

Learning to teach: Teaching assistants (TAs) learning in the workplace

by

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B.A., University of Windsor, 1978
B. A., University of Victoria, 2004
M. A., University of Victoria, 2009

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Supervisory Committee

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Abstract

Through an exploratory qualitative, interpretive frame that employed an ethnographic methodological approach, this research focuses on teaching assistants (TAs) teaching in a lab, tutorial, or discussion group. Nine TAs share their learning journey as they begin teaching in higher education. The theoretical lens that frames this research is workplace learning. Interviews, observations, video-recordings, field notes, and learning diaries were subjected to thematic analysis, looking for dominant themes associated to TAs' characteristics, their learning process related to teaching, and the knowledge they developed about teaching and student learning. Key findings include the recognition that TAs bring robust conceptions and dispositions to their first teaching position that is approached from a student subject position as they are becoming teachers. As TAs are being teachers, they control their self-directed learning process as they make decisions on-the-fly within a diverse learning environment that ranges from expansive to strategic to restrictive affordances. Coupled with a discretionary reflective practice, TAs' knowledge development about teaching and student learning is solely dependent upon their experience, making forthcoming development of knowledge about teaching and student learning relegated to chance. This focus on TAs' learning in the workplace illuminates the need for a deep learning approach to learning about teaching and student learning that needs to begin with graduate students' first appointment as a TA. In addition, this deep learning approach needs to be encased in an expansive learning environment that provides opportunities for continuous support through various forms of mentorship, instruction, and development of reflective practice.

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Dedication

To Doug and Beti, my wonderful family that I am forever grateful.

Chapter 1 Introduction

Poor starts as teachers are difficult to undo.
(Boice, 1996)

Every fall semester, thousands of new graduate students across Canada embark on their first experience teaching in higher education in the teaching assistant (TA) role. A significant proportion of first- and second-year courses have a tutorial, discussion, or lab component with TAs as the lead instructor (Marincovich, Prostko, & Stout, 1998; Piccinin, Farquharson, & Mihiu, 1993). Most TAs have no prior experience of, or instruction about learning and teaching in higher education. Besides lacking understanding of the broad range of activities that constitute teaching and theoretical background on learning and teaching (Wulff, Austin, Nyquist, & Sprague, 2004), graduate students often feel conflicted about their role as teachers (Feezel and Myers, 1997; Vahey, Witkowsky, Rehling, & Saifah, 2010; Winstone & Moore, 2016). Despite this fact, it has been shown that individuals hold strong conceptions (how individuals think and conceive) and dispositions (tendency to act in a certain way in a situation) about teaching and learning prior to stepping into the teaching role based on their experience as a student (Gardner & Jones, 2011; Gunn, 2007; Leger & Fostaty Young, 2014; Saroyan, Dagenais, & Zhou, 2009). Once teaching, without significant guidance and instruction, existing conceptions about teaching and learning are often confirmed (Leger & Fostaty Young, 2014), dispositions are not addressed, and lasting attitudes about teaching and learning are formed (Boice, 1996; McKeachie, 1994). Since this is the case, it becomes apparent how important one's first teaching experience is in forming one's practice as a teacher in higher education.

Through an exploratory qualitative, interpretive frame that employs an ethnographic methodological approach through the lens of workplace learning theories, focusing on TAs' teaching a lab, tutorial, or discussion group, I ask, *what are TAs doing to learn how to teach?*

This research, highlighting what TAs are actually doing as they are learning about teaching, has not garnered a lot of attention in the literature. Fenwick (2008) states, “we have a great need for rigorous in-depth empirical research that traces what people actually do and think in everyday work activity” (p. 25).

To address the research question, “*What are TAs doing to learn how to teach?*” and attain a holistic understanding of TAs’ learning experience, this research explores:

1. TAs’ characteristics related to learning, such as their conceptions about teaching and learning that they bring to their new teaching role;
2. The learning process that TAs go through, as evident in their learning and teaching actions, and the context and learning factors they identify that shape their learning; and
3. TAs’ knowledge development about teaching and student learning.

This study contributes to our understanding of TAs’ first teaching experience in higher education by focusing on what TAs¹ do to learn how to teach.

Rationale for and Benefits of this Study

TAs fulfil many important duties of the academic teaching role. For example, as the lead instructor, TAs could be responsible for keeping class records, creating or selecting class materials (such as PowerPoint), answering student questions, conducting review sessions, duplicating materials, developing questions, providing feedback on assignments and exams, invigilating exams, holding office hours, setting up labs, teaching tutorials, facilitating discussion, and setting up or showing demonstrations. Once assigned to a course, TAs work with a course supervisor or other designate whose role is to guide and manage the TA’s work

¹ Undergraduate students are sometimes assigned as TAs but this research is based on the graduate student experience.

performance. If interested, TAs attend central or departmental professional development programming about teaching and student learning. However, in most Canadian post-secondary institutions, TAs are not required to engage in instruction about how to teach and support student learning before taking on their TA teaching role.

The result is that many graduate students take up their TA teaching role with little or no instruction. For example, a survey conducted at the University of Victoria (UVic) in 2009 revealed that 65% of new TAs had not engaged in any professional development related to teaching before beginning their teaching duties (Korpan, 2010). TAs cited various reasons why, such as scheduling issues and research obligations, but was mostly due to departments not making prior instruction about teaching and student learning a mandatory requirement (Korpan, 2010). Other studies support these findings. Prieto and Altmaier (1994) found that 50% of TAs received no prior instruction, 25% were working without any supervision, and 50% noted that they never had the opportunity to discuss issues regarding their teaching duties. Fagen and Suedkamp Wells (2004) found similar results in their study of 32,000 doctoral students. In Green's (2010) study, TAs identified their lack of pedagogical content knowledge support—how to teach content in their discipline, as a problem. Even though departments and centralized programs for TAs have increased significantly over the past 30 years, it has been found that the course supervisor or other designate is still solely responsible for guiding new TAs on how to perform their work (Calkins & Kelley, 2005), which often does not include a pedagogical component (Blouin & Moss, 2015). Not having sufficient pedagogical instruction results in TAs feeling anxious (Green, 2010; Meanwell & Kleiner, 2014), lacking confidence (Dawe et al., 2016; Prieto & Altmaier, 1994; Smollin & Arluke, 2014), experiencing imposter syndrome (Feezel & Myers, 1997), and subsequently, undergraduate students' learning not sufficiently

supported (Goertzen, Scherr, & Elby, 2010). Further, lack of instruction results in TAs relying on their strong conceptions about teaching and learning.

Therefore, since learning to teach is primarily self-directed, it is crucial to look at how TAs are self-directing their learning about teaching. As Lavé (1996) explains:

There are enormous differences in what and how learners come to shape (or be shaped into) their identities with respect to different practices. (Lavé, 1996, p. 161)

Lave goes on to state that each practice needs to be studied to explore what is being learned and how. To do so, researchers need to look at the “the positions, dispositions and actions of individual learners in relation to those practices” (Hodkinson & Hodkinson, 2004, p. 168). In agreement, Piccinin, Farquharson, and Mihi (1993) suggest that it would be extremely helpful to find out from TAs themselves what they are experiencing. Boud and Brew (2017) brought attention to the need to look at what teachers in higher education do *in situ*. The purpose is not simply to reproduce what is done but rather to critically examine the purpose of the role, how it is rendered, how it connects to other practices it is associated with (for example, to departmental members), and what can be done to improve the practice (Boud & Brew, 2017). Therefore, the research undertaken here problematizes the notion that TAs (potential future faculty) can learn how to teach on-the-job without significant guidance and instruction. More importantly, support and instruction need to begin when graduate students first step into a teaching role in higher education, as opposed to reserving instruction for doctoral students, to ensure quality instruction for undergraduate students.

Piccinin et al. (1993) brought attention to the important link between TAs’ learning to teach and the quality of education over 20 years ago and continues today (Fisher et al., 2015). In the last few years, quality management systems have been mandated by national governing

agencies, or implemented voluntarily at many higher education institutions in the world (Pratasavitskaya & Stensaker, 2010). This recent quality movement is primarily attributed to external forces demanding accountability and efficiency borrowed from industry and business that depending on how it is approached, may actually not add any improvement to teaching and learning (Brookes & Becket, 2007). Along these same lines, Turner (2011) shows how quality assurance quickly became conflated with quantity rather than quality enhancement. In opposition to quality assurance, quality enhancement emphasizes process rather than the end product. A quality enhancement approach is holistic, involving all individuals working together on different ways to continuously improve (Turner, 2011). With a quality enhancement approach in mind, it is essential to take a close look at all aspects of higher education that determine quality education. One of those aspects and the focus of this dissertation is the TA teaching role, and as established, the lasting impact this can have on future teaching, whether as a TA or academic.

By taking an inductive holistic approach to study TA teaching, it becomes apparent how other units in the academic workplace are supporting TAs' learning. For example, to help TAs learn how to teach, departments at Canadian universities typically hold departmental orientations and meetings that address some of the professional development needs of TAs. In examining this professional development, it is evident that departmental preparation is usually content-focused and often does not address pedagogical concepts (Luft, Kurdziel, Roehrig, & Turner, 2004; Mintz, 1998; Robinson, 2011). To augment what departments offer, centralized units, like learning and teaching centres, provide instruction about pedagogical topics and concepts in the form of workshops, programs, and certificates (Chism, 1998b). Topics addressed may include how to approach the first day in class, grading, classroom management, and holding office hours—to name just a few—to more faculty/discipline specific themes, such as how to run a lab

in the sciences or facilitate discussions in the social sciences (Schönwetter, Ellis, Nazarko, & Taylor, 2004). Typically, TAs are free to pick and choose which workshops and programs they wish to engage.

For those TAs who do attend professional development opportunities, how that support is structured has been found to be problematic. Most program development adheres to an atomistic approach (Lee, Pettigrove, & Fuller, 2010). The atomized approach divides the teaching role into parts and categories that may be perceived as distinct, signifying that learning how to teach is a matter of, as the highly used metaphor implies, ‘filling the toolbox’ with teaching strategies. All that is required are a series of bits and pieces that an educator can choose when needed, what Eraut and Hirsh (2007) term a “confusing patchwork” (p. 79). The fact that the main mechanism for providing the ‘toolbox’ bits and pieces are called ‘workshops’ confirms the atomistic approach. Workshops typically address subjects that have no relation to other topics nor are they part of a cohesive curriculum. Some may argue that this approach reflects the TA role because they take on parts of the teaching role, such as grading or teaching a lab. This may be the reason that an atomised approach developed. The point is, due to an atomised approach, TAs do not have a coherent sense of teaching in higher education. Their experience is fraught with disjuncture and fragmentation with mixed messages of what is important, fostering the development of the proverbial ‘sink or swim’ feeling that often continues if they choose to pursue an academic career. Fragmentation of learning how to teach limits TAs’ ability to construct knowledge about their experience teaching and in supporting student learning.

Boud and Brew (2017) bring our attention to another problem with the current approach to learning how to teach in higher education: the common method of structuring learning situations in an acquisition and transfer or product approach. The acquisition and transfer model

assume that if individuals are provided with the required information, they will be able to transfer that knowledge to forms of assessment, other courses, and to work situations. Boud and Brew point out that the same teaching methods are brought to learning how to teach. For example, the range of programming typically offered to TAs mimics the accepted acquisition and transfer approach of most academic programs. TAs are introduced to the foundational concepts required to teach and support student learning so that they can transfer that acquired knowledge in the classroom. This is typically done through a series of orientations and workshops offered at the beginning of term that range in time from two or three hours or more, depending on the department and institution. The impact of such programs has been questioned, primarily due to the reliance on self-reporting measures focused on TA satisfaction (Boman, 2008; Cassidy, Dee, Lam, Welsh, & Fox, 2014; Dimitrov, Dawson, Olsen, & Meadows, 2014; Dimitrov et al., 2013; Kenny, Watson, & Watton, 2014; Korpan, 2014a; Rolheiser et al., 2013). Despite the limits of acquisition (Sfard, 1998) and simple assumptions about transfer (Hager & Hodkinson, 2009), this approach still dominates most TA instruction in higher education. Acquisition and transfer oversimplify the practice of teaching, relegates learning to the individual, and continues to separate learning about teaching from what individuals do and learn through practice within a social context (Boud & Brew, 2017).

Whether TAs attend professional development programming or not, learning to teach at the post-secondary level is primarily a self-directed learning process that occurs while teaching (Smith, 2017). This fact situates learning to teach in higher education in the workplace. TAs, even if they engage in some form of professional development before beginning their first teaching position, are learning how to teach while teaching in the academic workplace. It has been shown in the field of workplace learning that the learning process for each role in the

workplace needs to be understood. If not, too many factors can undermine the process (Cosnefroy & Buhot, 2013; Eraut, 2007). With the aim to enhance learning in the workplace, Eraut (2007) stresses that it is essential that there is a clear understanding of the range of ways that people learn on-the-job. Once determined, the learning needs in context can be identified and attention can be brought to the “factors which enhance or hinder individual or group learning” (Eraut, 2007, p. 420). Therefore, to determine how TAs are learning on-the-job, it is vital to carry out a careful study of what they are actually doing in their work, what they are learning about teaching, and the factors that are supporting or hindering that learning.

In summary, learning how to teach in higher education begins when graduate students first take on teaching responsibilities. It has been often suggested that a way to improve graduate education and university teaching is to concentrate on developing graduate students’ teaching skills (Austin, 2002; Benassi & Buskist, 2012; Fagen & Suedkamp Wells, 2004; Gaff, Pruitt-Logan, Sims, Denecke, & PFF participants, 2003; Golde & Dore, 2004; Marincovich et al., 1998; Nyquist, Abbott, Wulff, & Sprague, 1991; Wulff et al., 2004). Working as a TA has been identified as the only limited experience academics may have for a lifetime of teaching (Golde & Dore, 2001). Emmioglu, McAlpine, and Amundsen (2017) found in their study that TA work was an important element of graduate students’ experience, and therefore conclude that there is the need for more research into the role that teaching plays in graduate students’ lives. This study offers insights into how to better support new TAs in their teaching role in higher education and as possible future academics. More research into the personal nature of learning how to teach and more qualitative research to get at the richness of data are necessary so that concrete strategies can be developed (Kinchin, Hatzipanagos, & Turner, 2009). The development of a pattern of meanings and themes about the nature of TAs’ learning to teach will meaningfully inform

practices in educational development, such as programming to support the professional development of TAs. In particular, the development of a TA curriculum that begins with their first entry into TA work and continues throughout their graduate degree(s) is necessary. Further, this research adds to the discourse on workplace learning. Hodkinson et al. (2004) identified the lack of workplace learning research that took the individual as the focus and therefore the need to build that perspective into how learning at work is viewed (p. 7).

Guiding Concepts

There are two broad guiding concepts that direct this research: learning in the workplace and the complexity of learning to teach.

Learning in the workplace.

V. J. Marsick (1988) published the first book in the field of workplace learning titled, *Learning in the workplace: The case of reflectivity and critical reflectivity*. The field of workplace learning previously existed in varying forms and up to the late 1980s, was referred to as vocational education or training. The roots of this research field come from human resource development and situated learning theory but is also related to research about learning organizations and lifelong learning (Lee, Fuller, Ashton, Butler, Felstead, Unwin, & Walters, 2004). The concept of learning in the workplace has since developed several terms, each slightly different: work-integrated learning or education, work-based learning, and workplace learning (Evans, Guile, & Harris, 2011; Lester & Costley, 2010). To clarify, work-integrated learning or education is typically specific to formalized university programs that require working in the job as part of the program, such as law and medicine, or co-operative opportunities. Work-based learning is specific to the trades where an apprenticeship is part of the process to attain accreditation for the job. The last term, workplace learning, is specific to any learning that takes

place in the workplace while individuals are performing their everyday work duties. Common to all, is the idea that when a person is working, whether required by a formalized program or not, that person is continually in a learning process. Broadly, no matter what term is used, it is about the “relationships between human and social processes of learning and working” (Evans, Guile, & Harris, 2011, p. 150). The field of workplace learning has brought attention to this important aspect of everyone’s work situation and through this recognition and subsequent research, the experiential learning activities inherent in work are recognized. For the purposes of this research, the most salient term and research appropriate for this study is workplace learning. The reason being that TAs, due to the nature of their work, begin work without the possibility, in most cases, to engage in significant informal or a formalized component of learning or education about teaching in higher education. In addition, most begin their TA role without any previous experience of teaching in higher education. Therefore, they are learning their work in the workplace and learning is taking place on-the-job.

Due to the expansive interest in the field of learning at work (Candy & Matthews, 1998), many definitions exist for workplace learning. For example, Fenwick (2001) defines workplace learning as “human change or growth that occurs primarily in activities and contexts of work, however it is defined and located” (p. 4). This simply means that learning takes place in the same place as it is applied. Matthews (1999) expands the definition to identify all of the components and issues related to workplace learning, such as the learning context, reason for learning, process, and outcomes that are built around sustainable professional development. Most definitions highlight the complexity of learning in the workplace, with some focusing on the individual, others on the organization, or on both, such as Matthews’ (1999) definition, and typically concentrate on the present but the future is often implicit in the definition.

In simplest terms, research into learning in the workplace looks at how and where learning is taking place (Hager, 2011). Once determined, suggestions can be made as to how to best support and enhance learning at work because, despite the fact that everyone is continuously learning, the process of learning needs to be recognized so that the knowledge developed is explicit and can be critically evaluated. Even though learning in the workplace can take many forms, it is often referred to in the literature as informal learning².

Ellstrom (2011) argues that the focus of workplace learning is the job and not the institution. Looking at TA work, then, means looking at the work associated with being a TA and all of the factors associated with that work, including the department and university as contextual factors, and the complexity of learning how to teach, with the focus remaining on the TA job. For the purposes of this research, there is no separation of work and learning, and positions the working and learning role of the TA, whether on-the-job or through professional development, as continually within a process of change as the TA performs and becomes an educator in higher education.

With an emphasis on process, learning is about changing both the learner and the environment, making learning relational, context dependent, and culturally and socially complex. Fenwick (2008) agrees that learning is not an outcome but a process: “workplace learning can be defined as expanding human possibilities for flexible and creative action in contexts of work” (p. 19). Fenwick (2010) notes how in workplace learning, learning is used to refer to something that is actually observed and distinct from the flow of work (p. 80). Fenwick prefers learning to be

² Informal is in contrast to formal learning, which differentiates between education within a formalized program of study and informal learning taking place everywhere else, whether that is at work, home, and/or everyday life (Hager & Halliday, 2006). Despite many countering this binary approach to workplace learning (Billett, 2002; Colley, Hodkinson, & Malcom, 2003; Eraut, 2000; Illeris, 2009; Lavé, 1982; Malloch & Cairnes, 2011), and the acknowledgement that informal learning occurs in formal institutions as well, outside of a strict curriculum (Hager & Halliday, 2006), informal learning continues to define the majority of learning taking place in the workplace.

understood as being a messy object or a series of messy objects that are linked together somehow.

To explain the term process, Corbin and Strauss (2008) state that, “process is sequences or a series of actions/interactions/emotions taken in response to situations or problems, or for the purpose of reaching a goal as persons attempt to carry out tasks, solve certain problems, or manage events in their lives” (p. 99-100). As this definition states, process is about individuals making decisions and acting on them within a specific context that is ongoing and iterative to reach a goal. As Corbin and Strauss (2008) highlight, every process is encased within a specific context with structural conditions that shape and affect the individual’s response. An individual’s response, such as actions, interactions, and emotions may be “strategic, routine, random, novel, automatic, and/or thoughtful” (Corbin & Strauss, 2008, p. 88). All are dependent on the situation within a specific context.

