affective concerns in more detail, and they could take into account teacher characteristics or dimensions of instruction based on the literature from student ratings of instruction. With a revised instrument, the alignment between survey questionnaire data and interview data might be fine-tuned for a deeper exploration of the UTAs' experiences. The instrument could then be employed to compare cases with programs at other post-secondary institutions, should they employ UTAs for similar roles and responsibilities in the future.

One unexpected feature of the research design was the possibility that the survey itself acted as a minor intervention. Prior to the semester, the UTAs were exposed to a series of questions about the nature of teaching, with certain prompts about what might be important to "good" teaching. Thus, they may have been more alert to or reflective about their teaching than they would otherwise have been. If the survey did act as an unintended intervention, then for the ten UTAs who had hour-long interviews, the unintended intervention of the present study may have had even more impact.

The present study identified the UTA participants' reflections on teaching (through the survey and interview process) as, potentially, an unintended intervention in

their conceptions of teaching and their roles. This begs the question: what might be the consequences of intentional guided reflection, interventions, and/or purposeful UTA training in pedagogy? Future research could involve the UTAs in deliberate interventions and deliberate reflection on teaching.

Program Review.

In post-secondary institutions, for courses that students are required to take outside their chosen disciplines, there is greater onus on the institution to implement course review. This is even more essential when a program's courses have a number of innovations: technology-enhanced, blended design; an extremely high ratio of students to instructors¹; and greater than usual teaching responsibilities for UTAs. Tenner (2018) says, "efficiency is mostly good but, like all good things, it can be carried too far" (p. ix) and:

The goal of achieving more with less effort still thrives. I would apply the word "efficiency" to all human technology intended to reduce human time needed for a task, whether buying a product, learning a subject, planning a trip, or making a medical decision. (p. xii)

The UTAs were working in a program similar to a massive open online course (MOOC) and carrying responsibilities usually reserved for those with more experience, expertise, or at least interest in teaching, so results from the present study may not be generalizable.

¹ During the years of the FAW program's highest registration numbers, there were three instructors (MAs) actively overseeing the UTAs and sections of the courses, in addition to the full-time faculty member who designed the course. As registration in the courses decreased, the number of instructors was reduced to two, and the faculty course designer was no longer involved.

The study was not a program review, but an initial examination of one innovative factor that may inform further review. Should programs employing a similar design proliferate in Canada, the roles and responsibilities of UTAs would require examination in light of the impact on both the individual UTAs and on their students' learning.

The present study also raised questions about “real” face-to-face teaching versus “not real” online teaching, and possible reasons underlying these categorizations that could be explored. In 1997, Ramsden reported on the importance of context to student learning approaches. Students' approaches to their learning depend on their previous knowledge and experiences with the content area, but also on other influences, including their perceptions of and interest in the learning tasks:

These influences are themselves associated with their perceptions of how the work will be assessed and with the degree of choice over content and method of learning available to the student. The perceived demands and support of teachers, and the content of the subject, also influence the students' approaches. (p. 201)

It would be interesting to consider how these influences are played out in the FAW program courses. For example, like the UTAs, do students enrolled in the FAW courses perceive online teaching as “not real,” and if so, in what ways might that perception affect their approaches to learning in the program?

Future program reviewers with greater access to course materials, complete UTA marking guidelines, access to “Head” TAs' informal mentoring strategies for their peers, and access to anonymized student assessments would then be able to examine the ways in which the content and design of the FAW courses and their online delivery platform,

combined with the Instructors' and UTAs' approaches, affect the students' approaches to learning, and impact their learning outcomes.

When contemplating future research on UTA programs and partnerships, it would also be interesting to consider the ways in which these same influences might affect the UTAs' concerns and their approaches to their on-the-job learning about teaching:

- how the work will be assessed,
- the degree of choice over content and method,
- the perceived demands and support of teachers, and
- the content of the subject (Ramsden, 1997, p. 201).

Since these influences in the UTAs' FAW learning context would impact their experience of the program, which might, in turn, impact the quality of their undergraduate university experiences, it would also be important to examine the possible negative impacts and/or the benefits (beyond remuneration) that UTAs might derive from the partnership.