Focusing on process in this study, learning is considered and examined as a process that emerges from the learning context in ways that cannot be anticipated, making learning an ongoing creative process (Hager, 2005). Learning is evident through the decisions and actions that TAs make within the context of teaching that are influenced by and in relation to the different factors associated with their work. As an ongoing creative process, learning changes the individual and the environment due to the actions, interactions, and emotions that take place (Corbin & Strauss, 2008) within a context that is socially and culturally complex. Therefore, learning to teach in higher education is interpreted as a complex interplay of many factors and not a simple step-by-step process. The complexity of learning to teach is therefore rendered as a messy process that weaves back and forth, up and down, as one goes through an iterative reflective learning process. Most importantly, learning about teaching is continuous.

Complexity of learning to teach.

Although TAs are not fully responsible for a course, the stance in this research is that anyone fulfilling an aspect of supporting student learning is in a teaching position. Boud and Brew's (2017) definition of teaching at the post-secondary level, "elements of both structure and action," (p. 82) is used in this research. Structure encompasses the 'how-to' of teaching that includes materials, context, and other socially accepted practices. Action is the 'what' and 'why' of teaching, what teachers do and why, encompassing thinking as well as observable actions, and the accepted norms associated with the act and role of teaching. These structures and actions are not static but respond to influences, such as context (e.g. disciplinary) and how individuals enact the role (agency) (Boud & Brew, 2017). Therefore, the authors state that, "learning to teach is learning to engage in a particular kind of social practice" (p. 78), emphasizing teaching as a practice that is socially-situated. Further, the complicated nature of teaching is well established (for example, see Barnett & Guzman-Valenzuela, 2017; Gibbs & Coffey, 2000; Hutchings, 1993; Kane, Sandretto, & Heath, 2002; McAlpine, Weston, Timmermans, Berthiaume, & Fairbank-Roch, 2006), and it is recognized that teaching requires a higher-order thinking process (Dall'Alba, 2005), such as critical thinking and problem-solving skills (Gibbs & Coffey, 2000).

The recognition of this complexity of learning to teach is countered by the student perspective. One of the long-standing issues with one's first entry to learning to teach is the idea that it is simple because individuals have been observing teaching for a significant number of years before purposefully taking on the teaching role. Robert Everhart states, "The teacher's world, in the student's eyes, was straightforward and linear, hardly complex at all" (as quoted in Britzman, 2003, p. 27). Despite this quote referencing K to 12, graduate students with several more years of observing teaching, perceive the same. They believe they know what a teacher

does in higher education based on what they have observed from their student perspective (Gunn, 2007).

In addition, there is the long-standing perception of learning to teach as existing as a step-by-step process or occurring in stages—as a simple linear process. The stages approach was developed from Fuller's (1969) research about concerns expressed by K to 12 teachers. Fuller (1969) defined concern as worries or perceived problems. Based on the amount of teaching experience, Fuller found that beginning teachers were concerned with their ability to survive their first-time teaching and transition to the profession, but as they developed over time and became more experienced as teachers, they became more focused on students' learning and impact. Many have followed this perspective of viewing teaching development as a series of stages from novice to expert. However, the simplicity of the stages model has been challenged, acknowledging its limited ability in comprehending the complexity of teaching (Dall'Alba & Sandberg, 2006).

The stages with concerns approach has been applied to TAs' teaching resulting in findings that echo the K to 12 literature (Cho, Kim, Svinicki, & Decker, 2011; Darling & Dewey, 1990; Prieto, 2001; Russell, 2010). A highly-cited study related to stages and concerns is Sprague and Nyquist's (1991) work, which identified three stages of TA development: senior learner, colleague-in-training, and junior colleague. This study brought a focus to TA development and the learning process about learning how to teach in higher education, but by applying the stages approach, downgraded TAs as primarily students rather than as employees and active instructors who hold significant responsibility through their decision-making that affects student learning. Calkins and Kelley (2005) identify another issue with this model. TAs are not mentored until they arrive at the junior colleague stage. As indicated earlier in this

introduction, there is the need for TAs to have guidance and mentorship from the very beginning. Sprague and Nyquist's work suggests that prior to being considered a 'junior colleague', TAs just need to be managed.

As is evident, the linearity of the stages model is in opposition to the reality of the complexity of learning to teach. Prieto (2001) attempted to capture the complexity of learning to teach by introducing a similar but expanded model called the Integrated Developmental Model (IDM) of supervision for teaching assistants (mimicking a model used for psychotherapist development). It has TAs proceeding from beginning TAs, to advanced TAs, and then as junior faculty, similar to Sprague and Nyquist's model. The difference is that the IDM model identifies the diverse teaching domains that are required by TAs and acknowledges that TAs will be at different skill levels in each domain, as opposed to lumping all as possessing the same level of knowledge. Despite expanding the stage model and adding different domains (presentation skills, assessment skills, academic ethics, organization skills, individual differences, interpersonal skills, and networking), IDM still promotes a staged linear process. As stated above, learning to teach is a complex reflective iterative endeavour. Several researchers have noted the need for research into the complex nature of teaching in higher education (Kane et al., 2002; Sadler, 2009).

Adding to the complexity of learning how to teach, is the fact that TAs come from various backgrounds and have not been exposed to identical education and learning, which makes the TA workforce a complex entity and a challenge to support in their role. Further challenges include:

- different disciplinary expectations;

- support that may be ongoing or non-existent and differs between departments and course supervisors;
- centralized TA professional development programs that vary tremendously from institution to institution;
- TA professional development programs that differ from department to department;
- paid professional development is not always provided for TAs;
- identity as a TA is not always acknowledged or is positioned in the background, rather than foreground (their graduate student research identity is usually in the foreground); and
- short-term positions that do not always garner significant support from the institution or departments.

Taken altogether, these challenges provide a complex interplay of many factors making development of sustainable programming and curriculum a challenge for higher education institutions to design and implement to support TAs develop their teaching practice.

Dissertation Structure

The following structure is used in this study; first, establishing conceptual foundations, next, discussing methodology and procedures, and finally, describing the study and discussing findings. Subsequent chapters include:

Chapter 2: Literature review – concentrates on relevant literature that addresses TAs learning how to teach, professional development programming, workplace learning, learners' characteristics, the learning process, supports for learning, and knowledge development.

Chapter 3: Research methodology – describes the approach taken to this study to maintain a broad and holistic qualitative social constructivist perspective, detailing triangulation of interviews, observation, and the researcher’s perspective.

Chapter 4: Research findings – each key theme begins with a researcher-constructed cameo, representing the theme, followed by description and quotes.

Chapter 5: Discussion – discusses the key findings in connection to relevant literature.

Chapter 6: Implications – suggestions are put forward about the implications of this study and how the findings can inform future research within workplace learning, graduate student professional development, TA development, and learning to teach in higher education work and research.

TA and Graduate Student Programming at UVic

A strength of this study is that the TA participants are in a context with significant TA support. This study would not have been as relevant if it took place in a university that did not have robust centralized and departmental supports in place. At UVic, the centralized program of support for graduate students began in the early days of the establishment of the Learning and Teaching Centre (now called the Division of Learning and Teaching Support and Innovation (LTSI)) with one of its first directors, Dr. Andy Farquharson. Dr. Farquharson, who was Director from 1984 to 1999, recognized that it was important to foster teaching development in graduate students. Due to this focus, the centre at UVic had a strong graduate student program from the beginning, despite other universities focusing more on faculty development.

In the late 1990s, Dr. Dave Berry from the Department of Chemistry began a set of programs for graduate students. Shortly thereafter, a fund, in memory of a senior lab instructor in

geography, Professor Gilian Sherwin, who staunchly supported graduate student teaching development, was set up to support the twice-annual centralized TA conference.

In 2006, I successfully attained a short-term contract position to organize and develop the annual TA conferences and some workshops for TAs. I had attended the TA conference when I began my Masters in Anthropology in 2004 and had two years of TA experience to bring to the role. Shortly after this, the learning and teaching centre hired a new director, Teresa Dawson. Teresa was also a strong advocate for graduate student professional development and shortly after beginning her new position, decided to establish a more robust program at UVic. At that time, I applied for and attained a 50% position to work on developing more programming for TAs and graduate students. I took the already well-established programs developed by Dr. Berry and began expanding offerings. This included extending the TA conferences to several days (four for the fall conference and three for the January conference), expanding workshops, and revamping our teaching certificate program for graduate students (that is now a credit-bearing graduate certificate, Learning and Teaching in Higher Education (LATHE), a two-year program that appears on graduate students' transcripts and convocation record).

One of the programs developed, based on Dawson's own experience as a graduate student, was a joint centralized and departmental program, called Teaching Assistant Consultants (TACs)³. This program positions experienced TAs in each department (each year there are about 26 TACs in departments that have TA positions) to mentor new TAs through workshops, teaching observations, and one-on-one consultations. Experienced TAs apply for the position, and the department and our unit jointly choose the best candidate for the position and split the

³ See Korpan (2010), Bubbar, Dimopoulos, Korpan, and Wild (2017), and Gourlay and Korpan (2018) for further discussion about this program.

cost of the TAC. This means that new TAs have access within their discipline to someone who is a peer and available to support them with department specific requirements for the TA role.

Some departments augment the hours provided for the TAC role (110 spread over nine months) so that the TAC can provide more support for TAs in specific courses or all TAs in the department more generally. In addition, departments have other mechanisms to support TAs. These are department specific and range from TA orientations, weekly meetings with the course instructor or other designate for TAs in large courses, or programs run by faculty specifically for TAs.

New TAs at UVic have several opportunities to find support for their first experience of learning how to teach. The programming available to TAs begins with the centralized TA Conference in September that occurs before TA duties start. The conference curriculum is divided into faculty streams, each stream taught by graduate students who have ample experience with LTSI through the LATHE program and as a TAC. Therefore, the graduate students who provide the instruction at the Fall TA Conference have engaged in significant learning and mentoring about how LTSI promotes learning-centred instruction and active learning. Spread over four days, TAs choose to attend sessions addressing a range of topics related to their field. Next, most TAs have a departmental orientation and their first TAC meeting. Each TAC is in charge of delivering programming that is suitable to the needs of new TAs in their department with most providing significant support in September so that TAs are aware of the expectations of the department and UVic policies. Teaching observations occur early in the fall term so that TAs are guided to ensure that undergraduates' learning is supported. Throughout the term, TAs have access to continuing workshops through the learning and teaching unit, support from their TAC, and through the arrangements made with their course supervisor.

Of course, whether a TA takes up these opportunities is dependent on them. TA conference attendance is voluntary. In some departments, the TAC workshops and teaching observations are mandatory but this is not the case for all. Each year, TACs have to complete an end-of-year report where they show evidence that they have reached the learning goals they set out at the beginning. From these reports, it is clear that those departments that have mandatory teaching observations and workshops are able to successfully achieve their learning goals. Reports show that TAs feel supported as opposed to departments that do not have this requirement in place. Continually, we aim to encourage departments to mandate TA instruction hours into their contracts. The current union contracts for TAs at UVic only require half an hour for union training but departments can determine how many hours they want to designate to mandatory paid training about teaching.

TA positions at UVic are one-term positions. Union rules dictate that first-year TAs are assigned first to TA positions, with assignment of subsequent years following. This guarantees new graduate students with funding. TAs may be assigned to different course supervisors each term or, at times, TAs may remain with the same course and supervisor for more than one term. Further, TAs are assigned work differently with many variables determining when and how TA assignments are allocated. Sometimes TAs know the course and supervisor prior to the beginning of the fall term, while others do not know those details until mid-September.

Departments are responsible for allocating TA work to their graduate students. The process of assignment and application differs slightly from department to department. Besides abiding to union rules, these differences are based on the graduate student pool available to TA each term, courses being taught, and other administrative issues related to supporting courses and undergraduate students. The number of hours assigned to a TA is dependent on the course size

(number of students) and duties. Hours can range anywhere from 25 to 140 and all TAs are paid at the same rate negotiated by the union. Typically, departments issue a request for applications for the TA role, often listing the courses and sometimes the duties associated with the course. For example, a listing of duties might state that the TA attend weekly meetings, lead tutorials, hold office hours, grade, and invigilate exams. Once TAs submit an application or are promised a TA position as part of their funding, those responsible in each department assign TAs, aiming to match TAs' content expertise to courses.

The structuring of the position is key for an individual to know the required responsibilities, duties, and associated expectations, such as whether the work will require collaboration or be more self-directed. At UVic, typically course supervisors are responsible for structuring TA work. There is little literature about how course supervisors structure TA work, but it is most likely dependent on departmental standards, personal pedagogical beliefs, level of experience of the course supervisor with TAs and with the course, and the design of the course. How the course is designed will determine the quantity and timing of TA work. Additionally, the course supervisor may adjust the design of the course during the term, which may affect the duties assigned to the TA. As individuals responsible for the TA role, course supervisors (or other designates) set the tone of the workplace learning environment, whether working with one TA or a team. A learning environment in the workplace is one that provides appropriately challenging work with sufficient support to carry out the work successfully. In order to do this well, a course supervisor needs to determine the skills that TAs bring to the role and their learning needs. In addition, new employees benefit from working alongside others. Therefore, course supervisors can set up opportunities for those involved in the course to work as a team or work with others, who can help mentor new TAs.

A union requirement at UVic is completion of CUPE 4163 TA Checklist of Assigned Duties and Approved Work Schedule (see Appendix A). This form is to be completed and signed by course supervisors and TAs each term for two reasons: to keep track of hours allocated to the work and to detail the duties that the TA will be required to complete. The union requires that there is a check-in about TA hours mid-term.

This is the context in which this study occurred. Despite robust programming for TAs and support provided at several levels, it is still evident that more or different programming is required.

Summary

In this introductory chapter, I have emphasized the importance of taking a close look at how TAs are learning how to teach. By doing so, there is the potential to impact the quality of teaching in higher education, student learning, and educational development programming. In addition, this research contributes to the literature about workplace learning. The guiding concepts of learning in the workplace, and the complexity of teaching were defined and discussed. Lastly, this chapter provided details about TA programming at the University of Victoria, the context of this study.

Chapter 2 Literature Review

This research addresses the following: what TAs are doing to learn how to teach through a workplace learning perspective. This chapter is divided into two parts—the first focuses on literature about TAs and the second on the theoretical framework that guides this research, workplace learning. In the first part, literature related to TA work and support is discussed. Even though TAs have varied access to programming and support due to their institutional context, relevant to this research is what TAs are doing to support their learning about teaching, how they are learning to teach, and what they are learning about teaching, while on-the-job. Most of the research conducted to date about TAs' learning to teach take structural elements, such as courses, centralized or department programming, or specific topics related to teaching in higher education, such as concerns about teaching, as the starting point of the study. Despite accounts about the difficulties and successes that TAs have experienced⁴, little is known about how TAs are learning to teach in the workplace and what constraints and supports⁵ contribute to the difficulties and successes of their learning process. This study takes TAs as the starting point and focuses on TAs' learning and teaching actions in their first teaching assignment in higher education. TAs' actions are informed and shaped by their conceptions about learning and teaching, how work is structured, and support provided.

In Part One, I begin with a short history of the literature and research related to TAs, then move onto to literature that is relevant to the professional development that aims to support TAs in their learning about teaching. The second part is divided into two sections. First, I describe the

⁴ For example, Grose (2011) examines five TAs' stories about critical incidents they experienced through TA work and how these incidents informed their teacher identity.

⁵ Hoessler's (2012) research concentrates on supports for graduate students that helped them with their teaching throughout their degree but did not specifically focus on beginning TAs' supports.

theoretical roots of workplace learning, followed by the main themes identified as having impact on learning in the workplace. Woven throughout Part Two is literature about TA work and teaching in higher education that links to the main themes. Workplace learning as a theoretical construct and way of investigating TAs learning how to teach has not been previously used, resulting in no literature to reference in this category. As a reminder, the research question for this study is: *What are TAs doing to learn how to teach?*

Part One: TAs Learning How to Teach

“Workplace learning is replacing the more narrow term, training.”
(Marsick, Watkins, & O’Connor, 2011, p. 198)

Before embarking on discussion of TAs learning how to teach, one of the foundational problems underlying this area of research needs to be addressed—the ubiquitous use of two terms: training and preparation. As the opening quote to this section states, training suggests limited instruction. Problems with the long and continued use of the term *training* for TAs has been acknowledged by several (Fitzgerald, 1992; Hutchings, 1993; Korpan, 2014b; Lambert and Tice, 1993; Lueddke, 1997). Hutchings (1993) explains that teaching is complex and more than training. Teaching is not akin to potty or pet training, which is what the term training conjures. Training perpetuates the idea that teaching is a skill that is acquired through repetition and replication and is not about constructing knowledge and engaging in reflection about teaching and student learning (Beckett, 2002). In contrast to training, the stance taken in this research is that teaching is about continuous development, growth, and support (Hutchings, 1993, p. 131).

Similarly, *preparation* signifies that TA work involves the simple task of making someone ready to work in the role through training. It is about using, as you would prepare an object to complete a task. Preparing connotes the idea that once prepared, nothing further is required. The perpetual use of these two terms misinforms TAs as they take on their first

teaching role. It is my stance that the use of the terms *training* and *preparing* be discontinued and substituted with other terms that indicate the long-term learning process and instruction required to learn how to teach. Historically, literature about TA work has used both terms abundantly and continues to do so.

History of TA literature and research.

The bulk of publications and research about TA work originates primarily from the United States but over the past 20 years there is increasingly Canadian content. From the 1970s to 1990s, publications concentrated on ‘preparing’ TAs for a variety of tasks. With the introduction of a significant number of TAs in the classroom during the early 1970s, how courses were delivered had to adapt to increased student enrolment and to the role of TAs (Lewis, 1993). Since teaching in higher education never required completion of a formal program, TAs were not required to undertake instruction about their teaching duties. However, due to attention being brought to the quality of teaching in higher education institutions in the early 1970s that resulted in the establishment of learning and teaching centres, it was recognized that TAs would benefit from professional development. Since then, centralized programming developed at different paces at each institution. Similarly, literature and research related to TA work followed. Though, mandatory instruction for TAs is still not required at all institutions and if required, instruction provided is limited due to taking a training approach, despite the recognition of the important role that TAs play in providing instruction to undergraduate students (*e.g.* Piccinin et al., 1993).

Professional development programming.

The professional development programming provided by centralized programming, such as learning and teaching centres, have been the subject of many publications. A significant body of the research addresses the broad range of professional development needs of TAs, such as

essentials of teaching instruction for higher education classrooms⁶, and suggestions on how to familiarize TAs with this content through workshops and programs that can be implemented by departments or centralized programs (Kalish & Robinson, 2011; Kira, 2011; Meyers, 2001; Mintz, 1998; Mueller, Perlman, McCann, & McFadden, 1997; Palmer, 2011). These broad overviews focus on a variety of issues related to TAs, such as: a list of content that should be included for TAs (Chism, 1998b; Kira, 2011; Mueller et al., 1997), the difference in impact of short- and long-term programs (Dimitrov et al., 2013), and competencies required for TAs to inform programming (Korpan, Le-May Sheffield, & Verwoord, 2015; Schönwetter & Ellis, 2007).

Narrowing in on specific programming, Palmer (2011) provides a useful categorization to represent the scope of programs currently employed at higher education institutions, from broad in scope to high commitment, then moderate in scope and commitment, and lastly, narrow in scope and low commitment. First, are programs that are broad in scope that require high commitment from the unit responsible and participants. In this category are lead TA programs, courses about teaching, and *Preparing Future Faculty* (PFF) programs, some of which may be credit-bearing⁷. Due to a push to support graduate students for future faculty roles, there has been an increased focus on certificates, courses, and programs for graduate students aiming for a future career in academia (Bellows, 2008; Border, 2010; Chandler, 2011; Criniti Phillips, Hansen, & Willingham-McLain, 2011; Hainline, 2001; Kaila & Border, 2011; Kalish & Robinson, 2011; Nyquist et al., 1991; Palmer, 2011; Tice, Gaff, & Pruitt-Logan, 1998; Schönwetter et al., 2004; Wulff & Austin, 2004; Wulff et al., 2004; von Hoene, 2011). On a

⁶ For example, how to manage a classroom, developing an approach to teaching, problems they may encounter, how to grade, *etc.*

⁷ Most certificate programs at non-credit.

national scale in the US, the PFF program was initiated at select institutions in the 1990s (Tice et al., 1998) and since then, has been the subject of several research agendas to assess the impact of the program and determine how it can be improved (Criniti Phillips, Hansen, & Willingham-McLain, 2011; Gaff et al., 2003). Besides this well-structured program, many others exist. A scan conducted of institutions in the US shows that about 53% have pedagogy courses, with most being a requirement for a certificate program (Palmer, 2011). One-third of the institutions have certificate programs (including PFF) but there is a vast range of commitment associated with certificates, ranging from completing a few workshops to recognized accredited programs (Palmer, 2011; von Hoene, 2011). One study looked at the content of certificate programs and found that the majority promote practical skills rather than theoretical aspects about teaching and learning and did not contain much about the scholarship of teaching and learning (Kenny et al., 2014). Looking specifically at courses offered for graduate students reveals that most are training-oriented rather than pedagogically-based (Chandler, 2011). Within the STEM⁸ fields, there is the tendency to promote a teacher-centred rather than a student-centred approach to teaching (Kaila & Border, 2011), leading to discipline-based courses or programs being questioned. Bishop-Williams, Roke, Aspenlieder, and Troop (2017) compared disciplinary and interdisciplinary programs at their institution. They found that both have benefits and issues. Survey participants stated that in interdisciplinary programs they were able to be exposed to broader ideas about teaching. They also exposed them to learning from individuals in other disciplines, networking across the university, and practice teaching with individuals that were very similar to undergraduate students. As a result, a more authentic teaching experience was provided because they had to think about the language they used when teaching. In disciplinary

⁸ STEM stands for science, technology, engineering, and mathematics.

programming, participants were able to hear from experts in their field, and dig deep into norms, methods, and signature pedagogies of the discipline. Finally, in this category of broad in scope is the centralized but department-based lead TA mentor programs that exist at about 25% of US research-based institutions (Palmer, 2011) and one Canadian institution (UVic). Lead TAs are involved in one-on-one mentorship, learning communities, orientations, and discipline-specific pedagogy workshops within departments for TAs.

The second category from Palmer (2011) consists of programs that are moderate in scope and commitment, such as TA orientations and workshop series that can lead to a non-credit certificate. The most common offering is a non-mandatory campus-wide orientation devoted to teaching and learning issues relevant to TA work (Palmer, 2011). Typically, this campus-wide event takes place in late August or early September so that new TAs have a chance to grasp a beginning understanding of their new role. Different scans conducted about TA orientations have found vast differences in the structure of orientations, such as being mandatory (or not), centrally or departmentally organized, length of time of orientation (some being only for a few hours), fixed or open content, range of topics offered, presentation formats used, and whether feedback was collected (or not) (Korpan, 2014a; Palmer, 2011; Robinson, 2011). Research looking at TA orientations' effectiveness has been conducted citing issues with self-reporting satisfaction evaluation (Boman, 2008; Chism, 1998a; Korpan, 2014a). As with orientations, workshop series are just as varied.

The last category consists of programming that is narrow in scope with low commitment, such as one-off workshops, department orientations, one-time consultations, and print- or web-based informational resources (Palmer, 2011). Learning and teaching units often provide one-off workshops about pedagogical subjects and broad disciplinary needs, such as how to engage

students and diversity in the classroom. Pedagogy-specific themes focus on student engagement, how students learn, and classroom teaching strategies—to name just a few—to more faculty/discipline specific themes such as teaching a lab in the sciences or facilitating discussions in the social sciences (Schönwetter et al., 2004). Further, some units will invite TAs to set up one-on-one consultations to discuss their specific questions or needs, and publish guides and other materials, either online or in print, that TAs can access to help guide their learning to teach. If departments hold a TA orientation, information will be provided about some aspects of the TA role. Departmental offerings are usually subject-focused and often do not address pedagogical issues that may arise for TAs. Typically, departmental support aims to give TAs just enough information to do their job. Most departments do not incorporate opportunities to reflect and discuss the pedagogical aspects of the role. Luft, Kurdziel, Roehrig, and Turner (2004) took a close look at the educational and instructional environment in biology, chemistry, and physics departments at an American university through the lens of TAs who taught labs and discussion sessions. They found that each department has varied training, from nothing specific to one department having a mandatory semester-long course. This confirms Mintz's (1998) research that showed how departmental support for TAs is highly variable. Luft et al. (2004) also found that TAs primarily worked independently in an autonomous instructional environment, received no instruction on teaching, or feedback about their teaching.

Looking at programming provided at higher education institutions for developing teaching, Gibbs and Coffey (2000) found that different approaches are taken:

- behavioural change models that suggest that if a teacher's behaviour in the classroom is changed, subsequently, there will be a positive impact on student learning outcomes;

- conceptual change models that aim to have participants become aware of their espoused theories related to teaching and student learning;
- developmental models claim that teachers move through various stages as they learn about teaching;
- reflective practice models are designed so that teachers can reflect on their practice in order to inform future practice;
- student learning models take students as the focus by informing teachers about students and how to best support their learning; or
- hybrid models that are a combination of any or all of the above.

As can be seen from above, complicating the professional development offered to TAs by institutions is the multiple approaches that can be taken with each assuming different results.

Besides taking a program focus, other literature has focused on varying aspects of TAs' work situation, such as: evaluating TAs' work performance (Black & Kaplan, 1998; Shannon, Twale, & Moore, 1998); ethical responsibility of course supervisors (Keith-Spiegel, Whitley, Perkins, Balogh, & Wittig, 2001) or of TAs (Kuther, 2003); the specific needs of international TAs (Ashavskaya, 2015; Dawson, Dimitrov, Meadows, & Olsen, 2013; Gorsuch, 2012; Prieto, & Yamokoski, 2007; Sarkisian, & Maurer, 1998; Wright, Purkiss, O'Neal, & Cook, 2008); TAs as part of the teaching team (Cassidy et al., 2014; Rolheiser et al., 2013); teaching observations, video-taping TAs, and providing feedback (Russell, 2008; Williams, 1991); confidence and self-efficacy (Dawe et al., 2016); identity as a teacher (Gretton, Bridges, & Fraser, 2017); TAs' motivation to teach (Kajfez & Matusovich, 2017); power and credibility of TAs in the classroom (Pytlak & Houser, 2014); prevalence of negative emotions related to teaching (Meanwell & Kleiner, 2014); and looking at verbal and nonverbal behaviours that generate a sense of

closeness with students, called teacher immediacy (LeFebvre & Allen, 2014). Recently, the need for a TA curriculum and competency development has emerged (Kalish et al., 2011; Korpan, 2014c; Schönwetter & Ellis, 2007; Simpson & Smith, 1993).

As the above shows, professional development programming for TAs is widespread but highly dependent upon the institution and department. The literature related to TA work has concentrated on programming, those engaged with that programming, and other aspects of TA work. What is of importance in this research is actually what TAs are doing to learn about teaching, whether they engage in programming or not. Since a significant portion of TAs do not engage in professional development prior to stepping into a teaching role, it is important to look at their learning on-the-job in the workplace.

Part Two: Workplace Learning

Taking a workplace learning perspective to investigate TA work has not been previously done. In Chapter 1, it was discussed why a workplace learning approach was suitable for this research and TA work. This section begins with the theoretical roots of workplace learning. It then moves on to discussion of the key themes within workplace learning that are relevant to this research: learner's characteristics, the learning process, and knowledge development.

Theoretical roots.

Theories about learning in the workplace derive from long-standing learning theories, including adult learning theories. Hager (2008) points us to the dominant metaphors derived from learning theories that have been used in workplace learning literature: acquisition, participation, construction/re-construction or transformation, and becoming.

Prior to 1985, the learning process was thought to be about knowledge and skills acquisition—it was about training. Sfard (1998) relates the epistemological assumption

underlying the acquisition model as: knowledge is external and independent of the knower and can therefore be acquired, made to be one's own, and easily transferred to another location. This is the brain as container imagery that shows the instructor pouring knowledge into someone's mind. This model assumes that there is only one right answer for each question, that answering all questions means excellence, and that learning is quantifiable (Hager, 2008). It also signifies that learning ends once one is in possession of knowledge, therefore learning is a product. There are long-standing debates about learning as product or as process. Interpreting learning as something that can be recalled at any time—that is, the product view—is problematic in that it negates the tacit, implicit, and embodied learning that takes place in the workplace (Hager, 2005). Hager (2011) notes how early work in vocational education underestimated the social, cultural, and organizational factors in workplace learning.

By 2000, constructivism brought about 'sensemaking' and new models of learning, such as informal and incidental, and that learning is experience-based (Marsick et al., 2011, p. 205). This brought a focus on the participation metaphor and the relational and social nature of learning, which in turn brought focus to the role of mentors, coaches, and teachers (Marsick et al., 2011). Most often cited is Lavé (1982), and Lavé and Wenger's (1991) situated learning theory. Through her research on traditional apprenticeships, Lavé (1982) argues that despite the fact that the learning process at work is not highly visible, the sequence of work activities is purposely and highly structured to support the learning process of new employees. Lavé found that employees begin with low stakes work so that errors have minimal impact, whether financial, social, or personal, and then move up to high stakes work. Furthermore, novices begin with working on the end product and working backwards to the beginning of the production of the item. In this way, novices understand the order and logic of how the item is produced. Lavé's

(1982) initial work led to Lave and Wenger's (1991) situated learning theory that challenged what it meant to learn. Key to this theory is that learning takes place in relation to action (doing) and not just to self-contained cognitive structures (Lave & Wenger, 1991, p. 15). Since situated learning theory foregrounds action rather than cognition, it positions the learning process in a relationship with the social context. Both the individual and social context change through the process of learning, highlighting the importance of the social relationships surrounding learning and that the learning process is reciprocal, not uni-directional (Billett, 1998). However, the authors point out that learning is limited by the conditions of legitimate peripheral participation (LPP). LPP recognizes the individual as new to the workplace, so legitimate but peripheral, since the novice begins learning at the edges of the work process. The key to legitimate peripherality though is access by novices to the community of practice and all that membership entails. Despite being peripheral, novices are active and welcomed into the work process (Lave & Wenger, 1991, p. 100). Peripheral participation does however, limit the scope of novice work and responsibility until they gradually learn the whole job (including lexicon) and become full participants. As well, situated learning theory brings attention to the many different factors associated with action: the cognitive, structural, and social factors that intersect and are embodied through action. Significant to identity, Lave and Wenger (1991) acknowledge the different roles that an individual takes on in a new role: as a learner, subordinate, and worker. All have different responsibilities, role relations, and involvement, meaning that learning inherently is about constructing identity. Lave and Wenger position learning as a way of being in the world, not just coming to know something. Learning is ontological, not just epistemological. Although applauded for bringing attention to the social aspect of learning, Lave and Wenger's work has been criticized for not recognizing the emotional aspect associated with learning (Ainley &

Rainbird, 1999), individuals (Hodkinson et al., 2004), and their agency (Tynjala, 2008). Cairns (2011) counters this criticism by pointing out that Lavé and Wenger (1991) referred to the individual as ‘the whole person’. Wenger’s (1998) subsequent work about communities of practice clearly addressed this issue by arguing for a more participatory approach to learning: participation between novices, experts, and the social context.

In the construction/re-construction or transformation metaphor, two variations exist. The first is constructivism that is about transformation of the individual learner and what they already know. In this view, the act of scaffolding new knowledge onto existing knowledge indicates that learning is continually reshaped. The other variation is collective learning, where together the context and learners change as learning occurs. An issue identified with this variation of the metaphor is that the focus is on how the changing context affects learners rather than both being affected (Hager, 2008).

Lastly, the becoming metaphor, is about the whole social and embodied self—skills, knowledge, and understanding (Hager, 2008, p. 684). The social aspect includes ideas from the two previous metaphors, participation and transformation, and embodied learning means inclusion of the practical, physical, emotional, and cognitive (Hager, 2008, p. 685). Learning is based on reciprocity with change happening in the learner and context, with each affecting the other. Hager (2008) calls learning in this metaphor a relational web, which is a more holistic view of learning as process. Becoming signifies the continuous process of learning that individuals are engaged in whether they are aware of learning or not. An emergent change over time theory, sometimes called emergence (Hager, 2011), identifies workplace learning as existing in the temporal dimension of always changing in complex contexts. The emphasis on

change represents the fluctuating nature of knowledge and that learning is not simply reproduction of previous knowledge. Learning is an emergent process that leads to change.

These foundational theories to workplace learning provide the broad theoretical background to workplace learning and this research. As is evident in the range of theories, they have been categorized based on their focus: the individual, the socio-cultural, and the relational web (Hager, 2011). Of considerable relevance to this study is the individual within a relational web that takes into consideration the socio-cultural factors that impact TAs' learning to teach.

Key workplace learning themes.

Three main topics that dominate workplace learning literature are location (where, when, informal, formal), mentors (form, methods, experience), and learners (biographies, subjectivity, agency, learning process, knowledge) that are discussed in relation to three main themes: their characteristics, learning, and knowledge. Since TAs (learners) are the focus of this study, the discussion below concentrates on learners' characteristics, learning process, and knowledge development.

Learners' characteristics.

The learner is central to this research. Of significant importance is what learners bring to their new work position (their learning biography), their subjectivity (identity), and agency (approach to learning).

Learner's biography.

Even though social learning theories dominate workplace learning literature, what individuals bring to the workplace affects their work performance and learning (Hodkinson et al., 2004). Specific to this research, a learner's biography is made up of prior knowledge and all the values and beliefs related to teaching and learning, which forms one's conceptions and

dispositions towards teaching and learning. Personal biographies and beliefs about teaching and learning are what novice teachers' draw upon to inform their teaching (Kagan, 1992).

This prior knowledge (understandings and skills), values, and beliefs impact how individuals interact with new knowledge (Hodkinson et al., 2004). If new knowledge is in agreement with what an individual already knows about that topic, learning will easily connect to prior knowledge (Ambrose, Lovett, Bridges, DiPietro, & Norman, 2010). Conversely, if new knowledge is distinctly different or contradicts prior knowledge (which could be inaccurate, inappropriate, or insufficient), learning can be difficult or hindered (Ambrose et al., 2010; Svinicki, 1998). Ambrose, Lovett, Bridges, DiPietro, and Norman (2010) point out that individuals do not always utilize prior knowledge, which also hinders new learning. Sometimes individuals require help connecting prior and new knowledge, especially when in a new context. To illustrate how prior knowledge can help or hinder learning, Ambrose et al. (2010) constructed the following diagram (Figure 1):

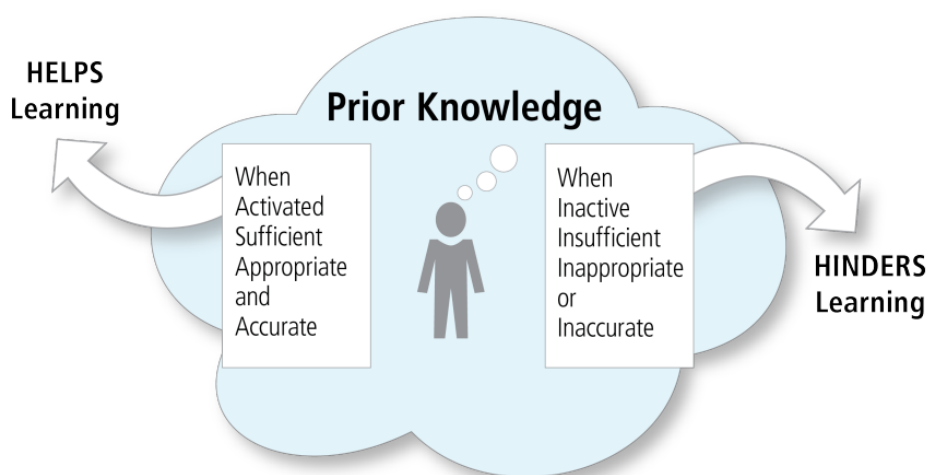


Figure 1. Qualities of prior knowledge that help or hinder learning (Ambrose et al., 2010, p. 14).

Therefore, prior knowledge influences workplace learning positively or negatively making it necessary to address prior knowledge and the skills new workers bring to their work position so that support can be developed to meet their needs (Hodkinson et al., 2004; Illeris, 2015).

A common problem that occurs for TAs, is that they are often encouraged to utilize their prior knowledge as a student to inform their teaching (Goertzen, Scherr, & Elby, 2010; Gunn, 2007; Hill, 2014). This premise assumes that their experience as a student can be transferred to their role as an instructor. Instead it gives TAs a false sense of knowing that restricts TAs to view all learners as a version of themselves (Nyquist & Sprague, 1998).

TAs' prior knowledge, beliefs, and values related to teaching and learning make up their conceptions and dispositions. In this research, conceptions are represented by what TAs say is important to them and what they will do. Dispositions are comprised of the beliefs, attitudes, qualities, values, and experiences related to teaching, learning, and work, and "exemplifies teachers' tendencies to act in certain ways under certain circumstances" (Katz & Raths, 1985, p. 350). Disposition, as the quote states, is represented by one's actions. Disposition is a complicated interplay of personal theories about learning and teaching combined with experience that one brings to the work situation (Billet, 2008). As well, workers' dispositions influence the ways in which they construct and take advantage of opportunities for learning at work. However, individuals are not always aware of their dispositions. For example, teachers cannot always articulate their dispositions but in order to bring about change in their actions, there is the need to ensure that the beliefs and values that underlie their dispositions are made explicit (Hashweh, 2003).

This brings up the discrepancy that can exist between what one states and one's actions. Espoused or implicit theories/conceptions derive from what people say they will do in a

situation. Theory-in-use (or actions) is what someone actually does in that same situation (Argyris, 1995) representing their disposition or the tendency to act in certain ways in a specific situation. Argyris and Schön (1974) brought attention to the fact that people are committed to espoused theories, theories about how they would like the world to be. This results in people potentially saying one thing but actually doing another, resulting in their words not being represented by their actions. Therefore, to consider disposition, what is stated that one would do in a situation needs to be reconciled with observed actions in that same situation. The aim is to divulge what conceptions about teaching and learning someone actually holds. Once that is determined, then those conceptions can be addressed to provoke change.

A great deal of literature has concentrated on individual's espoused theories (beliefs and values) or conceptions of teaching and learning (Akerlind, 2003; Barnett & Guzman-Valenzuela, 2017; Kember, 1997; Leger & Fostaty Young, 2014; Light & Calkins, 2015; Norton, Richardson, Hartley, Newstead, & Mayes, 2005; Prosser, Trigwell, & Taylor, 1994). Conceptions or beliefs in teaching are important because it has been determined that there is a link between conceptions, how teaching is approached, the quality of learning, and learning outcomes (Kember, 1997). Further, it has been shown that change in teaching (observed actions) cannot occur without being aware of one's conceptions so that they can be changed (Akerlind, 2003; Ho, 2000). In higher education, beliefs or conceptions about teaching underlie two broad approaches to teaching: teacher-centred/content-oriented and student-centred/learning-oriented⁹ (Kember, 1997).

⁹ Teacher-centred teaching is defined as focusing on what the teacher will do in the course whereas a learner-centred approach focuses on what the learner will do. Samuelowicz and Bain (1992) identified a key difference in the two approaches. In a teacher-centre/content-oriented approach, students' existing conceptions about the topic are not taken into consideration. In contrast, a student-centred/learning-oriented approach, begins with students' existing conceptions.