Recommendations

While there is financial benefit for institutions that employ UTAs rather than a more expensive workforce, this is not the only, nor the most important, consideration.

According to Twigg (2003),

Not all tasks associated with a course require highly trained, expert faculty. By replacing expensive labor (faculty and graduate students) with relatively inexpensive labor (undergraduate peer mentors and course assistants) where appropriate, the projects increase the person-hours devoted to the course and free faculty to concentrate on academic rather than logistical tasks. (p. 30)

Multiple benefits are possible for multiple stakeholders when UTAs are employed for the types of peer tutoring for which they are suited. However, there may be far less benefit to all if the contexts in which UTAs are employed are not designed with consideration for appropriate roles, duties, training, and supports. Sutherland (2009) noted that “effective teaching requires subject knowledge and pedagogical expertise,” and she cautions university administrators to carefully “consider the consequences of appointing undergraduate students to these potentially ‘expert’ teaching roles” (p. 149). The conflation of GTA and UTA roles that Sutherland noted in her research, and that seems apparent in the present study, need not become the new normal. As Hogan and Norcross (2012) mentioned, certain differentiations formerly existed between GTAs and UTAs and the roles and tasks each group was assigned. Differentiation between roles held by these different groups of teaching assistants should not be dismissed without examination.

Just as it is with professors, instructors, or GTAs, UTAs’ conceptions of teaching will affect their approaches to teaching, their roles, and the performance of their tasks, which in turn will potentially affect the students’ approaches to learning and their learning outcomes (Gibbs & Coffey, 2004). In the present exploratory study, the UTAs conceptions of teaching came across as a somewhat convoluted mixture of preconceived ideas based on their many student experiences and some shifting ideas based on their shorter, but intense, teaching experiences. The UTAs had multiple pre-determined structures on which to rely, as well as some informal mentoring and supports. However, they might have benefitted from belonging to a more formal community of practice, from greater clarity about their roles in terms of “real” teaching responsibilities, and from a program of deliberate and reflective development in teaching practice. Some of the UTAs

brought this up themselves when asked “what would you say that you needed most during this experience?” one UTA offered this answer, representative of a number similar answers:

[Laughs], I was going to say *experience*. But I don’t know. I honestly feel like it would be helpful to . . . get some sort of training with interacting with students in person, some training in how to teach concepts. . . . but we don’t have any, like, mandatory training for FAW other than our orientation.

Anecdotes from colleagues at more than one Canadian institution over the past several years revealed that, at least in some cases, UTA roles and responsibilities have been undergoing modifications that are not reflected in recent literature. The present study was intended to begin addressing that gap in the research concerning UTAs and current practices at Canadian post-secondary institutions. Results from the study indicate that, in the absence of purposeful pedagogical training, UTAs at one institution (in a program with modified teaching roles) shifted their conceptions of teaching in a slightly more learning-centered direction, and they viewed the needs of their students as more important by the end of the semester. However, these changes were uneven and inconsistent, and the UTAs frequently felt frustrated and uncertain about how to address their students’ needs.

Large numbers of UTAs in Canada interact with students, and their conceptions about teaching and their approaches to interactions with their students will affect the students’ learning experiences. It is incumbent upon Canadian post-secondary institutions to be able to answer the question “who is teaching?” Given that formal, intentional

training in pedagogy and professional development in teaching and learning practice have a positive effect on teachers' approaches to teaching, it is reasonable to consider that UTAs may benefit from similar pedagogical supports, especially if they will be taking on increased responsibilities in their roles.

In future, I recommend that Canadian institutions and program administrators remain aware of the differences between, and reasons for, traditional roles and responsibilities for UTAs versus GTAs and carefully consider the possibility of "role creep" when determining the scope of UTAs' duties. That is not to say that UTAs are not capable of modified roles and responsibilities, but that the situational contexts should be researched on many fronts, and the parameters of employment be well-considered in light of that research. UTAs' roles and responsibilities ought to be matched with training and supports equal to their duties.

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Appendices

Appendix A. Conceptions of Teaching Questionnaire

Conceptions of Teaching Questionnaire

Thank for your help with this research study!