As already stated in Chapter 1, TAs enter their teaching work with strong espoused theories or conceptions and dispositions about teaching and learning (Goertzen, Scherr, & Elby, 2010; Gunn, 2007). Goertzen, Scherr, and Elby (2010) noticed that despite engaging in professional development over the term, a TA's established beliefs did not alter. Morris (2001) conducted research looking at the connection between TA beliefs about teaching and what they did in practice. TAs identified what was important to them, such as the need to only speak French in the classroom, develop good relationships with students, and provide a relaxed classroom. In practice, this was not observed, illustrating the disconnect that can exist between espoused theories (what individuals say they will do) and theories-in-use (their disposition) (Goertzen, Scherr, & Elby, 2010; Morris, 2001). In another study, Saroyan, Dagenais, and Zhou (2009) looked at the potential for change in graduate students' beliefs about learning how to teach while taking a course about teaching. Regardless of taking the course, they found that most thought of teaching as teacher-centred as opposed to learner-centred. Similarly, Leger and Fostaty Young (2014), studying graduate student teaching philosophy statements pre and post a learner-centred course, found that their conceptions of teaching did not change but instead confirmed their existing conceptions. Further, McGivney-Burelle, DeFranco, Vinsonhaler, and Santucci (2001) showed in their research that despite TAs learning about learner-centred teaching, TAs defaulted to transmission teacher-centred teaching in practice, confirming previous studies that showed that conceptions about teaching need to be divulged and change before one will take on learner-centred approaches to teaching (Akerlind, 2003; Ho, 2000).

When no heuristics exist on how to approach solving a problem, people will draw on their established beliefs, which impacts how they learn and work (Harteis, Gruber, & Lehner, 2006). Through their research study, Bauer, Festner, Gruber, Harteis, and Heid (2004) found that

individuals' conceptions about learning transferred to the workplace, influencing how they sought opportunities to learn, and to appraising the workplace as a learning environment. All of these examples show the existence of conceptions about teaching and learning that if not addressed, can possibly conflict with one's disposition and lead to difficulties in understanding issues that arise due to this conflict. To illustrate, Schussler, Stooksberry, and Bercaw (2010) give an example of a teacher who believes that success results from effort and if a student does not achieve the desired level the teacher expects then they will determine that the student did not try hard enough. This prohibits the teacher from seeking out other explanations as to why the student may be struggling. Without the teacher acknowledging this belief and how it is impacting support of student learning, the teacher is not able to adjust actions in the classroom to support the student's learning.

In an effort to look at how disposition and learning are connected, some researchers have looked at indicators of an expansive or restrictive individual learning disposition (Shanks, Robson, & Gray, 2012). An individual with an expansive learning disposition participates in multiple communities of practice inside and outside the workplace. In contrast, an individual with a restrictive learning disposition would not participate in multiple communities of practice inside or outside the workplace. The authors found that no individual neatly fits into one category, rendering learning in the workplace as dependent on the context and individual (Shanks et al., 2012). In contrast, Hodkinson and Hodkinson's (2005) research found that teachers' disposition was one of the significant factors that enabled or constrained their learning.

In summary, one's learning biography constructs one's conceptions and dispositions towards work and learning. One's dispositions are rendered visible through actions taken in

certain situations, which can sometimes counter an individual's stated conceptions (espoused theories).

Subjectivity.

Subjectivity is defined as “our ways of engaging with and making sense of what we experience through our lived experience” (Billett, 2006, p. 5-6) as one identifies with a work position, making identity an allied concept to subjectivity (Billett & Somerville, 2004; Billet, 2006). Subject positions are continuously in development as one negotiates different experiences in the world but one is not always conscious of this ongoing development. Further, individuals may hold contradictory subject positions at the same time (Fenwick, 2006), such as teacher and student. Billett (2006) states that subjectivity is expressed in two forms: sense of self and identity. Sense of self guides how one acts and thinks whereas identity has social and personal associations. Fenwick (2006) on the other hand, states that subjectivity is not about the self nor identity. Identity is something that the subject would like to identify with. “Subjectivity is realized through enactment: articulations meshed with the boundaries defining the conditions, activities, geographic locations and positions that they find themselves negotiating in different work environments” (Fenwick, 2006, p. 21). Subjectivity is relational, bound by social, historical, and cultural practices as subjects exercise their agency in how it is enacted (Fenwick, 2006).

In this research, subjectivity and identity are closely intertwined (Eteläpelto & Saarinen, 2006). Eteläpelto and Saarinen (2006) found in their research that professional identity is developed through the work context and linked to personal growth. Taking on a subject position means being able to exercise one's agency and be recognized in the community (Eteläpelto & Saarinen, 2006). If the community does not promote the subjectivity of the individual, allow

exercising of agency, and identify the new employee as a member, then the individual will not feel part of the community. Therefore, to promote subjectivities, individuals within the community have to acknowledge and support new members. Unfortunately, communities don't always support development of subjectivities, or of all of its members. This results in dis-identification (Hodges, 1998) where individuals turn away from the community and seek other communities to strengthen their identity. Eteläpelto and Saarinen (2006) found that individuals need to have an active participatory role in their work position so that their professional subjectivities can develop (p. 175). Therefore, development of one's subjectivity is an important aspect of taking on a new role and is encased in six intersecting pathways (Thrift & Pile, 1995):

1. *Positions and politics of location* – how a position is located within the community affects many aspects of the position (Thrift & Pile, 1995), such as access to support within the workplace. Lavé and Wenger's (1991) notion of legitimate peripheral participation is an example of how positioning impacts the subjectivity of an individual's role. Since the term situates the learner on the periphery, it indicates minimal power and the potential limitation of supports. Sawchuk (2011) notes how critical studies of workplace learning have shown that peripheral workers often receive the lowest level of support and instruction (p. 166). Fuller, Hodkinson, Hodkinson, and Unwin (2005) challenge the idea of situating learners as peripheral stating that newcomers bring experience to the group, therefore arguing that newcomers are contributing members from the beginning.
2. *Movement* – in this pathway, the metaphor of moving and changing subjectivities is recognized as being problematic and dependent upon an individual's agency (Thrift & Pile, 1995). Due to different societal factors, Thrift and Pile recognize that changing a

subject position is easier for some and not for others. The difficulty new teachers have in transitioning from identifying as a student to identifying as a teacher (similar difficulties have been noted in other fields, such as nursing and medicine) has been documented.

Kagan (1992) notes that all novice teachers have a strong image of what a teacher looks like and what constitutes good teaching based on their own experience as a student. Even though individuals feel the need to exercise their agency, most want a stable subject position (Fenwick & Somerville, 2006).

3. *Practices* – this pathway takes into consideration how temporal and other material factors (Thrift & Pile, 1995) inform and shape worker subjectivities. Workplace practices, such as the length of the work day, contract or permanent work, working conditions, and access to materials affect formation of the worker's subjectivity (Fenwick & Somerville, 2006). The TA role is recognized as a transitory role, not a permanent position, and no one has a career as a TA (Staton & Darling, 1989). TAs are in a short-term work position. Over their graduate degree, they are assigned to different courses, course supervisors, and aspects of teaching in higher education. There is no mechanism in place to bring the fragmented nature of TA work into a unified whole. A teaching dossier (or portfolio) is the most common form of representation but TAs are not required to develop a dossier during their graduate work. Only those TAs interested in an academic career may consider developing a dossier.
4. *Encounters with others* – within this pathway, Thrift and Pile (1995) note how power and meanings associated with different positions affect the development of a subject position. For example, Eteläpelto and Saarinen's (2006) work is an example of how important it is to have one's position recognized and acknowledged by the work community in order to

facilitate development of one's subject position. In their encounters with others, TAs experience role ambiguity (Lueddke, 1997; Muzaka, 2009; Park, 2002). Park (2002) found that TAs feel a lack of ownership and therefore engagement due to the ambiguity of their role in the department. Muzaka (2009) found that TAs see themselves as students, students perceive them as halfway between being a student and an academic, and staff see them as students and apprentices. Departments expect excellent work but TAs do not receive any of the benefits that faculty receive (Muzaka, 2009). This ambiguity affects their perceptions of their identity, value, and importance (Park, 2002).

5. *Regimes of the visual* – shows how the gaze of others inform and shape the subject position (Thrift & Pile, 1995). Within the workplace, the gaze could be from a manager or fellow workers. The imposter syndrome is a common concern of TAs. Imposter syndrome is when an individual is fearful that others will 'see' that the person is not suitable for the position, will be found out, and revealed as an imposter (Smollin & Arluke, 2014). Smollin and Arluke (2014) conducted a qualitative study about graduate students' first foray into teaching and the challenges they face, such as imposter syndrome. To address their challenges, the authors found that TAs lower their expectations, admit to 'playing the role', only go to other graduate students for information, and never tell their course supervisors of any issues or challenges in the course. The authors conclude that most of the problems that novices have are actually structural and do not relate to themselves.
6. *Aesthetics/ethics* – each subject position is associated with different representations (Thrift & Pile, 1995), such as dress and symbols associated with the workplace and ethics associated with the practice. Branstetter and Handelsman (2000) looked at the ethical

behaviour of TAs, behaviour that is expected of individuals in a professional teaching position. They found that TAs do not enact their espoused beliefs about ethical conduct, and that the more experience a TA has increases the occurrence of unethical behaviour. They conclude that this was due to the amount of autonomy TAs have combined with a lack of mechanisms for feedback about their TA work.

These six pathways illustrate that the workplace can open opportunities for subjectivity development but they can also close opportunities (Fenwick & Somerville, 2006). Similarly, identity development can be encouraged or stifled.

In the workplace, identity has been found to be both personal and social. Individuals need to identify with the job they have attained in order to perform well (Coy, 1989; Wenger, 1998). Identity at work comes with societal expectations, rules, and responsibilities but is also personally constructed so that the individual has control over how they enact that role (Billett, 2006). Illeris (2011) claims that “workplace learning takes place in the interaction between workplace practice and the learner’s work identity” (p. 37). Identifying with a new role and its associated expectations, rules, and responsibilities, contributes to a new employee’s confidence, commitment, motivation, and agency at work (Billett, 2006). Winstone and Moore (2017) used role identity theory to see if liminality applied to the TA experience. They gathered narratives from TAs’ group discussions and found three key themes:

- Identity work – TAs are striving to develop their identity as an academic but at this stage it is fragile. An incident can determine whether they decide to alter their identity development. In general, TAs lack reflexive awareness as teachers and are unable to experiment with their provisional selves. To do so, they need autonomy.

- Positioning – liminality and identity malleability explains TAs’ feelings about their role. They are able to identify with students but not as an instructor.
- Conflict – exists between emerging self as teacher and researcher. TAs have a difficult time reconciling and prioritizing between the two identities (Feezel & Myers, 1997; Vahey et al., 2010).

Winstone and Moore suggest that there can be synthesis between roles but TAs need help to find this synthesis.

The development of a teacher identity over time is evident in Volkmann and Zgagacz’s (2004) study. Over the term, TAs’ professional identity did not shift but was in the process of developing, constructed in relation to other people’s reactions. McAlpine and Amundsen (2016) developed the concept of identity-trajectory to represent the identity development that graduate students and novice academics go through. Kagan (1992) emphasizes that novice teachers need to assume a teacher persona. How this is done is within a complex interplay of what Evans (2007) calls ‘bounded agency,’ which sees the individual accepting and resisting varying aspects related to the subject position guided by past and potential futures. Fenwick and Somerville (2006) note that new subjectivities develop through an interaction between agency, involvement in workplace practices, and how the work is structured. This brings up the question, what role does agency have as subjectivity is being developed in the workplace?

Agency.

Agency is the individual making decisions and choices that are socially situated (Hodkinson et al., 2004) and guided by one’s learning biography and subjectivity. Billett and Somerville’s (2004) view is that, “individual’s identity and subjectivities shape the agentic action and intentionality that constitutes the self” (p. 315). Work is not merely reproduced by

individuals (Billett, 2006). Instead, individuals exercise their agency by constantly making changes to the work they do by improving practice, responding to changes, such as learning a new job, or other facets related to their work (Billett, 2006).

One's agency is linked to how one develops knowledge. Marton and Säljö (1976) identified surface and deep approaches to learning, where students either take a surface approach, learning by memorizing, or a deep approach to learning. Since then, a third approach has been identified called achieving (Biggs, 1987). Approaches to learning "refers to the learner's motives towards, and conscious use of strategies in pursuit of, recognized learning goals" (Kirby, Knapper, Evans, Carty, & Gadula, 2003, p. 33). The following definitions derive from Biggs (1987) and Ramsden (1983):

Surface approach – minimal effort to do tasks to avoid failure. Strategy used is reproduction, typically through memorizing facts with no concern for meaning.

Deep approach – intrinsic motivation promotes seeking meaning and understanding.

Strategies used include digging deeper into underlying concepts related to what is being learned, doing research and reading widely, and relating what is being learned to previous knowledge.

Achieving approach – is extrinsically motivated in order to compete and self-enhance. The end goal is what is important, whether that is a high grade or other 'prize'. Strategies used are about organizing time well to achieve the goal (Kirby et al., 2003, p. 33).

Entwistle and Ramsden (1983) identified a fourth approach that they termed 'non-academic orientation'. This is characterized as avoiding learning because different factors are more important, such as the social aspect.

Individuals are active agents in deciding what to learn, how to learn, and whether to learn (or not) (Billett, 2001b). The approach individuals take to learning is not static. Rather, individuals use their agency to decide what type of approach they are going to take to learn, which is dependent on their disposition, motivation about what is to be learned, and other factors related to the work and workplace environment (Billet, 2001b). For example, Kagan (1992) found that because novice teachers did not take on a teacher persona (teacher subject position), they took a surface approach to learning how to teach. In the workplace environment, there may not be the need to learn deeply in particular work practices or it may be discouraged, or some workplaces may encourage and value a surface approach more than a deep, critical, and creative approach. Nevertheless, studies highly recommend that workplaces need to help workers develop the skills to problem solve and link new information to previous knowledge, all of which are associated with deep learning, making deep learning highly applicable to the workplace (Kirby et al., 2003, p. 34). As an example of this, one study looked at TAs' learning process by doing a content analysis of new TAs' journals about teaching, finding that journaling helped TAs become more self-aware of their learning process, where they needed to improve, and reflect on their experiences as an instructor (Gallego, 2014), all of which encouraged a deeper approach to learning.

Summary.

Learners' characteristics are comprised of their learning biography, which forms their dispositions towards teaching and learning that can overpower stated beliefs/conceptions. Since dispositions are strong, it is necessary to unpack the underlying beliefs and values (conceptions) that shape one's dispositions. By making those beliefs explicit, it is then possible to address those beliefs and potentially change individuals' tendencies to act in certain ways in teaching

situations. Addressing dispositions and conceptions at the beginning of a new work position is necessary so that individuals can take on new subject positions guided by their agency as to what to learn or not—the learning process.

Learning process.

Learning in the workplace is ubiquitous (Billett, 2002; Colley, Hodkinson, & Malcom, 2003; Eraut, 2000; Illeris, 2009; Lavé, 1982; Malloch & Cairnes, 2011). As established in Chapter 1, learning is an ongoing process that emerges from the context in ways that cannot always be anticipated, making learning an ongoing creative process that is always changing in complex contexts (Hager, 2011). Despite this complexity, research into learning in the workplace has been able to identify the following: where and how learning occurs in the workplace, levels of workplace learning, when learning takes place, and supports that enable or constrain learning. Each of these are discussed below.

Where and how learning occurs.

Individuals are not always aware that learning is occurring in the workplace (Eraut & Hirsh, 2007). People tend to default to thinking about learning events as only taking place in a classroom setting, where it is most commonly recognized. Through their research, Eraut and Hirsh were able to identify where and how learning occurs in the workplace: through work processes, learning activities, and learning processes, each described below.

Work Processes with learning as a by-product	Learning Activities located within work or learning processes	Learning Processes at or near the workplace
Participation in group processes Working alongside others Consultation Tackling challenging tasks and roles Problem solving Trying things out Consolidating, extending, and refining skills Working with clients	Asking questions Getting information Locating resource people Listening and observing Reflecting Learning from mistakes Giving and receiving feedback Use of mediating artifacts	Being supervised Being coached Being mentored Shadowing Visiting other sites Conferences Short courses Working for a qualification Independent study

Table 1. *Typology of early career learning (Eraut & Hirsh, 2007, p. 25)*

Work processes with learning as a by-product had the highest recording of learning taking place (Eraut & Hirsh, 2007). Success in this category though is dependent on the quality of interactions and opportunities to learn, which means this category has a lot of variability. The following are ways in which new employees learn while performing their work:

1. The first in this category is participation in group processes, such as being part of a team. Through conversation within the team, an individual learns about work processes and other elements related to the work situation, including social aspects.
2. Working alongside others allows a new employee to listen, watch, and participate in activities, which is important to learn others' tacit knowledge.
3. One-on-one consultations or performance meetings within an organization with a mentor or other designate provide important information for new employees.
4. Tackling challenging tasks and roles can be a successful way to learn but the authors found that the individual needs to feel supported and confident in their ability.
5. Problem solving, whether individually or in a group, provides an opportunity to learn how individuals in the organization approach issues related to their work.

6. Trying things out comes with the intention to learn so prior to trying something out, the new employee will assess the risk, and reflect on how it turns out.
7. Consolidating, extending, and refining skills is a necessary condition of work and best if guided by a learning plan.
8. Working with clients, or in the case of higher education, students, a new employee will learn through interactions with students but this can be emotionally charged.

The next category is learning activities located within work or learning processes.

1. Asking questions and getting information mostly sought from peers.
2. Locating resource people but this is not highly valued by some employees.
3. Listening and observing is only effective if accompanied with reflection and discussion in case bad examples are observed. Otherwise, individuals may not know the meaning of what they hear and observe.
4. Reflecting is best if guided.
5. Learning from own mistakes and others.
6. Giving and receiving feedback that is task specific but new employees need long-term feedback to promote commitment. The authors found that too little feedback was provided in general. Settings where feedback typically occurs are: immediate comments on a particular task; informal conversations away from the job that may be unintended or intended advice; formal roles such as a mentor or supervisor and may be at set times, mid-term progress reports; and appraisal where feedback is provided on personal strengths, weaknesses, and discussion of learning opportunities and how to meet expectations.

7. Use of mediating artifacts, such as tools, instruments, and all types of material useful for accomplishing work activities.

The last category is learning processes at or near the workplace that have learning as the prime objective.

1. Being supervised, coached, or mentored and receiving on-the-spot support and feedback.
2. Shadowing or visiting other sites to bring a wider understanding to own work situation.
3. Conferences for updates and networking.
4. Short courses, a common form of continuing professional development but only has impact if followed up by practice at work.
5. Working for a qualification is effective when the individual is building on prior knowledge gained at work.
6. Independent study guided by learning plans. Employees did not use manuals and guides provided, preferring to ask a colleague.

As can be seen by this extensive list, learning is ubiquitous in the workplace. The issue is whether learning is recognized.

Levels of workplace learning.

Ellstrom (2011) divides the learning process in the workplace into two levels: adaptive and developmental. Adaptive learning is about learning certain routine tasks (getting to know workplace norms, social practices, and routines) or the improvement of task performance. On the other hand, developmental learning is focused on the individual or collective and more radical changes (source of innovation and change). The two levels, adaptive (more reproductive) and developmental (more creative) are based on the scope of action required in three aspects of work: tasks to be performed, methods and procedures to be used, and the results to be achieved when

the work given is clearly defined (Ellstrom, 2001). When work is not prescribed in detail, individuals have to “use their own competence and authority to define and evaluate the task, methods, and results” (Ellstrom, 2001, p. 423). The following table illustrates the adaptive and developmental levels of learning.

Table 2. Levels of learning as adaptive and developmental (Ellstrom, 2001).

Aspects of the work-learning situation	Levels of learning			
	Adaptive learning		Developmental learning	
	(1) Reproductive	(2) Productive, Type 1	(3) Productive, Type 2	(4) Creative
Tasks	Given	Given	Given	Not given
Method	Given	Given	Not given	Not given
Results	Given	Not given	Not given	Not given

Ellstrom (2001) explains that the lowest level of learning is reproductive learning, which does not require any decision making and is more automated action. The less decision-making an individual has to do equates to minimal learning. The next level, productive type 1, deeper learning is initiated due to the need to make decisions about potential results and to adjust methods to acquire those results. In productive type 2 learning, the individual needs to determine the results and methods to complete the task given. The highest level is creative and this is when the individual needs to define the task, determine outcomes, and choose methods. This often occurs when someone encounters a new situation. In this highest level of learning, the reasoning behind the decisions made are not always made explicit. The author states that this level can also occur when individuals question established approaches in the workplace and act to change practices (Ellstrom, 2001, p. 424). All four levels are used and entwined in most work situations but most workers default to adaptive learning when possible.

When learning takes place.

As stated at the beginning of this section, not all learning is conscious or planned due to the complexity of the workplace. Recognizing these facts, Berg and Chyung (2008) categorize learning into intentional and unintentional workplace learning. Intentional informal learning activities in the workplace include self-directed learning, mentoring, networking, asking questions, and receiving feedback. Unintentional informal learning takes place while performing daily tasks, making it difficult to separate work from learning in the learner's mind, since learning through mistakes is often construed as work and not actual learning. Unintentional learning also takes place daily through interactions, group activities, and working with others with the quality of such learning dependent on the quality of the interpersonal relationships.

Eraut (2000) delineates intentional and unintentional further by identifying three types of workplace learning: implicit learning, reactive learning, and deliberative learning. Implicit learning is unconscious, reactive learning is conscious but occurs when there is little time to think, and deliberative learning is when there is a clear goal that learning will likely result. These three types of workplace learning exist on a continuum of intentions with implicit learning at one end and deliberative at the other. In between, is reactive learning where the person is aware of the learning but it was unintentional and may require time and reflection for it to become deliberative and explicit. The following table details the typology.

Table 3. Typology of informal learning (Eraut, 2000, p. 16)

Time of Stimulus	Implicit Learning	Reactive Learning (unintentional)	Deliberative Learning (intentional and explicit)
Past Episode(s)	Implicit linkage of past memories with current experience.	Brief <i>near-spontaneous reflection</i> on past episodes, communications, events, experiences.	<i>Review</i> of past actions, communications, events, experiences. More systemic reflection.

Current Experience	A selection from experience enters the memory.	<i>Incidental</i> noting of facts, opinions, impressions, and ideas. <i>Recognition</i> of learning opportunities.	<i>Engagement</i> in decision-making, problem-solving, and planned informal learning.
Future Behaviour	Unconscious effects of previous experiences.	Being prepared for <i>emergent</i> learning opportunities.	<i>Planned</i> learning goals and opportunities.

As can be seen in the table above, Eraut (2000) provides time of stimulus to signify how the learning taking place relates to past, current, and future behavior within the different types of learning. All take place during work and involve learning, despite not always being recognized as such (Eraut, 2000).

Eraut's typology of workplace learning has been applied to K to 12 teachers' work (Hoekstra, Beijaard, Brekelmans, & Korthagen, 2007). It was found that deliberative learning took place when a teacher intentionally tried something out in the classroom to see if it worked, and/or sought to learn about a particular topic for their work. Reactive learning was when the teacher learned due to questions students asked, or ideas and opinions shared during a lesson. The teacher may adjust their actions in response to what was happening in the class. Lastly, implicit learning happened when it was not stated explicitly and therefore became tacit knowledge.

Implicit learning is difficult to determine due to being largely unconscious, embodied, and uncodified (Eraut & Hirsh, 2007). Implicit learning develops tacit knowledge, which is an important aspect of learning in the workplace (Hager, 2005), and used in reactive or deliberative learning situations.

When learning is reactive and in response to a situation in the workplace, individuals take the following steps:

1. understanding the situation,
2. decision-making,
3. skillful action, and
4. monitoring (Eraut & Hirsh, 2007).

These steps are interconnected and can occur very quickly. To understand reactive learning in the workplace, Eraut (2004) devised the following diagram.

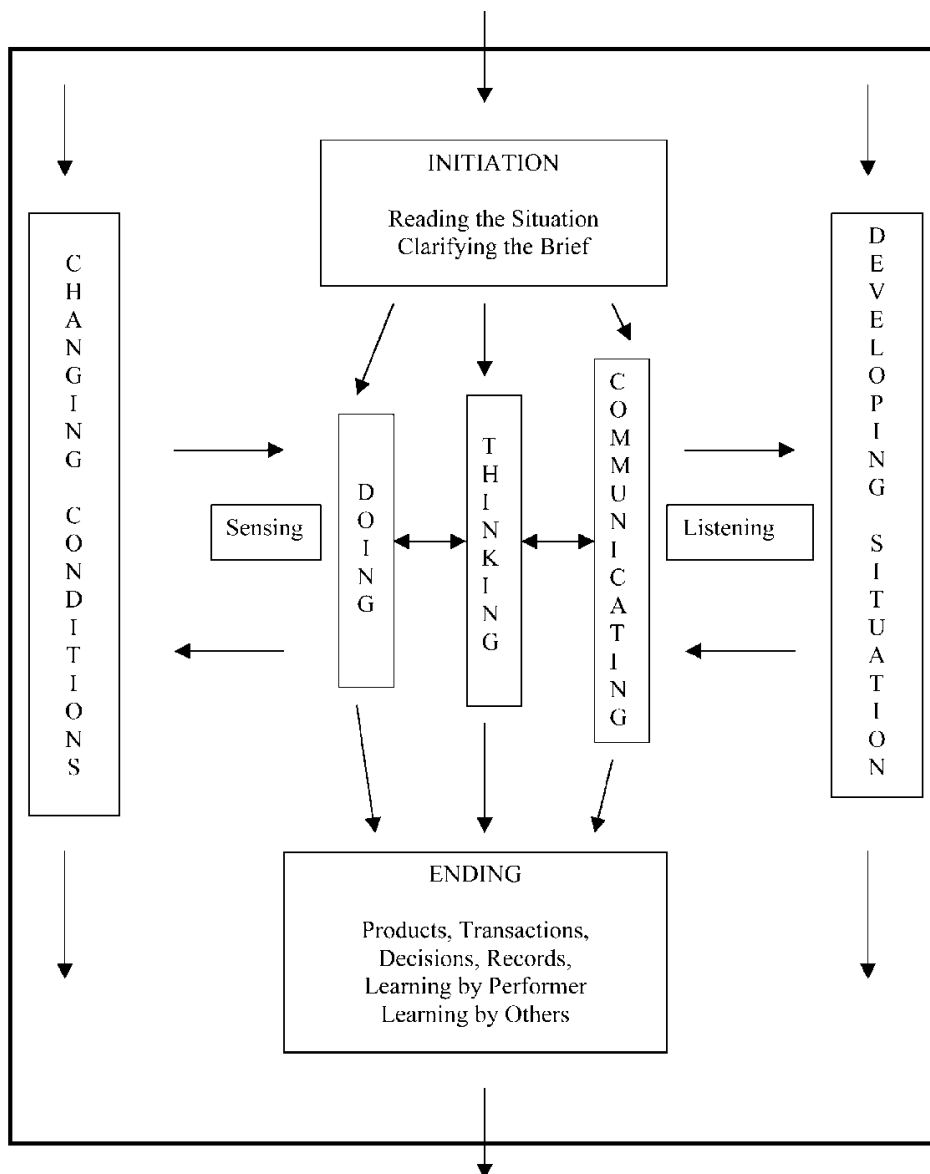


Figure 2. Activities during a performance period (Eraut, 2004, p. 285).

Understanding the situation.

Initiation is when a situation occurs and represents the first step, understanding the situation. This first step may take place within minutes or longer, depending on the situation in the workplace. Through sensing and listening, the individual aims to understand the situation. The most important factor that contributes to the depth and breadth of understanding a situation is the time available for this first step to take place (Eraut & Hirsh, 2007). If the time is limited,

then the individual relies on a reflex response related to pattern recognition that can be applied to the situation. If there is a bit more time but still quick, intuitive or tacit knowledge can be used in the situation. If there is a longer time allotted, then the individual can take a more analytical approach. Eraut and Hirsh point out that information accessed in any given situation is not always explicit; it is formed through impressions of situations and people, and through culturally embedded knowledge. This implicit information and tacit knowledge are used unknowingly to inform an individual's actions (Eraut & Hirsh, 2007).

Decision-making.

Eraut states that doing, thinking, and communicating are constantly interacting. In teaching, most situations are what is termed, "hot action," where conditions can be constantly in flux (Beckett, 2002, p. 73). Becket (2002) describes it further: "Hot action refers to those frequent workplace experiences when, moment by moment, decisions are taken on the run, case by case, and with the nagging doubt that action might be inadequate—superficial, hasty, and inappropriate" (p. 73). Hot action requires quick thinking, doing, and communicating to respond to the changing conditions. McAlpine and Weston (2000) define decision-making as allowing "knowledge to be used to influence action" to "maintain, initiate, adjust, or terminate actions" (p. 369). The knowledge used can be explicit or tacit. As with understanding a situation, the amount of time available to make a decision though can influence how decisions are made (Eraut & Hirsh, 2007). Eraut and Hirsh (2007) explain that if time is afforded to analyze the situation, an individual can actively integrate and recontextualize explicit and tacit knowledge. If time is not afforded, an individual will quickly form an understanding of a situation and make a decision primarily based on tacit knowledge. When decisions are made quickly, it is not always clear to the individual or others why that decision was made (Eraut & Hirsh, 2007). Decision-making is a

complex process that is dependent on how it is interpreted by the individual at the time and relates to personal factors rather than codified knowledge (Eraut & Hirsh, 2007). Eraut (2000) points out that K to 12 teachers, when faced with decisions in the classroom, default to what they have experienced even if that is not the best way to react and even though they have engaged with explicit learning to do the opposite. Respondents were asked to explain the knowledge that underpinned their practice but none could identify what it was that determined their decisions (Eraut, 2000).

In their research, McAlpine and Weston (2000) interviewed faculty and found that decisions made, either prior, during, or after teaching, were based on cues from students and related to the teaching and learning goals of the instructor. When looking at what changed due to decisions made by faculty, the authors found two main categories:

- Monitoring students – looking at cues (verbal and non-verbal) in the learning/teaching situation and how it was evaluated in the classroom by the instructor. Evaluation was either positive, neutral (acceptable), negative (inadequate) or mixed (a combination of both negative and positive).
- Monitoring themselves – monitoring their own knowledge in the explicit domains and actions in the classroom.

Additionally, they note that decision-making resulted in:

- action, where a change was made;
- corridor of tolerance (CoT), which is the space where what is occurring is acceptable but if gets to be too much then a decision is made to take action; or

- not knowing/inaction, where the instructor recognizes that the actions in the learning/teaching situation are beyond the corridor of tolerance but does not know what to do or decides not to do anything.

Lastly, the authors determined what explicit domains of knowledge the decision-making was related to, either:

- content,
- general pedagogical – broad principles and strategies for the classroom,
- pedagogical content – best strategies to teach content, or
- knowledge of learners – knowing characteristics of students, including prior knowledge learners typically bring about the subject, at the group and individual level.

As McAlpine and Weston's (2000) research shows, decision-making in the classroom is a complex interplay of many factors.

Skillful action.

Once a decision is made to take action, how that action is rendered is dependent on the approach to the situation and abilities of the teacher. Ellstrom (2011) identifies four different approaches to action. Some actions are based on acquired skills that do not require a lot of attention. These types of actions are performed smoothly. For example, when teaching, one may be skilled at making personal connections with students. This requires no effort from the individual. Other actions are based on established rules or procedures. An example here would be safety procedures required in a chemistry lab. Sometimes, rule-based actions may be adjusted, based on the situation and previous experience. A third form of action are those that are based on knowledge that has been subjected to analysis. Learning that establishing an inclusive learning environment is important from the first day of class, a TA may draw on research that shows

different strategies that can achieve that goal. Lastly, reflective actions are based on a meta-cognitive approach that takes into consideration larger goals. Knowing the goals of the course as it relates to a program, may require a TA to take actions in the classroom that support those larger goals. Not all of these forms of actions may be applicable to teaching. For example, looking at K to 12 teachers in the workplace, Eraut (1994) claims that teaching is too complex to be the mere repetition or application of knowledge. Instead, Eraut states that interpretation is what is required to address the complexity of the teaching role.

Monitoring.

Lastly, ending represents time to reflect on what was achieved and what is left undone that needs follow-up. Monitoring is about reflecting. The act of reflecting on actions and decisions taken (deliberately interpreting and making sense of these experiences) has the potential to lead to learning (Schön, 1983). Of significance though, is the time required to self-reflect and monitor actions of oneself and others (Ellstrom, 2011). Therefore, reflection may not take place, limiting explicit learning. If reflection does take place, whether during or after the situation, mechanisms need to be in place to facilitate reflection (Bolton & Delderfield, 2018; Moon, 2006). For learning to occur, it is important for individuals to address the inconsistencies caused by the tension between theories-in-use and espoused theories (Raelin, 2007). To do so, individuals need to incorporate reflective practice into their learning process (Bolton & Delderfield, 2018).

When learning is deliberative, it is intentional and explicit. It is represented by individuals seeking out learning activities located within work or learning processes, and learning processes located near or at work.

In summary, when learning takes place is either implicit, reactive, or deliberative. Implicit learning occurs unintentionally. When reactive, it is also unintentional and follows four steps: understanding the situation, decision-making, skilful action, and monitoring. These make up the sequence of actions individuals take as they react to a situation in the workplace, leading to learning that is implicit and explicit. When deliberative, it is intentional. What is missing in this model is the emotional aspect of the situation. If the situation provokes high emotions, these will affect how an individual understands the situation. This model is not restricted by a time frame and can occur over minutes or whatever time frame is possible dependent on the situation. Important to this category is that knowledge development is dependent on whether supports in the workplace enable or constrain learning.

Supports that enable or constrain learning.

Eraut (2004) states that even though the learning process at work is not highly visible, work activities can be purposely structured to support the learning process of new employees. Ellstrom (2011) notes that structural aspects shape the learning process. The structure provided in the workplace to support learning is termed affordances, which can be expansive or restrictive, and enabled or constrained. The term affordance derives from Billett's (1998) research about workplaces as learning environments. Workplace affordances are the degree to which a person is invited to access work practices and able to access learning opportunities (Billett, 2011). For example, having access to mentors and other support, whether that is more formalized instruction, professional development, or material artifacts like guidebooks, are considered affordances. Invitations to engage with affordances are affected by workplace political and power relationships demonstrated by hierarchies, territories, affiliations, and cultural practices that are distributed in different ways (Billett, 2011). Workers that are denied support and

opportunities are not encased in a learning environment and therefore do not have access to affordances (Billett, 2011).

Billett (2001a), reviewing workplace learning research, found that the distribution of affordances in the workplace can be based on several factors, such as status of work and workplace demarcations like unions. Additionally, how individuals are invited into work activities, can be limiting: part-time workers may not be afforded the same opportunities as full-time workers, and lower status workers have been shown to be denied affordances that high status workers have (Darrah, 1996). When affordances are provided, it is still up to the individual to engage with them. Each person will do so differently based on how they interpret, construct, and engage with their work, and whether they judge the affordances are worthy of participation based on their own identities and subjectivities (Billett, 2011, p. 117).

Affordances that are made available are dependent on the form of work required. Some examples of potential affordances in the academic workplace are:

- support to undertake professional development,
- access to explicit knowledge about the work required,
- support to engage in reflection, and
- opportunities to engage in learning conversations, what Black and Kaplan (1998) call “sitting beside” (p. 213) with a variety of mentors.

Research conducted about the affordances provided for professors in higher education found that mentoring was one of the most important affordances (Warhurst, 2008).

Fuller and Unwin (2003) developed the concept of affordances at work as existing on an expansive to restrictive continuum that is illustrative of the access employees have to learning opportunities. Expansive means providing the employee with active participation in the learning

environment, paid time to engage in education, gradual transition from low-risk to high-risk tasks, institutional recognition that the employee is a learner, clear learning goals, a personal learning plan, and more than sufficient support materials (Fuller & Unwin, 2003). Restrictive inhibits the learner's access to learning, mentors, resources, support, and maintains low status in the work environment. Fuller and Unwin's (2003) research has found that a more expansive learning environment leads to deeper learning. In order to create expansive learning spaces, three types of opportunities are required:

1. the chance to engage in diverse communities of practice in and outside of the workplace,
2. the organization of jobs to provide employees with opportunities to co-construct their knowledge and expertise, and
3. the chance to deal with theoretical knowledge in off-the-job courses (leading to knowledge-based qualifications) (Tynjala, 2008, p. 142).

The expansive/restrictive continuum has been used in several research studies. For example, Boyd, Smith, and Ilhan Beyaztas (2015) used the expansive/restrictive continuum to investigate nursing and midwifery academic programs in the UK. In spite of finding an expansive learning environment, it was hindered by factors, such as a heavy workload, unwritten departmental cultural rules, and the need to maintain up-to-date clinical skills. This example shows that if expansive affordances are provided in an expansive learning environment, work needs to be structured so that employees can take advantage of opportunities provided.

Another study, looked at Eraut's learning and context factors and whether they were expansive or restrictive for K to 12 teachers' learning. The findings were:

Learning factors (expansive) – found that professional learning goals were aligned to the needs of staff: teachers were self-directed and had autonomy and choice with their

learning, and teachers regularly collaborated, shared ideas, and supported one another (Feeney, 2016, p. 470).

Learning factors (restrictive) – found that there was lack of commitment, expectations were not clear, and that there was pressure to make changes in the classroom: some staff were closed off and difficult to work with (Feeney, 2016, p. 471).

Context factors (expansive) – found that there were many structures in place, such as a vertical leadership team with broad-based representation, learning groups, and time built into the day to support learning. There is broad-based participation in leadership and decision-making and there is a safe culture and climate in the school that cultivates a sense of community built on valuing, trusting, and supporting one another in their learning (Feeney, 2016, p. 471).

Context factors (restrictive) – found that there were too many tools/activities at times with no clear focus, lack of communication, and district accountability pressures to raise test scores (Feeney, 2016, p. 471).

The above research shows that a single workplace can have both expansive and restrictive factors.

Even if a workplace has expansive opportunities to learn, access to those affordances may be enabled or constrained. The above examples from Boyd, Smith, and Ilhan Beyaztas (2015) and Feeney (2016) show the factors that can enable or constrain learning, such as time, norms, division of labour, cultural factors, resources, routines, concepts, ideas, and theoretical knowledge. Ellstrom (2011) states that a balance in the workplace is required in order to maintain enabling opportunities to learn. Balance requires sufficient socialization to the workplace and learning routines with appropriately sequenced and scaffolded opportunities to

challenge existing practices or provoke innovative change. On the contrary, if a workplace does not provide opportunities for change, then it would be categorized as constraining. Another example would be if a new work employee set out to deliberately seek out instruction about a certain topic but meets resistance from a long-time employee that constrains the new employee's learning, despite the workplace having an expansive agenda to support learning.