Name¹ First _____ Last _____

1. What is your field of study? _____
2. What year of your studies are you beginning? _____
3. Will this semester be your first as a TA? YES NO
 - a) If not, how many semesters prior to this have you been a TA? _____
 - b) In which course(s) were you a TA? _____
4. In the past, have you ever been responsible for teaching? YES NO
 - a) If so, where, or in what circumstances? _____

5. Have you had any training in teaching? YES NO
 - a) If so, please describe the training _____

6. Would you like to participate in an interview session on the same topic for the chance to win an iPad mini? YES NO

¹ The investigator will code your name with a numeric identifier to protect your anonymity

Conceptions of Teaching Questionnaire

Conceptions of Teaching Questionnaire

As you answer the following questions, please think of teaching in a higher education setting.

To what degree are the following statements about teaching important?

Please circle the number that most closely reflects your concept of teaching.

- 1 = **not very important**
 2 = **slightly important**
 3 = **somewhat important**
 4 = **quite important**
 5 = **extremely important.**

A teacher should:	importance less \longleftarrow \longrightarrow more
a) pass his or her expert knowledge on to students	1 2 3 4 5
b) assist students to construct new ways of thinking about the topic	1 2 3 4 5
c) move students forward through the curriculum	1 2 3 4 5
d) maintain control of the classroom (virtual classrooms included)	1 2 3 4 5
e) select the right pieces of information to present in the right order	1 2 3 4 5
f) encourage students to find answers for themselves	1 2 3 4 5
g) model debate and discussion about the topic	1 2 3 4 5
h) encourage students to apply new knowledge to different contexts	1 2 3 4 5
i) be flexible enough to accommodate student learning needs	1 2 3 4 5
j) repeat information for students who do not appear to understand	1 2 3 4 5
k) demonstrate as well as describe how to accomplish a task	1 2 3 4 5
l) encourage students to broaden their range of resources	1 2 3 4 5
m) make sure students are listening	1 2 3 4 5
n) review information from the textbook material (electronic texts included)	1 2 3 4 5

Please continue on the next page.

Conceptions of Teaching Questionnaire

Conceptions of Teaching Questionnaire

Please circle the number that most closely reflects your concept of teaching.

- 1 = **not very important**
 2 = **slightly important**
 3 = **somewhat important**
 4 = **quite important**
 5 = **extremely important.**

Good teaching is:	importance less ←————→ more
a) knowing the right answers for students' questions	1 2 3 4 5
b) providing students with timely and frequent feedback	1 2 3 4 5
c) explaining classroom rules clearly and keeping students on task	1 2 3 4 5
d) making sure all of the information planned for the course is covered	1 2 3 4 5
e) allowing students to explore and experiment with new ideas	1 2 3 4 5
f) discovering and respecting students' ideas, values, and goals	1 2 3 4 5
g) planning time for drilling and practice before testing students' recall	1 2 3 4 5
h) encouraging students to question their own knowledge and assumptions	1 2 3 4 5
i) explaining information clearly	1 2 3 4 5
j) writing lectures and lesson plans that will cover all the exam questions	1 2 3 4 5
k) assessing students' learning needs and adjusting lesson plans accordingly	1 2 3 4 5
l) encouraging students to identify and solve problems	1 2 3 4 5
m) creating a secure environment for expressing ideas	1 2 3 4 5
n) delivering information in a way that the students will absorb it and retain it	1 2 3 4 5

9. Are there any additional comments you would like to make that were not addressed in the questionnaire?

Feel free to continue on the back —>

Thank You!

Appendix B. Early-Semester Interview Guide

1. What do you see as your primary responsibilities as a TA in FAW?
2. (If this participant has been a TA before) What were your responsibilities as a TA in _____ ?
 - a) What can you tell me about your interactions with the students?
 - b) What else can you tell me about your experiences as a TA?
3. (If this participant has been a TA in FAW) What were your responsibilities as a TA in FAW?
 - a) What can you tell me about your interactions with the students?
 - b) What else can you tell me about your experiences as a TA?
4. If I asked you the question “what is teaching?” what would you say?
5. What are some of the most memorable experiences you had as a student?
 - a) In what ways do you think that experience has affected your ideas about teaching?
 - b) Can you think of other experiences you had as a student that might have affected your ideas about teaching?
6. As a TA, what do you see as your goals for this semester?
7. What goals do you have for your students?

Appendix C. Post-Semester Interview Guide

1. What do you think the role of a TA is?
2. What was your greatest learning moment as a TA?
3. Your pre- and post- questionnaires show a change in your thoughts about x over the semester.
 - a. What experiences do you think are related to that change?
4. What was your relationship with the Instructor?
5. What was your relationship with the Head TA?
6. What would you say you needed most during this experience?
7. If you could talk to a new TA, what advice would you give him/her?
8. If I asked you the question “what is teaching?” what would you say?
9. In what ways have your experiences as a TA affected your thinking about teaching?
10. What would you say your students learned from you this semester?
11. Tell me about what you learned about teaching this semester . . .

Appendix D. E-mail Invitation to Potential Participants

(Initial Contact email, September 13, 2013) / Subject line: Calling all FAW TAs!

Congratulations! I understand you've been hired as a TA for FAW.

You're receiving this email, because I would like you to participate in a research study investigating TAs' conceptions of teaching. (It's for my PhD dissertation)

[Yep, I want to know what YOU think about teaching](#)

Both the designer of the FAW courses, [Dr. _____ and the Instructor, _____] know about the research and have given me the "go ahead" to invite all of you FAW TAs to participate.

[Here's the good part!](#)

All participants will be compensated for their time with either [a \\$10.00 gift card](#) for survey participation (to either Tim Horton's or the Green Bean – your choice),

Or a chance to win an [iPad mini](#) for interview participation.

More in-depth information can be found in the attached documents:

1. Letter of Information (Kind of formal, but don't let that keep you away!)
2. The survey questionnaire (5-10 minutes)

Have a quick look at them to see if you'd like to participate!

I'll be at the FAW Orientation tomorrow with hard copies you can fill out. If you prefer, you can print the questionnaire and fill it out at home, then bring it to me at Orientation.

By the way, any information collected from you will be kept confidential. Rest assured that neither the choice to participate, nor the choice to decline, will in any way affect your TA job security or evaluation.

I'll be available to answer questions both before and after the Orientation.

[See you tomorrow!](#)

Thank you,
Betsy

This research study has received ethics clearance from the University of Windsor Research Ethics Board. If you have any questions, please contact the investigator, Betsy Keating at . . .

Appendix E. Script for FAW Orientation Announcement

Hi Everyone!

It's Saturday, and you've just been given a lot of information about FAW and your TA positions, so I'll keep this very brief.

All of you received an email from me about a research project I'd like you to join. The research is about your conceptions of teaching. What is teaching?

What I'm asking you to do is fill out a short questionnaire two times: once at the beginning of the semester and once at the end of the semester. When you fill out a questionnaire, you get a \$10 gift card to either Tim Horton's or the Green Bean – your choice. The questionnaires will take 5-10 minutes to complete; most of it involves circling numbers. (Show them a copy of the questionnaire)

After you fill out the first questionnaire, I'll ask some of you to do an interview. The interviews will take between 45 minutes and an hour, depending on our conversation. Anyone who does an interview will be entered in a draw to win an iPad mini. Since there won't be that many interviews—probably between 5 and 10—your chances of winning are not bad. Like the questionnaire, interviews will be held twice: once at the beginning of the semester and once at the end of the semester. Anyone who does both interviews will have their name entered in the draw twice.

Your identity and any information you give me will be kept completely confidential. You can decide to withdraw from the study at any time with no consequences. You should also know that the research study does not affect your FAW TA position in any way. It is completely voluntary, and it won't affect your job here or any kind of evaluation. You also don't get any extra points from Julia here for doing it: just a gift card or two, and the chance to win an iPad mini.

I have copies here to hand out of the Letter of Information and the Consent form. They're kind of formal, but they're important. So please read them carefully, and be sure to ask me if you have any questions.

Thank you!

Appendix F. Letters of Information and Consent

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

This letter is your copy to keep

Title of Study: Teaching Assistants' Conceptions of Teaching

You are being asked to participate in a research study conducted by Betsy Keating, a doctoral candidate from the Faculty of Education at the University of Windsor. The results of this research may contribute to the body of knowledge that institutions use to make choices about TA training.