There are two forms of support that have been identified as providing foundational support for new employees: learning plans (or trajectories) and mentors. Clearly communicated expectations and progression that an employee will follow in their work is an important aspect of beginning a new job. One such way to approach this is known as a learning trajectory (Eraut, 2004). Learning trajectories show the learning process, clearly outlining change occurring over time (Eraut, 2004)¹⁰. It is argued that learning trajectories allow for the messy learning that takes place in the workplace, noting that it is not a simple learning curve (Miller & Blackman, 2005). Instead, learning trajectories capture how learning occurs in different ways at variable times due to changes in the workplace, such as opportunities and challenges (Miller & Blackman, 2005, p. 3). By having such a framework in place, it allows for the individual and others to determine if certain benchmarks are achieved but also informs employees what is required for the position so that they can receive feedback on how to improve. Eraut and Hirsh (2007) note that often the job description has the learning trajectory built into it but that each trajectory will be different due to the diverse skills and knowledge that each employee brings to the position. The authors developed a comprehensive table about learning trajectories that divides learning at work into eight categories, each representing a learning trajectory. Learning may be taking place in all categories at the same time but typically one or two categories are dominant. For example, Miller

¹⁰ Eraut clearly differentiates learning trajectories from competencies. For details of that argument, see Eraut (2004).

and Blackman (2005) note how their research (in conjunction with Eraut) found the following dominant categories in the participant groups in their research:

- For nurses, task performance and role performance
- For accountants, task performance and teamwork
- For engineers, awareness and understanding of the problem and academic knowledge and skills in the use of relevant theory (p. 3)

The authors show how learning progressed at different times in the eight learning categories. Most important is to determine what is vital at different times as the above example shows what was most significant for those professionals during the first few months of work. The authors state that over a career, different trajectories are developing in different ways: explicitly progressing, implicitly progressing to be acknowledged at a later time, and stalled due to lack of use (Miller & Blackman, 2005, p. 3), depending on the work position and changes that occur over time. Eraut's (2004) learning trajectories provides a useful framework to target a set of trajectories imperative to the job to help guide learning and feedback to new employees.

Table 4. Learning trajectories (Eraut, 2004)

<p>Task Performance Speed and fluency Complexity of tasks and problems Range of skills required Communication with a wide range of people Collaborative work</p>	<p>Role Performance Prioritisation Range of responsibility Supporting other people's learning Leadership Accountability Supervisory role Delegation Handling ethical issues Coping with unexpected problems Crisis management Keeping up-to-date</p>
<p>Awareness and Understanding Other people: colleagues, customers, managers, etc.</p>	<p>Academic Knowledge and Skills Use of evidence and argument Accessing formal knowledge</p>

Contexts and situations One's own organization Problems and risks Priorities and strategic issues Value issues	Research-based practice Theoretical thinking Knowing what you might need to know Using knowledge resources (human, paper-based, electronic) Learning how to use relevant theory (in a range of practical situations)
Personal Development Self-evaluation Self-management Handling emotions Building and sustaining relationships Disposition to attend to other perspectives Disposition to consult and work with others Disposition to learn and improve one's practice Accessing relevant knowledge and expertise Ability to learn from experience	Decision Making and Problem Solving When to seek expert help Dealing with complexity Group decision-making Problem analysis Generating, formulating and evaluating options Managing the process within an appropriate timescale Decision-making under pressurised conditions
Teamwork Collaborative work Facilitating social relations Joint planning and problem solving Ability to engage in and promote mutual learning	Judgement Quality of performance, output and outcomes Priorities Value issues Levels of risk

Organizations use a variety of different mechanisms to guide employees' performance, such as competencies, learning plans (or professional growth plans, Fenwick, 2003), and more. What is significant here is that new employees have a clear indication of what is expected of them in their new role so that they can receive appropriate evaluation and feedback about their performance. Eraut and Hirsh (2007) found that feedback in the first few months of work was crucial and most effective when given on the spot. Miller and Blackman (2005) confirm that in order to retain employees, expectations about performance and feedback are essential.

To attain this feedback, employees rely on the interpersonal relationships that develop through mentorship and networks within the workplace. Due to personal limitations, Billett (2009) argues that ideally learning in the workplace should be guided at all times. Candy and

Matthews (1998) agree that mentorship needs to be continuous to help guide individuals through the complexities that emerge in the workplace. Put simply, interactions and mentorship from experienced practitioners is essential to workplace learning of employees (Fuller, 2006; Tynjala, 2008). However, Colley, Hodkinson, and Malcom (2003) make an important distinction by noting that when a mentor is more of a role model, it is clear that the mentoring model used is underpinned by a behaviourist, acquisition approach to learning. Therefore, mentoring in the workplace is seen as a social platform with the novice and expert both in a learning situation. Mentors can be the most influential person to whom new employees directly report, usually about allocation of work, appraisal, and support, and therefore are highly dependent on the mentor. If this person is not prepared to mentor or is too busy, the mentoring experience can be rendered useless (Eraut, 2011). Billett (2000) conducted research at four workplace sites with 17 mentors and 24 mentees over six months and found that questioning was the most effective strategy used by mentors, followed by analogies used to describe complex ideas.

Different forms of mentorship have been identified in the workplace (Eraut et al., 2004), such as:

1. Buddy-style mentoring – help at the beginning of work term.
2. Career mentoring – someone with whom to discuss career plans.
3. Shared mentoring – for those that need to reach chartered status.
4. Person-centred mentoring – a long-term relationship with one mentor.
5. De-centred mentoring – any person available to help and is open to questions (p. 21-2).

The above shows that mentoring comes in many forms and can be very specific due to the work or knowledge sought. Features of successful mentorship include time together, interest, trust, questioning, and feedback (Eraut et al., 2004). Cosnefroy and Buhot's (2013) year-long study of

teachers found that mentors were always ranked as a valued resource. For example, the authors found if new teachers were seeking knowledge about structuring the learning experience or classroom management, they primarily went to their assigned mentor.

Different issues can exist in mentorship arrangements. One potential outcome of a mentorship relationship is the perceived pressure to conform to and imitate mentors who may provide evaluation and impact career success (Coy, 1989). In Knight, Tait, and Yorke's (2006) research about how, what, where, when, and why academics learn at work, access and quantity of guidance became an issue. They found that when asked, academics stated they would have liked more guidance from a mentor and conversations with department colleagues. Another issue is that mentors are not typically trained and therefore tend to be directive rather than facilitative (Cosnefroy & Buhot, 2013). Other research has found that sometimes mentors or peers will restrict new employees' learning in order to protect their job, or because of other factors, such as affiliations, seniority (Billett, 2001b), or due to the fear of being displaced (Lavé & Wenger, 1991).

It has been recognized that a significant amount of mentoring comes from individuals who are not designated as mentors and happens on the spot when needed (Eraut, 2011), such as through peer mentoring (Eraut & Hirsh, 2007). Mentoring by peers has been found to be preferred by new employees (Cunningham & Hillier, 2013). Peer mentorship, sometimes referred to as 'informal mentoring' (Cunningham & Hillier, 2013) has been shown to work well for individuals new to a role, primarily due to having much in common (Cosnefroy & Buhot, 2013; Cunningham & Hillier, 2013).

Peers greatly influence TAs' development as a teacher, and despite the benefits of communicating with others in social networks, misinformation can be a problem (Gardner &

Jones, 2011; Nyquist & Sprague, 1998). Wise (2011) conducted a study to address TA communication issues and the concern of misinformation. The authors found that in order to ensure that miscommunication is not perpetuated, development of informed social networks is crucial for TAs as they learn to teach.

Communities of practice (CoPs) (Wenger, 1998), work groups, and project teams are all different forms of informed social networks potentially present in the workplace. Most widely cited is Wenger's (1998) research about CoPs. Three features of CoPs are: "mutual engagement in a set of activities or practice, a 'joint enterprise' and 'shared repertoire'" (Wenger, 1998, p. 73). As a group, a CoP provides a place for individuals to share, discuss, and solve problems together in an efficient way. Yet, CoPs are not always positive. Fuller et al. (2005) point out that CoPs can include disputes and conflict, which can be reproduced. Another form of network is represented by Engeström's (2008) metaphor of 'knotworking', where work groups or project teams come together, tie and untie knots, with knots representing modes of activity and collaborative work on problems or projects.

Pataria, Margaryan Falconer, and Littlejohn (2014) conducted a study about how professional networks shape what and how academics learn teaching practices. They used social network theory to analyze and interpret the interactions that academics had related to teaching to help see relational patterns and understand the influence of these patterns. These interactions for academics could be sharing of resources, advice, knowledge sharing, or sharing of materials. Two types of social network analysis, the egocentric or personal network and the sociocentric or the whole network, were used. The authors found that the strongest networks combined physical proximity, friendship, and similar occupation. Their research highlights how individuals favour face-to-face encounters. Similarly, Van Waes, Van den Bossche, Moolenaar, Stes, and Van

Petegem (2015) did a study over two years looking at how networks developed for faculty during an instructional development program. They found that the most important time to establish networks is at the beginning of the program. Participants were able to share their values, feelings, ideas, and strategies that they could then implement into their teaching. Another study brought attention to the role of students as a network that was highly informative to instructors' learning how to teach (Sadler, 2009).

The encounters and relationships that employees develop are significant for learning in the workplace. The social interactions that take place and influence learning are often close interpersonal relationships, the proximal kind, such as an assigned mentor or peers. Whether suggestions are provided by a close friend, a mentor, or others in the workplace, the employee will then appropriate, transform, or ignore those suggestions, affecting how their work is enacted.

This section has detailed the complexity of the learning process by identifying the many factors that impact learning in the workplace. Additionally, where and how learning occurs, whether learning is adaptive or developmental, intentional or unintentional, that is supported or not, all contribute to a new employee's learning process. Regardless of the complexity, new employees are learning in their new role but what they are learning is important.

Knowledge development.

To be effective, lead to change, and construct knowledge in the workplace, research in this field has identified reflection as important to support learning and make knowledge explicit. Brookfield (2010) confirms that "the chief form of learning in the workplace is reflective learning—learning to reflect in and on the problems they face in the field every day" (p. 215). Boud, Cressey, and Docherty (2005) developed the term *productive reflection* that "brings

changes in work practice to enhance productivity together with changes to enhance personal engagement and meaning in work” (p. 3) with the “aim to feed on itself to create a context that fosters learning, knowledge generation, and a congenial workplace” (p. 16). Brookfield (2010) clarifies the difference between reflection and critical reflection. Reflection helps make work practices better by uncovering assumptions, since it has been shown that individuals can hold contradictory assumptions (p. 216). Whereas, critical reflection looks at the power relationships related to a practice. Further, a distinction has been made about the temporal dimension of reflection. Some view reflection as backward-looking (Kolb, 1984), whereas others, see reflection as forward-looking (Boud, Cressey, and Docherty, 2005; Hodkinson & Hodkinson, 2005). Boud, Cressey, and Docherty (2005) see reflection as generative and leading to action.

In this research, reflection is considered as all of the above:

- (1) making sense of experience in relation to self, others, and contextual conditions; and
- (2) reimagining and/or planning future experience for personal and social benefit (Ryan, 2013, p. 145).

This definition illustrates how reflection can occur at different levels (Moon, 2006; Ryan, 2013). The first level described above is illustrated by a more descriptive form of reflection that may or may not lead to change but could lead to learning. The second level definitely leads to change and learning. Hatton and Smith (1995) developed the following levels of reflection based on research with teacher education students:

1. Descriptive writing – writing that is not considered to show evidence of reflection: it is a description with no discussion beyond description.
2. Descriptive reflection – is a description of events with alternative view-points accepted but the reflection is mostly from one perspective.

3. Dialogic reflection – this form of reflection demonstrates a “stepping back” from events and actions. There is a recognition that alternative explanations may exist for the same material. The reflection is more analytical.

4. Critical reflection – demonstrates an awareness that actions and events are located in and influenced by multiple historical and socio-political contexts. (p. 41)

Other models of reflection exist. For example, Bain, Ballantyne, Mills, and Lester (2002) provide a framework to encourage deeper levels of reflecting that they term the 5R’s reflection framework: report (describe), respond (feelings), relate (understanding), reason (explore and explain), and reconstruct (action plan).

Foundational to discussion of reflection in the workplace is Schön’s (1983) work that proposed an epistemology of professional practice where the reflective practitioner is at its centre; the one who knows-in-action and reflects-in-action. The practitioner feels, notices, and sees things associated with their actions that they reflect on and learn from (Hager, 2005). Schön (1983) argues that “workplace learning develops through reflection in the swamp of uncertain ambiguous, contradictory dilemmas of practice” (p. 6), situating this work deeply in practice. Reflection has the potential to transform experience into knowledge that can be generalized and used in new contexts. Eraut (2004) points out that reflection on practice is necessary or else employees will develop coping mechanisms that can be detrimental (p. 270). Others have argued that reflection can be a group activity (Raelin, 2007). Despite acknowledging the significance of individual reflection, the reflective process is enhanced when it occurs with other people, not just oneself (Boud, Cressey, and Docherty, 2005; Raelin, 2007). This is confirmed by research undertaken by McAlpine and Weston (2000) that investigated professors’ construction of teaching knowledge. The authors suggest that individual reflection on experience needs to be

guided throughout the learning process. It was determined that strictly having knowledge about teaching is not enough. Teaching knowledge has to be linked to experience and guided by professionals (McAlpine & Weston, 2000). Without guidance, reflection on experience will be informed by the beliefs, assumptions, and conceptions of teaching that the individual already holds and, accordingly, may not lead to teaching growth, development, and change. Guidance that leads to conceptual change can come from a mentor but it has been found to be most effective when teachers combine deep reflection on their own teaching with reflection on others' teaching, and then relate reflections to conceptual frameworks through discussion (Entwistle & Walker, 2000).

For TAs, research has shown that when given opportunities to reflect in professional development programming, it is beneficial to their development (Boman, 2008; Miller, Brickman, & Oliver, 2014; Wright, Bergom, & Brooks, 2011). The need to ensure that graduate students are taught how to reflect has been recognized (Wulff et al., 2004) and that reflection needs to be nurtured (Harrison, Lawson, & Wortley, 2005).

The importance of reflection in workplace learning is due to the nature of knowledge in the workplace. Candy and Matthews (1998) brought attention to how the perception of knowledge changed with the development of the field of workplace learning to include implicit and tacit, and not just explicit, knowledge. Eraut (2004) explains that explicit knowledge is codified and theoretical, and implicit knowledge is uncoded, tacit, personal, and practical. Codified knowledge is any knowledge that is written or documented in some form that others can access, whereas uncoded is acquired informally through participation (Eraut, 2004, p. 263). Uncoded, or tacit knowledge, is what individuals bring to a situation and allows them to think, interact, and perform (Eraut, 2004, p. 263). Tacit knowledge includes knowledge of people,

situations, attitudes, and emotions and often occurs due to incidental or spontaneous learning (Marsick & Watkins, 1990). Polanyi (1967) described tacit knowledge as “that which we know but cannot tell” (p. 118). Since tacit knowledge dominates learning in the workplace, it is important to understand how knowledge is developed in the workplace. Addressing tacit knowledge, Eraut (2000) asks, “why would we want to make tacit knowledge explicit,” and cites four good reasons:

- to improve the quality of a person’s or a team’s performance,
- to help communicate knowledge to another person,
- to keep one’s actions under critical control by linking aspects of performance with more and less desirable outcomes, and
- to construct artefacts that can assist decision-making or reasoning (Eraut, 2000, p. 134).

For these reasons, rendering employee tacit knowledge explicit is an important concern. In the workplace, tacit, implicit, and embodied knowledge dominate as learning occurs through experience (Hager, 2005). Though, Hager (2011) ponders whether some knowledge referred to as tacit is strictly knowledge that has not yet been investigated. Tacit knowledge, or ‘knowing how’ (Raelin, 2007) is “high-level awareness of ‘how to act’ that people develop over time and that they employ to solve practical programs at work and elsewhere” (Lejeune, 2011, p. 102).

This is what Schön (1983) calls ‘knowing-in-action’. However, issues can arise if the tacit knowledge is not suitable for the situation or when individuals bring wrong tacit knowledge to a new workplace. Eraut (2000) points out that tacit knowledge is very powerful. He gives the example of how when faced with decisions in the classroom, teachers default to what they have experienced even though they know that is not the best way to react because of their explicit learning to do the opposite.

Summary.

To develop knowledge about teaching, a deep reflective practice is necessary. Reflecting in-, on-, and for-action are necessary conditions of improving one's teaching practice. The specific knowledge TAs are developing in their work has garnered few studies. One study that took place in several social science departments, conducted by Tulane and Beckert (2011), found that a lot of TA work was spent on clerical duties, which does not help the TA build knowledge about teaching and student learning.

The next chapter describes the research methodology used to investigate what TAs are doing as they learn how to teach. Using ethnographic methodology in the domain of work and in the workplace has been done in several studies (Smith, 2001). Smith (2001) undertook an overview of these studies and shows how dynamic the workplace is and that the only way to understand this complexity is to undertake a deep ethnographic study of the occupations by listening to the voices and silences, understanding the processes of work, and accounting for context. The focus of research in this domain spanned labour processes, organizations, occupations, and industries (Smith, 2001). Themes that occur in this literature are broad, but Smith (2001) concentrates on three: "how routine jobs are complex; how complex jobs are routine; and how power, control, and inequality are sustained" (p. 220).

Within educational settings, Spindler (2002), was one of the first to engage in educational research at a local school in his home country of the United States. He recounts how at the beginning of his research he really did not know what to record or think: "I wondered what I should observe and take notes on that first day and continued to wonder for the next few weeks. It was so boring!" (Spindler, 2002, p. 14). After some time observing a fifth-grade class, Spindler began to take notice of significant observations. For example, Spindler noticed that students were grouped based on their reading ability, which then lead him to notice that these two groupings

had other characteristics based on socio-economic status in the community. These first observations led to more and Spindler was hooked. This began Spindler's long career in educational research with considerable contributions to educational anthropology.

In post-secondary education, the Scholarship of Learning and Teaching (SoTL) emerged relatively recently. Boyer's (1990) influential book *Scholarship Reconsidered: Priorities of the Professoriate* stated that a professor's job includes the scholarship of teaching, which brought a focus on teaching in higher education as a legitimate scholarly pursuit. Boyer encouraged professors to use research methods from their respective disciplines to conduct research in the post-secondary classroom, which has resulted in a mixed-methods approach. Similarly, research conducted about TA work in post-secondary institutions has relied on a variety of research approaches and methods, spanning both quantitative and qualitative (for examples see, Austin, 2002; Bellows, 2008; Boman, 2008; Garland, 1983; Jones, 1993; Marincovich et al., 1998; Nyquist, Manning, Wulff, Austin, Sprague, Fraser, Calcagno, & Woodford 1999; Schönwetter et al., 2004; Weber, Gabbert, Kropp, & Pynes, 2007).

Chapter 3 Research Methodology

The purpose of this research is to understand and interpret the graduate student's entry into TA work to enhance the practice of being a TA and learning how to teach in a university context. As already stated, research has shown that if the learning process is not understood, too many factors can undermine the process (Cosnefroy & Buhot, 2013; Eraut, 2007). Additionally, Amundsen and Wilson (2012) point out that “we know more about how to design educational development initiatives to improve individual teaching practice but less about how this learning is actualized and embedded in the academic workplace” (p. 111).

As a reminder, to address the research question, “*What are TAs doing to learn how to teach?*” this research explores:

1. TAs' characteristics related to learning, such as their conceptions about teaching and learning that they bring to their new teaching role;
2. The learning process that TAs go through, as evident in their learning and teaching actions, and the context and learning factors they identify that shape their learning; and
3. TAs knowledge development about teaching, their own learning, and student learning.

In order to explore these aspects related to the research question, this chapter provides a detailed description about the ethnographic methodology used in this study. I begin with a rationale for an interpretive paradigm and qualitative approach to the collection of data and analysis that includes details about and justification of the research methods used. Subsequently, recruitment of participants, location details, sequencing of data collection, ethical considerations, and the approach to data analysis are explained.

Ethnographic Methodology

Guba and Lincoln (1994) define a research paradigm as “the basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways” (p. 105). Since all qualitative research is interpretive, Denzin and Lincoln (2005) highlight that it is therefore guided by the researcher’s beliefs and feelings about how the world should be understood and studied.

Researcher’s beliefs and feelings inform the qualitative research process through four philosophical assumptions: ontological, epistemological, axiological, and methodological (Creswell, 2013). Ontology looks at the nature of reality and assumes that multiple views—research participants and researchers—will be represented in the research (Creswell, 2013). Epistemology is about what counts as knowledge and how these claims are justified, which includes the subjective experiences of participants, the insider perspective of the researcher, and is achieved by working closely with participants in the place under study (Creswell, 2013). The axiological assumption is understanding that the researcher’s values are important to identify the biases that he or she brings to the research process and interpretation (Creswell, 2013). Lastly, methodology, the process of research, is inductive and uses an emerging design deriving from the context of study that allows for revision of questions as the research progresses (Creswell, 2013).

These philosophical assumptions are dependent on the interpretive framework taken by the researcher. My worldview aligns with the qualitative, interpretive research approach of the social constructivist paradigm perspective. Guba and Lincoln (2005) state that constructivism has a relativist ontology (relativism), a transactional and subjectivist epistemology, and a hermeneutic, dialectical methodology (p. 193). Social constructivists (sometimes referred to as interpretivism) develop subjective meanings about a topic, looking for the complexity in the

different views (Creswell, 2013). The nature of reality is constructed based on the meanings and understandings attributed to experiences shared by groups of people and users of this paradigm are oriented to the production of reconstructed understandings of the social world under study. Constructivists are concerned with the meaning-making that groups and individuals make about phenomena under study because those meaning-making activities shape what people decide to do or not to do (Guba & Lincoln, 2005). The foundation of this dissertation is based on the social-constructivist paradigm that acknowledges that humans develop different realities of experience. Accordingly, the participants and researcher co-constructed knowledge about TAs learning how to teach.

Taking a social-constructivist perspective informs the four philosophical assumptions in the following ways:

- The ontological assumption is that multiple realities exist, and the many views of the world are constructed socially and through experience;
- Epistemologically, knowledge is seen as being constructed by humans and that the researcher and participant co-construct knowledge throughout the research process, which is continually (re)negotiated and (re)interpreted through conversation;
- The axiological assumption is that individual values are honoured and negotiated between individuals;
- And lastly, the methodological assumption is that research is naturalistic and inductive, and emergent methods prevail, such as observation, interviewing, and analysis of texts (Creswell, 2013; Hatch, 2002).

These assumptions were supported throughout the research process by the methods used and data analysis, which sought understanding and representation of participants' experiences.

Since learning in the workplace has been acknowledged to rely heavily on informal learning situations and tacit knowledge (Eraut, 2000, 2004; Evans, Kersh, & Sakamoto, 2004), an ethnographic methodology with appropriate methods enabled a holistic study of TAs learning to teach. When undertaking such a study, the main concern is the complex meaning systems of actions and events to the people who are part of the study (Spradley, 1980). In order to understand complex meaning systems, ethnographic methodology relies on a cyclical process and is never linear. It involves asking questions, collecting data, making a record, analyzing data, and then repeating the process over again (Spradley, 1980).

Within the workplace, knowledge creation takes place during the learning process and is not just as an outcome (Hager, 2005; Lavé & Wenger, 1991). What is important is the continuous process of learning. Starting from this epistemological view that knowledge is continually being constructed and made meaningful through social and personal experiences, I investigated the everyday lived experiences of TAs learning how to teach by seeking an understanding of their beliefs, motivations, and forms of practice in their work. My research was guided by the world-view that knowledge is being constantly constructed and changing based on lived experience, informed by cultural and historical associations, embedded and enmeshed within organizational structures with many different views of the work TAs are tasked to perform. This focus on learners' subjective experiences in social settings within a larger context combined with the researcher's observations of what learners do (their actions), aligns with the interpretive and qualitative paradigm that frames this study.

With these perspectives in mind, the research methods discussed below identify the processes that inform and encourage or discourage TAs' learning in the workplace as they engage in their teaching work. This approach seeks to understand, interpret, describe, and find

meaning in both the epistemological (how TAs know and construct knowledge about teaching), ontological (their beliefs and values about learning and teaching and who they want to be as a teacher), and how TAs enact their work (what TAs do in the role) by investigating the mental and embodied representations of TAs' teaching experiences.

Little is known about epistemological beliefs (or personal epistemologies) in workplace learning or how these beliefs influence learning at work (Bauer, Festner, Gruber, Harteis, & Heid, 2004). "Epistemological beliefs are individuals' fundamental assumptions about knowledge, its nature, and appropriate ways to create it" (Harteis, Gruber, & Lehner, 2006, p. 123). This is an important element of the research because these beliefs influence how individuals seek opportunities to learn, what to learn, and what not to learn. Research has shown that epistemological beliefs are not only evident in formal learning situations but also in informal workplace learning situations (Bauer et al., 2004). Epistemological beliefs are also a vital part of subjectivity (individuals' views and assumptions that represent their dispositions) (Harteis, Gruber, & Lehner, 2006, p. 125). For example, TAs typically begin their work with the assumption that students all learn the same way they learn. It comes as a surprise to them that this is not the case and that different learning needs can affect the approach someone takes to learning. This new knowledge is enacted upon in different ways, depending on the TAs' subjectivity, knowledge base, and approach to recontextualize this new knowledge (their epistemological beliefs).

Personal epistemologies relate to Argyris and Schön's (1974) espoused theories and theories-in-use. Espoused theories are what people think or say they will do in a certain situation (drawing on their personal epistemology and ontology), whereas theories-in-use are what people

actually do in those situations. Due to the tension caused between espoused theories and theories-in-use, investigation of TAs' learning includes the following:

- learning biographies of the participants;
- learning opportunities, activities, and work processes (such as their teaching practice) that TAs went through; and
- knowledge recontextualization, integration, and transfer TAs utilized in the classroom as their teaching developed.

Throughout, TAs were in the process of realizing their identity and who they were becoming as a teacher (Dall'Alba & Sandberg, 2010).

An ethnographic methodology is most suited to attain a holistic understanding of how TAs are learning to teach, and as Fenwick (2008) states, "to illuminate the learning that unfolds in everyday work" (p. 25). Despite my doctoral degree being interdisciplinary, my disciplinary background is anthropology. In my position at UVic, I am constantly reminded of the perspective that I bring to my work. This perspective is not necessarily all about culture, the domain most associated with anthropology, but is more about the key concepts that the anthropological discipline provides: the importance of relativism, taking a holistic approach, significance of context, recognizing agency, and the ability to engage with varying perspectives about the world. The research methodology, research methods, and data analysis chosen all adhere to these tenets. In the following section, I detail the location, participants, data collection and research methods, ethical considerations, and finally how data analysis was conducted.

Location and Participants

My research takes the university setting as the workplace and site of research. UVic is a mid-sized research university (over 20,000 students, undergraduate and graduate) situated on

Vancouver Island, British Columbia, Canada. The TA population at UVic numbers about 700 for each of the two main terms—fall and winter—and spans across 42 distinct disciplines with approximately 50% of the TA population being international graduate students. Most of the departments at UVic employ graduate students (a few hire undergraduate students) for TA positions. Due to union rules, most begin their TA role in the first term of their Master's degree. The TA position is deemed as funding, a secure source of income, and for some graduate students they are obliged to take a TA position for that reason. For others, it is dependent on their individual funding circumstances and if graduate students have sufficient scholarships, they may not be eligible for a TA position. For most students, TA positions offer additional funding and opportunities to learn about teaching and learning in higher education. Even though TAs are graduate students pursuing a degree, the work assigned to TAs is not part of their degree. It is not an internship position. Rather, it is a position that is recognized as a job with all the responsibilities associated with a work assignment. This distinction is important because it highlights that a TA position is a job and learning about the role is taking place in the workplace.

The target population for this study are graduate students from any discipline who did not have teaching experience or instruction, either as a TA or in any other teaching position in higher education, or in K to 12, in Canada or another country. This population was most appropriate to identify how TAs first learn to teach in higher education. Human research ethics approval was attained prior to recruitment of participants (see Appendix B for certificate of approval).

Participants were recruited through the following ways:

1. Email to all graduate secretaries so that they could forward to potential participants (see Appendix C);

2. Advertising through distribution of information flyers posted in all departments at UVic (see Appendix E);
3. In-person at department graduate and TA orientations; and
4. Word of mouth.

The process for recruitment was as follows:

1. Sent an email to all graduate secretaries so that they could forward to potential participants.
2. Posted recruitment flyers in departments with permission from department office for posting.
3. At fall 2014 graduate orientations in departments, I read the in-person script (Appendix D) and handed out the recruitment flyer (Appendix E).
4. When potential participants contacted me, I first checked that they had no prior teaching experience (whether in higher education or the K to 12 education system, either as a TA or other instructional position, in Canada or another country), and ensured that they were teaching a lab, tutorial, or discussion-based class during the Fall term of 2014 and/or Winter term of 2015.
5. If the potential participant fit those requirements, then I sought permission from the potential participant's department graduate advisor and course supervisor.
6. Once approval was received from the department, I informed the participant and began preparing for the research.

I did not have any prior relationship with participants, nor was I in a position of power. In my role at UVic, I am not responsible for hiring or firing TAs or influencing whether a TA is assigned a position in any department on campus. I made sure that during recruitment it was

made clear that I had no influence over TAs and their TA assignments. At the end of recruitment, I had nine participants from the faculties of social sciences, humanities, and education. This sample size gave a good representation of TAs learning to teach for an in-depth qualitative study. All participants were in the first year of their degree with eight in Masters programs and one beginning a PhD. Six were female and three male; two (one male and one female) were international students with one having English as an additional language. I did not ask participants about any personal factors, except during interviews if related to the study. Participants had to be teaching a lab, tutorial, or discussion-based class during the fall term of 2014 and/or winter term of 2015. If participants joined the research in the fall term, they were asked if they wanted to continue during the winter term to attain a broader engagement with their learning process. Two participants extended their participation for a second term. Following is a short cameo of each participant, without any identifying information to ensure anonymity, focused on relevant previous experience and professional development activities prior to taking on the TA role, all of which occurred at UVic. All names used in this document are gender neutral pseudonyms of North American/European origin.

Alex was from the Humanities and had never been taught by TAs as an undergraduate. Alex attended the 2014 Fall TA Conference.

Sam was from the Social Sciences, with previous experience as a tutor¹¹, had one undergraduate course taught by a TA, and co-op work experience that related to one of the courses. Sam went to the 2014 Fall TA Conference and enrolled in a program about learning and teaching in higher education.

¹¹ For this research, one-on-one tutoring did not disqualify a participant, since it only involved interacting with one individual and not in a classroom.

Blake was from the Social Sciences, had several undergraduate courses taught by TAs, and work experience with responsibility for training people. Blake attended the 2014 Fall TA Conference, TAC workshops in the department, and enrolled in a program about learning and teaching in higher education.

Chris was from the Humanities, had several undergraduate courses taught by TAs, and held a leadership position in sports. Chris attended the 2014 Fall TA Conference.

Charlie was from the Social Sciences, had never been taught by TAs as an undergraduate, and held a leadership role through sports. Charlie attended the 2014 Fall TA Conference.

Pat was from the Social Sciences, had never been taught by TAs as an undergraduate, held a leadership position in high school, and had work experience training others. Pat did not attend any professional development workshops or programs.

Quinn was from Education, had several undergraduate courses taught by TAs, and did not attend any professional development workshops or programs.

Reed was from Education, had never been taught by TAs as an undergraduate, but did train others in a sports program. Reed attended the 2014 Fall TA Conference.

Lou was from the Social Sciences, had several undergraduate courses taught by TAs, and did not attend any professional development workshops or programs.

These cameo snapshots show that the participants have similar backgrounds. Most had been taught by TAs as part of undergraduate courses with three not having any TAs as an undergraduate student. Participants' engagement in professional development spans from none to two taking a program about teaching and learning in higher education. In spite of this difference in their engagement in professional development, all were in the first term of this engagement, meaning they had very little formal instruction prior to stepping into the classroom (except for

attending a few sessions at the Fall TA Conference). Besides the two individuals who enrolled in the program about learning and teaching in higher education, other participants had opportunities to attend ongoing professional development sessions throughout the fall term offered by the teaching assistant consultant (TAC) in their department, and/or at UVic's centralized unit, the Division of Learning and Teaching Support and Innovation. Yet, none did.

Data Collection and Research Methods

I employed a qualitative multi-methods triangulation approach that included semi-structured interviews, observation of TAs' teaching, TAs' reflection journals, and my field notes. TAs' teaching is what I used to interrogate and inquire about their learning process. By using TAs' teaching practices as the point of entry, I was able to tap into the process TAs were going through as they learned how to teach. The following table summarizes the data collection process.

Table 5. *Data collection process*

Initial meeting	Signing of consent forms; first interview audio-recorded
First observation	Video-recording class and taking field notes
Post-observation interview	Audio-recorded
Second observation	Video-recording class and taking field notes
Post-observation interview	Audio-recorded
Exit interview	Audio-recorded

All interviews were audio-recorded. The sequence of data collection took place as follows:

1. Introductory meeting was set up in my office on campus, which began with allowing time for the participant to read and sign the consent form and to address any concerns or questions the participant had before we began. To minimize any discomfort or nervousness, I clearly informed TAs that the research was not about judging their

ideas or teaching but was about working together to identify what they were doing as they were learning how to teach. Once ready, I began the audio recording device and we began the semi-structured interview. Interview questions were developed from the workplace learning literature that related to the three categories of focus: learners' characteristics, learning process, and context and learning factors in the workplace (see Appendix F for guiding questions). To ensure a holistic view of TAs' learning to teach, I included questions that looked at all aspects of their learning: subjective, social, structural, and action. Despite the focus of this research being on what TAs are doing to learn, it was important to get a broad understanding of all factors that may have informed what they were doing. I began with questions related to the personal realm by asking about teaching and learning and their learning biographies. The discussion included finding out about their beliefs and values about teaching and learning (conceptions), personal expressions about what constituted good teaching (prior knowledge), and how committed they were to teaching or an academic career (qualifications and motivation). After discussion of the philosophical and personal foundations underlying teaching and learning, we established the approach taken to learning how to teach (such as professional development or transfer of knowledge from other work). Next, we discussed contextual factors that asked about the class they were teaching, such as number of students, what support materials or teaching plan was provided by the course supervisor or department (affordances), and other variables that could or did impact the learning environment that the TA was situated in that supported undergraduates and TAs' learning in the workplace (affordances). When all preliminary contextual and learning factors were determined, I closed with

discussion about the next phase of the research, which was my conducting a teaching observation, providing an opportunity for the TA to ask questions about next steps. Before leaving, I provided each TA with a paper journal for ongoing recording of reflections. If the individual preferred digital recording, that was encouraged as well.

Interviewing is a method that is often used to access participants' views, understandings, and experiences to provide information about the social reality being researched (Mason, 2002). For that reason, during the interview, I let the participants' narrative dominate the interview to ensure that their contributions were the focus and not my interpretation. To facilitate, I took a deep listening approach¹² that allowed the participant to explain thoughts and ideas without interruption or other verbal or non-verbal cues that indicate agreement or judgement. When appropriate, the process was dialogic and informal that allowed us to explore the material and have a conversation. As participants relayed their narrative, I asked for clarification when necessary, interspersed with semi-structured questions when appropriate, and probing questions to seek out participants' personal voice.

It is important to encourage discussion of the complete work process because the connection between work and learning is not always apparent. Eraut (2007) found that in his research about nurses', accountants', and engineers' learning process at work, participants could not differentiate between formal and informal aspects of learning at work. They would default to only recognizing learning within formal instances (like attending a training session). To get the whole picture of learning processes occurring in the workplace, Eraut had participants name working processes, learning activities, and learning processes. The learning activities were embedded in the two processes. In my questioning, I used this same approach to ensure that all

¹² A deep listening approach is focused on the speaker as opposed to the listener (Little & Palmer, 2012).

aspects of the learning/working situation were discussed, while at the same time encouraging reflection.

Reflection is the hallmark of good pedagogical practice. To develop one's teaching practice, reflection is a means by which to question what one does (Brookfield, 2010; Dewey, 1938; Schön, 1987). Despite reflection being linked to experience, it has been noted that the depth of experience does not determine the ability to deeply reflect (Ferry & Ross-Gordon, 1998). Therefore, TAs, as new teachers, can reflect on their actions. Becoming a reflective educator is essential to improve one's teaching practice in higher education. Through the questions and interviews, participants naturally engaged in reflecting about their experience, with probing questions requiring participants to reflect deeper about their statements and decisions.

2. At the arranged time, I went into the TA's class to do an observation. I verbally informed students in the TA's class that the video would be focused on the TA and not students and was for the TA's and researcher's use only, would not be published, and would be deleted as soon as the research was complete. I also informed students that I would be taking notes (see Appendix G for the transcript).

Two distinct but related activities were used during each of the classroom sessions: observation and video-recording. Observation is a key methodology that educational developers¹³ use for professional development of instructors in higher education. Observation allows getting really close to people and reporting on what people do and how they are in the world. Observation of teaching in higher education is a well-established practice but can be used for different purposes, such as teaching evaluations, learning from peers, or for teaching improvement (Berry &

¹³ Educational developers is the nomenclature used to describe individuals who work in learning and teaching units in Canada.

Korpan, 2009). When using observation for teaching improvement, the purpose is to work with instructors to provide feedback about aspects of their teaching.

In workplace learning research, observation is a key method of gathering data in the field. Eraut (2007) undertook research about different professional occupations (engineers, accountants, and nurses) asking questions about what was being learned and how the factors involved impacted their learning. Realizing that interviewing people would not be sufficient because of the tacit dimension of knowing and the significance of implicit learning in the workplace, Eraut found that observation was essential to get a complete understanding of the complex learning taking place. Eraut (2004) states, “practice can only be thoroughly investigated by the co-construction of accounts of periods or episodes by observer(s) and performer(s)” (p. 259).

Co-construction of what was occurring as TAs taught was made possible through observation and during interviews so that TAs’ thinking and doing could be brought together. It takes practice to be an excellent observer. It is not just a perspective that you decide to take (Bernard, 2002). As the researcher/observer, I drew on the years of experience I gained through conducting teaching observations of instructors (both faculty and graduate students), as I video-recorded and used these recordings for analysis. I was a passive participant (DeWalt & DeWalt, 2011). I observed activities in the research setting but did not participate in those activities. Despite my presence with a camera, all research participants noted that there was no apparent effect on students in the classroom. A few TAs did note that at first, they were aware of my presence and the camera but that quickly disappeared once they began teaching. As I observed their teaching, I used a combination of description and focus. It was descriptive by noting everything occurring in the situation but focused on critical incidents that occurred within the

classroom that were potential catalysts for TAs' learning process. This is what Merriam (1998) terms shifting from a 'wide' to a 'narrow' perspective.

The field notes gathered while observing became the repository of my observations and reflections about what I saw TAs experience. Through observation I recorded critical incidents as they happened that were then used for discussion during interviews. Importantly, I noted the conditions of the context in which the critical incident occurred, and other learning/work processes observed. This is important to ensure that all is taken into consideration when reflecting on the teaching event. Typical elements recorded during my observations were:

- The physical setting – what was the classroom like? How was it arranged? How did the TA organize the room, lighting, chairs, desks, and students or not? What other features of the space influenced the classroom experience?
- The students – how many students were in the classroom? What could be generalized about the student population?
- Activities and interactions – how did the TA begin class and what did students do at the beginning? What was the outline of the lesson? What were the activities and how did students interact with those activities? How did communication flow? Were there dominant student contributors? Silences?
- Teaching role – how did the TA organize the learning activities and interact with students?
- Other factors – were there any unplanned activities? Nonverbal communication? What did not happen?