You may recognize Betsy's name as the Coordinator of the GATA Network. The Network is solely a support organization for GAs and TAs; it has no association with the FAW program, nor any power to affect TA hiring or evaluation.

If you have any questions or concerns about the research, please feel to contact Betsy Keating at [. . .] or her Advisor Dr. Erika Kustra at [. . .]

PURPOSE OF THE STUDY

The purpose of this study is to investigate conceptions of teaching by undergraduate teaching assistants' (TAs) in the FAW I program at the University of Windsor.

PROCEDURES

If you volunteer to participate in this study, you will be asked to complete two short survey questionnaires, one prior to the beginning of the semester and one at the end of the semester. Each questionnaire will take approximately 5 -10 minutes to complete. You will also be asked if you are willing to participate in a follow-up interview.

If you answer that question positively and consent to be contacted by email, you may also be invited to participate in two interview sessions, one near the beginning of the semester and one at the end of the semester. The interview sessions may range from 45-60 minutes, depending on the conversation.

If you consent to be contacted by email, the investigator will send you a short summary of the results when analysis has been completed.

COMPENSATION FOR PARTICIPATION

Participants who complete and submit either of the two questionnaires will receive a \$10 gift card to either Tim Horton's or the Green Bean Café. Participants who complete and submit both

questionnaires will receive two of the gift cards. Participants who attend an interview session will be entered in a draw to win an iPad mini (or equivalent gift certificate) worth approximately \$329. Participants who attend both pre- and post-semester interview sessions will have their names entered into the draw twice, thus doubling their chances of winning the draw.

POTENTIAL RISKS AND DISCOMFORTS

Due to the nature of this investigation, there are no known physical or psychological risks or discomforts associated with this research.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR SOCIETY

The experience of having completed the questionnaire(s) and/or the interview(s) will offer participants an opportunity for reflection on their conceptions of teaching. Any insights as a result of such reflections could be useful in the individuals' teaching practices, and potentially useful should the participant need to compile a teaching dossier for future employment.

Resulting data may contribute to the body of knowledge that institutions use to make choices about TA training.

CONFIDENTIALITY

If you consent to being contacted by email, your email address will be kept in a separate location from any survey or interview data.

Any information obtained in connection with this study and that can be identified with you will remain confidential and would be disclosed only with your permission.

The investigator will code the data to safeguard the participants' identities and protect the confidentiality of their data. Only the investigator will have access to the identified survey data and the code key. All identifying information will be removed prior to analysis and reporting.

PARTICIPATION AND WITHDRAWAL

Participation in this study is completely voluntary. Neither participating nor refusing to participate will in any way affect your TA position or evaluations. If you participate, you may withdraw at any point without consequences, simply contact the investigator at keatin2@uwindsor.ca. Participants who withdraw after completing and submitting either or both questionnaires will retain the gift card(s). Interview participants who withdraw after any amount of data has been audio recorded, even if they withdraw before the interview is complete, will be entered in the draw for an iPad mini. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

CONTACT

Only with your signed consent, will the investigator contact you again through University of Windsor email concerning further participation, or concerning compensation, or to receive study results.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

A summary of study results will be posted on the University of Windsor's REB website:
<http://www1.uwindsor.ca/reb/study-results>.

Participants who consent to be contacted by email will receive a summary by email. Summary results are tentatively scheduled to be posted in September 2014.

SUBSEQUENT USE OF DATA

These data may be used in subsequent studies, in publications and in presentations.

RIGHTS OF RESEARCH PARTICIPANTS

If at any time, you have questions about this study, you may contact the investigator, Betsy Keating, at [. . .]. You do not have to answer any question on the survey or in an interview. You may withdraw from participation at any time without penalty. If you have questions regarding your rights as a research participant, contact the Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4, by telephone or e-mail: ethics@uwindsor.ca

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct my research.

Signature of Investigator

Date

CONSENT TO PARTICIPATE IN RESEARCH

This is the investigator's copy; it is the same as the **Letter of Information**, but asks for signatures.

Title of Study: Teaching Assistants' Conceptions of Teaching

You are being asked to participate in a research study conducted by Betsy Keating, a doctoral candidate from the Faculty of Education at the University of Windsor. The results of this research may contribute to the body of knowledge that institutions use to make choices about TA training.

You may recognize Betsy's name as the Coordinator of the GATA Network. The Network is solely a support organization for GAs and TAs; it has no association with the FAW program, nor any power to affect TA hiring or evaluation.

If you have any questions or concerns about the research, please feel to contact Betsy Keating at [. . .] or her Advisor Dr. Erika Kustra at [. . .]

PURPOSE OF THE STUDY

The purpose of this study is to investigate conceptions of teaching by undergraduate teaching assistants' (TAs) in the FAW I program at the University of Windsor.

PROCEDURES

If you volunteer to participate in this study, you will be asked to complete two short survey questionnaires, one prior to the beginning of the semester and one at the end of the semester. Each questionnaire will take approximately 5 -10 minutes to complete. You will also be asked if you are willing to participate in a follow-up interview.

If you answer that question positively and consent to be contacted by email, you may also be invited to participate in two interview sessions, one near the beginning of the semester and one at the end of the semester. The interview sessions may range from 45-60 minutes, depending on the conversation.

If you consent to be contacted by email, the investigator will send you a short summary of the results when analysis has been completed.

COMPENSATION FOR PARTICIPATION

Participants who complete and submit either of the two questionnaires will receive a \$10 gift card to either Tim Horton's or the Green Bean Café. Participants who complete and submit both questionnaires will receive two of the gift cards. Participants who attend an interview session will be entered in a draw to win an iPad mini (or equivalent gift certificate) worth approximately \$329. Participants who attend both pre- and post-semester interview sessions will have their names entered into the draw twice, thus doubling their chances of winning the draw.

POTENTIAL RISKS AND DISCOMFORTS

Due to the nature of this investigation, there are no known physical or psychological risks or discomforts associated with this research.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR SOCIETY

The experience of having completed the questionnaire(s) and/or the interview(s) will offer participants an opportunity for reflection on their conceptions of teaching. Any insights as a result of such reflections could be useful in the individuals' teaching practices, and potentially useful should the participant need to compile a teaching dossier for future employment.

Resulting data may contribute to the body of knowledge that institutions use to make choices about TA training.

CONFIDENTIALITY

If you consent to being contacted by email, your email address will be kept in a separate location from any survey or interview data.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and would be disclosed only with your permission.

The investigator will code the data to safeguard the participants' identities and protect the confidentiality of their data. Only the investigator will have access to the identified survey data and the code key. All identifying information will be removed prior to analysis and reporting.

PARTICIPATION AND WITHDRAWAL

Participation in this study is completely voluntary. Neither participating nor refusing to participate will in any way affect your TA position or evaluations. If you participate, you may withdraw at any point without consequences, simply contact the investigator at keatin2@uwindsor.ca. Participants who withdraw after completing and submitting either or both questionnaires will retain the gift card(s). Interview participants who withdraw after any amount of data has been audio recorded, even if they withdraw before the interview is complete, will be entered in the draw for an iPad mini. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

CONTACT

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These data may be used in subsequent studies, in publications and in presentations.

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If at any time, you have questions about this study, you may contact the investigator, Betsy Keating, at [. . .] You do not have to answer any question on the survey or in an interview. You may withdraw from participation at any time without penalty. If you have questions regarding your rights as a research participant, contact the Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4, by telephone or e-mail: ethics@uwindsor.ca

SIGNATURE OF RESEARCH PARTICIPANT

I understand the information provided for the study "Teaching Assistants' Conceptions of Teaching" as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

Name of Participant (print)	Signature of Participant	Date
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I also give consent for the investigator to contact me through University of Windsor email concerning further participation, or concerning compensation, or to receive study results.

Signature of Participant	Date
--------------------------	------

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct my research.

Signature of Investigator	Date
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Appendix G. Questionnaire Items by Stem, Focus, and Sub-categories

Q#	A teacher should . . .	Focus	Sub-category
1	encourage students to find answers for themselves	L	Student Endeavour
2	move students forward through the curriculum	T	Management
3	demonstrate as well as describe how to accomplish a task	L	Modelling
4	maintain control of the classroom (virtual classrooms included)	T	Management
5	encourage students to apply new knowledge to different contexts	L	Student Endeavour
6	review information from the textbook material (electronic texts included)	T	Content
7	pass his or her expert knowledge on to students	T	Content
8	repeat information for students who do not appear to understand	T	Content
9	model debate and discussion about the topic	L	Modelling
10	make sure students are listening	T	Management
11	assist students to construct new ways of thinking about the topic	L	Student Endeavour
12	be flexible enough to accommodate student learning needs	L	Student Needs
13	encourage students to broaden their range of resources	L	Student Endeavour
14	select the right pieces of information to present in the right order	T	Content

Q#	Good teaching is . . .	Focus	Sub-category
15	creating a secure environment for expressing ideas	L	Student Needs
16	explaining classroom rules clearly and keeping students on task	T	Management
17	allowing students to explore and experiment with new ideas	L	Student Endeavour
18	writing lectures and lesson plans that will cover all the exam questions	T	Content
19	assessing students' learning needs and adjusting lesson plans accordingly	L	Student Needs
20	making sure all of the information planned for the course is covered	T	Content
21	discovering and respecting students' ideas, values, and goals	L	Student Needs
22	explaining information clearly	T	Content
23	encouraging students to question their own knowledge and assumptions	L	Student Endeavour
24	knowing the right answers for students' questions	T	Content
25	planning time for drilling and practice before testing students' recall	T	Management
26	encouraging students to identify and solve problems	L	Student Endeavour
27	delivering information in a way that the students will absorb it and retain it	T	Content
28	providing students with timely and frequent feedback	L	Student Needs

Appendix H. Sums of Change by Participant: Survey 1 to Survey 2

Participant	Experience	Field	Change
1	Yes	English or Languages	1
2	Yes	Other	-9
3	Yes	Other	1
4	Yes	English or Languages	-3
5	No	Other	2
6	No	English or Languages	3
7	No	Other	-8
8	No	English or Languages	7
9	No	English or Languages	-10
10	Yes	English or Languages	-7
11	No	English or Languages	6
12	Yes	Other	-14
13	No	English or Languages	7
14	Yes	English or Languages	-2
15	No	Other	0
16	Yes	Other	6
17	No	Other	1
18	No	Other	-18
19	Yes	Other	6
20	No	Other	2
21	Yes	English or Languages	8
23 ¹	No	Other	-7
24	No	English or Languages	-7
25	Yes	Other	-2
26	No	Other	-6
27	Yes	English or Languages	-5
28	No	Other	2
29	Yes	Other	-16
30	No	English or Languages	2

Note. Twenty-nine participants completed both surveys. One participant (#22) did not remain with the program.

Appendix I. Shapiro-Wilk Tests Results

		Survey 1			Survey 2			
		<i>W</i>	<i>df</i>	<i>p</i>	<i>W</i>	<i>df</i>	<i>p</i>	
Survey	Overall	.948	29	.158	.946	29	.144	
Focus	L-oriented	.933	29	.067*	.952	29	.206	
	T-oriented	.944	29	.128	.951	29	.198	
Sub-category	Content	.956	29	.265	.929	29	.052*	
	Endeavour	.914	29	.022*	.937	29	.083*	
	Management	.925	29	.042*	.945	29	.139	
	Needs	.893	29	.007*	.908	29	.015*	
Experience	No Experience	.927	16	.220	.908	16	.109	
	Experience	.899	13	.128	.929	13	.332	
	L-oriented	No Experience	.953	16	.542	.963	16	.710
	L-oriented	Experience	.888	13	.092	.877	13	.064*
	T-oriented	No Experience	.962	16	.704	.919	16	.160
	T-oriented	Experience	.936	13	.409	.968	13	.874
Field of Study	English/Languages	.939	13	.443	.958	13	.724	
	Other	.886	16	.047*	.870	16	.027*	
	L-oriented	English/Languages	.923	13	.278	.969	13	.884
	L-oriented	Other	.877	16	.034*	.915	16	.138
	T-oriented	English/Languages	.928	13	.317	.918	13	.235
	T-oriented	Other	.916	16	.146	.914	16	.136

Note. *W* = test statistic. L-oriented = Learning-oriented, and T-oriented = Teacher-oriented.

* $p < .10$.

Appendix J. Indexing: Theme Codebook Table for Qualitative Analysis

Theme	Category	Sub-category	Description
1			Non-concern, TA as employee
	1.1		Instructor interactions
	1.2		Rules and regulations
	1.3		Online vs. Classroom
	1.4		Job experience
		1.4.1	Previous TA experience
		1.4.2	Need the money
		1.4.3	Resume building
	1.5		Affective
		1.5.1	Positive
		1.5.2	Surprised by . . .
		1.5.3	Concerns / Desires
		1.5.3a	Time management
		1.5.3b	Job performance
2			Self-concern, TA as Apprentice
	2.1		Instructor's responsibility
		2.1.1	I'm not a teacher
	2.2		Head TA interactions
	2.3		Peer TA interactions
	2.4		Student interactions
		2.4.1	Students teach themselves
		2.4.2	Marking as non-teaching activity
	2.6		Affective
		2.6.1	Positive
		2.6.1a	Secure with . . .
		2.6.1b	Empathy for . . .
		2.6.2	Surprised by . . .
		2.6.3	Concerns / Desires
		2.6.3a	Concern with Instructor and/or Peers' opinions
	2.7		Past experiences connected to ...
		2.7.1	Self as Student
		2.7.2	Self as TA
3			Self-concern, TA as Teacher / Teacher-Oriented
	3.1		Online vs. Classroom
	3.2		Rules and regulations
	3.3		Head TA interactions

Theme	Category	Sub-category	Description
	3.4		Peer TA interactions
	3.5		Student interactions
		3.5.1	Marking and Feedback
		3.5.2	Office hours
		3.5.3	Teaching Strategies
		3.5.3a	Interactive/engaging
		3.5.3b	Lecture
		3.5.4	Student responsibility
		3.5.5	Impressions/Opinions of students
	3.6		Affective
		3.6.1	Positive
		3.6.1a	Secure with . . .
		3.6.1b	Empathy for . . .
		3.6.2	Surprised by . . .
		3.6.3	Concerns / Desires
		3.6.3a	Concern with students' opinions
		3.6.3b	Concern with own content mastery
		3.6.3c	Concern with own teaching efficacy
		3.6.4	Frustrating / Difficult
	3.7		Past experiences connected to ...
		3.7.1	Self as Student
		3.7.2	Self as TA
		3.7.3	Self as Teacher
	3.8		Teacher characteristics
		3.8.1	Leadership/ Authority
		3.8.2	Planning and organization
		3.8.3	Content mastery
		3.8.4	Communication skills
		3.8.5	Approachable
		3.8.6	Available
		3.8.7	Flexible/ Accommodating
		3.8.8	Helpful/ Guiding
		3.8.9	Enthusiastic / Motivating
		3.8.10	Fair
4			Concern for Students / Learning-Oriented
	4.1		Online vs. Classroom
	4.2		Rules and regulations
	4.3		Head TA interactions
	4.4		Peer TA interactions
	4.5		Student interactions
		4.5.1	Concern for student progress/success
		4.5.2	Marking and Feedback

Theme	Category	Sub-category	Description
		4.5.3	Office hours
		4.5.4	Teaching Strategies
		4.5.4a	Interactive/engaging
		4.5.4b	Lecture
		4.5.5	Student responsibility
		4.5.6	Impressions/Opinions of students
	4.6		Affective
		4.6.1	Positive
		4.6.2	Surprised by
		4.6.3	Concerns / Desires
		4.6.4	Frustrating / Difficult
	4.7		Past experiences connected to ...
		4.7.1	Self as Student
		4.7.2	Self as TA
	4.8		Teacher characteristics
		4.8.1	Leadership/Authority
		4.8.2	Planning and organization
		4.8.3	Content mastery
		4.8.4	Communication skills
		4.8.5	Approachable
		4.8.6	Available
		4.8.7	Flexible/Accommodating
		4.8.8	Helpful/Guiding
		4.8.9	Enthusiastic / Motivating
		4.8.10	Fair

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