The above questions contributed to the data about the workplace learning conditions of the TA. Eraut (2007) found that observation of the learning process of an individual's work performance

took care of issues surrounding self-reporting, such as the tendency to paint an ideal picture of what happened. Observation and video-recording allowed for a more complex and holistic picture of what occurred in the classroom and provided clues to identify implicit learning taking place.

Since teaching is an embodied activity, video-recording helped reveal the interplay between the TA's gestures, glances, positioning, verbal utterances, and teaching objects that highlights the intersubjective, socially-situated nature of the classroom. The video-recordings were available for viewing if required to clarify a situation during our post-observation interview. The video-recordings became an integral part of the data set that I used during my analysis.

3. The post-observation interview took place shortly after each of the teaching observations. The semi-structured questions asked during the post-observation interview centred on a reflective process that asked about how and why TAs chose to do what they did, the source of their decision-making, and their thoughts and beliefs surrounding that decision. If necessary, we viewed the video together to refresh the TA's memory of what took place (this actually only occurred once). The interview covered all elements that occurred during the teaching episode. Besides the guiding questions noted in Appendix F, other types of questions asked were: What information did you use in making this decision? Why? What other courses of action were you considering or were available to you? What made you decide this was the right decision? What makes this moment stand out to you? What were you doing or trying to do at this point? What were you noticing or thinking that informed your actions? Were there any other thoughts going through your mind? After the first

observation, we would plan for the next observation and ask the TA about the specifics about that class.

Sometimes, critical incidents¹⁴ that occurred in the classroom dominated the post-observation discussion. While going through the reflective process, I was cognizant of the three related components: 1) experiences, 2) reflective processes, and 3) outcomes (Boud, Keogh, & Walker, 1985).

1) Boud, Keogh, and Walker (1985) identify experiences as the combination of ideas, feelings, and the actions that an individual takes in any situation. Experiences encompasses what an individual brings to a new learning situation.

2) During an experience in the classroom, the participant has ideas and feelings about the event. Therefore, when engaging in the reflective process, I attended to the three stages associated with experience, of a) returning to experience, b) attending to feelings, and c) re-evaluating experience (Boud et al., 1985).

a) In the first stage of returning to the experience, I asked participants to begin with a description of what occurred, including their feelings. Boud et al. (1985) explain that multiple layers can be part of this descriptive stage that encompass the structural, social, and personal dimensions of the situation.

b) In the next stage, attending to feelings, participants expressed both positive and negative feelings about the incident. Emotions play an important role in the learning process (Schutz & Pekrun, 2007) and particularly for TAs as they socialize to their new identity as a teacher in higher education (Austin, 2002).

When drawing on the critical incidents that I recorded during observation, I was

¹⁴ Critical incidents refer to something that takes place in the classroom that the TA did not anticipate.

able to address what Kinsella (2007) calls the embodied reflection dimension.

Teaching is embodied, relies on tacit knowledge, and is influenced by the affective domain (Boud et al., 1985). The affective aspects of learning need to be explored because it directly links to epistemological beliefs. Attending to the affective domain helped participants constructively evaluate the learning experience and articulate tacit knowledge. During the post-observation interview, I paid close attention to when participants were taking their positive feelings and putting them to use to inform future teaching, and to when their negative feelings were blocking the learning process (Boud et al., 1985).

c) The last stage was re-evaluating the experience. It is in this important stage where change and transformation take place with construction of new knowledge and reworking of existing knowledge. At this point, I would encourage TAs to think about what they would do differently and to discuss what they learned from the situation, the outcomes of reflecting. It was at this point that TAs clearly demonstrated what knowledge was developed from the critical incident.

3) The last component is outcomes and how the reflective process will inform future actions, ideas, and feelings. Boud et al. (1985) state that outcomes may include: new perspectives on experience, change in behaviour, readiness for application, and commitment to action (p. 36). Through the process of reflection on critical incidents, TAs inevitably had different outcomes, dependent on their subjective approach to the situation. One participant requested suggestions about how to approach the critical incident in the future. At this point, I went beyond my probing method and offered possible ways that this particular situation could be approached in the future. The

participant did not have the opportunity to use these suggestions while participating in this research but informed me of their use in future teaching.

4. Steps 2 and 3 were repeated for the second observation. During the second post-observation interview, the TA and I built on our previous conversations.
5. I conducted an exit interview that provoked participants to think about their learning process so that they could articulate what they had learned about teaching and what knowledge they felt they gained. This last interview was a rich discussion about the complete learning process they went through where TAs could sometimes clearly articulate what they learned but not always. At this time, I asked participants to submit their learning journals.

Through conversations early in the interview process, it became apparent that some participants were not using the journal to record their thoughts. In the end, three of the nine participants did journal. Most participants noted that what they said in the interviews was the same as what they wrote. It became obvious in the analysis stage that the content of the journals was no different than content in the interviews. Despite journal content being part of the data set, no new data came from journaling. Field notes that I took during teaching observations became part of the data for analysis and did not take precedence over other data.

Due to the significant professional development that participants gained through involvement in the research, on the suggestion of the human research ethics committee, I provided participants with a letter acknowledging the time and effort that they dedicated to the research project.

Ethical Considerations

The need to be reflexive in research is identified as crucial. I am aware that I bring to this research a belief in strong support for professional development for TAs. My work as the Manager of Professional Development Programs at UVic is entrenched in providing this support and I believe that there is a great need to ensure that TAs are supported in their teaching before and during their work appointments. I believe that it is the ethical responsibility of the university, not only to support all instructors but also to ensure students have quality teachers. Even though I work closely with TAs from different departments, I am not ‘in the field’. I am not actively there with TAs observing the work they are tasked with or engaging with them to understand how they figure out how to do their work. All of the participants were aware of my work position but in my work role I do not typically interact one-on-one with new TAs. My work requires me to develop, manage, research, and evaluate programming for graduate students but I am rarely in an instructor position with new TAs. Therefore, my work role did not hinder or obstruct this research. On the contrary, I contend that my work role made this research more dependable, credible, and transferable (Denzin & Lincoln, 2005). I was able to bring my breadth of knowledge about the field of TAs learning how to teach to this research.

I also bring a national perspective to my breadth of experience. As already discussed, my volunteer work with TAGSA included the development of national resources, conferences, and other initiatives. In particular, I initiated a project that involved a three-year national process to identify competencies for beginning TAs. Through continual consultation with educational developers across Canada, the executive committee, of which I was chair, worked to develop a framework that new TAs, instructors, and staff at higher education institutions could use to inform TA teaching work, development, and programming (see Appendix H for the framework) (Korpan, Le-May Sheffield, & Verwoord, 2015). Another example, *Preparing teaching*

assistants (TAs): A national survey of Canadian post-secondary institutions' TA orientations, investigated how TAs were being oriented to their work (Korpan, 2014a). As is evident by these examples, my involvement in TAGSA provided a broad and fulsome understanding of the issues affecting TAs on a national scale, which I brought to this research.

At the individual level, complex relationships exist between the researcher and participants and therefore, it is necessary to understand how participants were involved with this research. Lee (2001) draws attention to the different ways that the researched are viewed in research:

1. Subjects – are like slides under a microscope or lab animals in an experiment. They are objects of study, unable to influence the direction of research.
2. Informants – who willingly contribute information and exert some influence on the direction of the study by offering or denying access to their knowledge and experience.
3. Participants – are engaged in research by gathering or analyzing data, or both. They are offered opportunities, for example, to review and edit transcripts of taped interviews or conversations, and to examine and respond to drafts. Participants may hold the researcher accountable to present their voices and perspectives.
4. Collaborators – are co-researchers. Their relationship is an open, equal collaboration among colleagues that protects both from exploitation. The research design is dialogic, including shared responsibility for data collection, analysis, and reporting (p. 69-70).

My research took an informant/partial participant view of the individuals who decided to participate in this research. I acknowledge that some of the data collected is solely dependent upon what participants decided to offer during our interview, especially the first one. Throughout the iterative process during subsequent interviews, participants were involved in dialogue and I ensured that their voice and perspectives were represented in the ways they wanted. During interviews, I always asked participants to clarify their view about thoughts and opinions they were stating to make sure their ideas were clearly stated. However, due to graduate students moving away or having active schedules, I was not able to engage participants in editing transcripts or examining drafts.

Informed Consent, Anonymity, and Confidentiality

I received Human Research Ethics approval in September 2014. After seeking approval from participants' course supervisor and departmental graduate advisor, each participant was asked to complete a participant consent form (see Appendix I). The consent form noted that participation was voluntary, that the participant could withdraw at any time, and that anonymity and confidentiality were protected. All measures were put in place to protect participants' confidentiality, such as using pseudonyms, and not identifying the department, subject matter, or course that the TA was teaching. Since approval was required from the course supervisor and graduate advisor of each participant, and that this research has a small sample size, there were limits to my ability to protect the confidentiality of the participants. As well, because I notified students in the TA's class of the TA's participation in the research, this additionally limited my ability to protect the confidentiality of participants.

Only anonymized data are stored indefinitely, and all raw data has been destroyed.

Previously, all data were stored electronically and in locked cabinets at the Division of Learning

and Teaching Support and Innovation. Video recordings are on password protected computer files and will be deleted upon completion of my doctoral degree. Consent forms, field notes, and other paper documentation are on password protected computer files and in locked cabinets. As the principal investigator, I am the only one who has access to these files.

Data Analysis and Interpretation

Using thematic analysis, the data set was analysed through a socio-cultural constructivist interpretive lens that sought patterns of meanings or themes identified as important and relating to the goal of this research and workplace learning. Workplace learning theory is the broad guiding theoretical framework used in this research that specifically focusses on learner's characteristics, the learning process, and knowledge development, which guides the research design, coding, thematic analysis, and interpretation of findings. However, to ensure that participants' contributions to the research is evident, I approached the analysis open to information or issues that came from the data. This was an important element since a workplace learning theoretical lens had not been applied to TAs' learning how to teach. The analysis of data was an iterative process that developed through the repeated engagement with the data, which included viewing the video documentation of the teaching sessions to analyze TA actions or performance in the classroom. All data analysis was done by me without the aid of any analytical software programs. The data set consists of the following:

- transcripts from all interviews of the nine participants transcribed verbatim by me and checked against the tapes for accuracy;
- my field notes from observing TAs' teaching in the classroom;
- my notes (about video-recordings and when coding);
- video-recordings;

- participants' reflective notes; and
- video-recordings of participants' teaching.

The following table details the video and audio recordings for each participant.

Table 6. Video and audio recordings.

Participant	Date	Length of video recording (min.)	Length of audio recording (min.)
Alex	October 23, 2014	1:04:30	
	October 30, 2014	1:12:19	
	November 5, 2014		1:11:33
Sam	October 8, 2014	1:12:33	
	November 4, 2014		18:11
	December 16, 2014		13:35
	February 24, 2015	1:40:11	
	March 10, 2015	36.31	
	May 25, 2015		29:40
Blake	January 6, 2015		29:00
	February 26, 2015	51:13	
	March 9, 2015	39:39	
	June 11, 2015		35:10
Chris	January 13, 2015		47.26
	January 30, 2015	47:46	
	March 6, 2015	1:33:38	
	June 1, 2015		41:04
Charlie	January 21, 2015	1:47:08	
	February 5, 2015		56.51
	March 4, 2015	1:06:56	
	May 12, 2015		1:21:20
Pat	October 16, 2014	55:20	
	October 27, 2014		26:34
	November 19, 2014	54.17	
	January 15, 2015		20:35
Quinn	October 16, 2014	1:50:21	
	October 29, 2014		1:20:59
	November 20, 2014	55.33	
	January 12, 2015		11:33
	January 29, 2015	18:50	3:00

	February 26, 2015	2:20:33	
	June 12, 2015		33:52
Reed	September 16, 2015		34:36
	January 6, 2016		32:52
	January 13, 2016	15:15	
	January 20, 2016		47:52
	February 24, 2016	50:43	
	March 2, 2016		1:09:45
	April 28, 2016		45:38
Lou	October 16, 2014	29:15	
	October 21, 2014		44:45

Multiple sources of data allowed triangulation of data to ensure validity and reliability. An interplay of participant and researcher voices together provided a rich detailed multi-perspectival data set to this research.

Thematic analysis provides a “flexible and useful research tool which can potentially provide a rich and detailed, yet complex, account of data” (Braun & Clarke, 2006, p. 78) and was used in this research to test the relevance of workplace learning theory to TAs’ learning how to teach, termed theoretical thematic analysis (Braun & Clarke, 2006). This form of thematic analysis focuses on exploring data through a selective approach. In this study I focussed on the analysis of data that related to patterns of meaning related to TAs’ learning in the workplace and accompanying themes predicted in the literature, specifically, learners’ characteristics, learning process, and knowledge development. For example, within the category of learners’ characteristics, ‘robust disposition and espoused theories/conceptions’ and ‘cloaked in a student subject position’, were identified as themes. However, I remained open to other thematic possibilities throughout analysis. Braun and Clarke (2006) state that thematic analysis takes place in six steps:

- (1) becoming familiar with the data;

- (2) systematically coding data;
- (3) identifying themes;
- (4) reviewing and mapping themes;
- (5) defining and naming the theme; and finally,
- (6) producing the report.

Using the above as a guide, my data analysis process involved the following steps:

1. *Becoming familiar with the data*: Becoming familiar with the data relies on repeated reading in an active way, which is about looking for meanings, themes, and patterns (Braun & Clarke, 2006). First, I read the text line by line and made note of anything that stood out to me as the researcher, keeping in mind the themes of workplace learning relevant to this research—learners’ characteristics, their learning process, and knowledge development—identifying anything that I felt broadly related to TAs’ workplace learning process, whether explicitly stated or tacit (observed through observation). For example, Chris states, “I just really didn’t realize how much power, how you assign people grades can make so much difference and it changes people’s lives,” is an example of a statement that represents significant learning about teaching. This example shows that Chris went through a learning process of realizing the impact of instructor actions on individuals and the lasting effect of those actions. In this example, grading was the topic but other topics were identified throughout the research. This entry shows how learning in the workplace while teaching results in significant learning. I also looked for key words that indicated learning, such as notice, think, and feel (see Appendix J for a complete listing of these words). Each data item was given equal attention (Braun & Clarke, 2006). All interviews

were transferred into word tables, I identified ideas in a column beside each interview entry.

2. *Systematically coding¹⁵ data*: After going through several examples, I began grouping these ideas into themes. Braun and Clarke (2006) state: “A theme captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set. An important question to address in terms of coding is: what counts as a pattern/theme, or what ‘size’ does a theme need to be?” (p. 82). I determined what counted as a theme based on its relevance to my research question about TAs’ learning how to teach in the academic workplace. Quantity did not determine if an idea became a theme. Relevance dominated my holistic approach to coding but I also paid attention to several coding categories identified by Saldana (2013): process, emotion, and values coding. Process coding is particularly suitable for research looking at ongoing action, such as the learning process of learning how to teach. Emotion coding is specific to interpersonal and intrapersonal relationships that affect participants’ feelings that are often related to interpersonal relationships. Lastly, values coding is about coding participants’ values, attitudes, and beliefs specific to teaching in higher education and learning.
3. *Identifying themes*: I began identifying how the themes could be categorized across all data by focusing on the most frequent and salient codes that made sense to this research. When I felt that the themes represented the data, I prepared my coding manual (see Appendix K). Using the developed themes, I then reviewed and continued coding the data set several times, so that the coding process was thorough, inclusive, and

¹⁵ For this research, I use the term coding to represent the process of identifying themes in the data.

comprehensive. I continued until I had exhausted the data, reached saturation, and covered breadth. At this stage, it is advised that one asks under what conditions these themes could occur, what they could relate to, and what consequences could be associated with the theme to help broaden meaning (Richards, 2005).

4. *Reviewing and mapping*: At this point, I created thematic documents that collated all excerpts identified in each theme. I then read through all the excerpts in each theme to see if they formed a coherent pattern. Following that, I looked at the different themes in relation to each other to make sure that no theme was redundant.
5. *Defining and naming*: Each theme was detailed further and described how it related to the broader overall research. Once defined, the themes were brought together into broader overarching themes illustrated on large sheets (included in Chapter 4). This process produced sub-themes and once complete, each theme was further defined, its relevance stated, sub-themes defined, the theme and meaning summarized, supporting quotes from data gathered, and further research questions developed as a result of the analysis. No theme holds more weight than another with all being of equal relevance. Due to this process, the themes are internally coherent, consistent, and distinctive (Braun & Clarke, 2006).

6. *Producing the report*: Finally, the research findings were brought together in Chapter 4.

When using thematic analysis, there are certain issues that the researcher needs to be aware of, which include:

- that the themes do not simply mimic the research questions (if they do, no analysis took place);
- that the themes are unconvincing, since each theme should represent a central idea;

- that there is a mismatch between the data and the theme; and
- lastly, that there is a mismatch between the research questions, theories, and framework used (Braun & Clarke, 2006).

Themes developed were checked against the above to ensure that they did not contain any of these issues.

Research Strengths and Limitations

A significant strength of this study is that no other studies have taken a workplace learning approach to TA work. Through an inductive triangulation approach, using workplace learning themes guided by semi-structured questions and interviews, this research looked at how TA work fits into a workplace learning framework. Therefore, one of the strengths of these findings is its originality.

Another strength is the contribution this research makes to several fields of study: anthropology, educational development, and workplace learning. The application of ethnographic methodology in an academic institutional context is innovative and also contributes to the field of anthropology. Since this research is about learning to teach in higher education, it contributes to educational development that researchers may find useful to other populations within academia. Lastly, this research contributes to workplace learning since it is situated in the academic workplace and focused on the first entry to an academic career. TAs are learning how to teach while working in the academic workplace. Therefore, they are engaged in workplace learning. This is the case at most universities across North America. Since this is the case, the findings developed here show the various factors that impact learning how to teach.

Further, this research took place while TAs were currently involved in their first term of teaching. Accordingly, the data collection was not retrospective: TAs did not have to think back

and rely on memory. This research took place in real time, making their feelings and thoughts highly reliable.

Nevertheless, several limitations can also be identified. Lincoln and Guba (1985) state that the quality of qualitative research is dependent on its credibility, transferability, dependability, and confirmability.

Credibility was addressed through the research methods used, which provide the ability to triangulate the data. By interviewing participants up to four times over the term that included multiple check-ins during the interviews to make sure that their views were captured, I gathered substantial data and representation of participants' voices. These data were analyzed along with the video-recordings and my field notes to provide a holistic view of TAs learning to teach.

The issue of transferability may be challenged since this research is specific to UVic. Limited as it is to one university, this research also does not include representation from all faculties, therefore rendering this research very context specific. Even though this was intentional, I contend that the results are applicable across institutions and disciplines and findings are instructive to all disciplines. Characteristics of TA work at UVic, such as TAs being part of a union, may not be the case at all universities. Nevertheless, the TA working situation at UVic is similar to many other institutions, such as mandatory instruction not required at the institutional level, a campus-wide voluntary conference (or orientation), and structure of work determined at the department level (Korpan, 2014a). As well, research on workplace learning has proven to be applicable across various workplace settings. Finally, the clearly stated research process and rich description allows for replication in other contexts.

Dependability is confirmed through the alignment of analysis to the research design of the study.

Lastly, this doctoral research was conducted by one person, and even though discussed with my supervisory committee, it is still composed from one perspective, although strongly grounded in the data. Due to the nature of this study, it is recognized that the researcher's subjectivity significantly influences the perspective taken. I have attempted to be as transparent as possible so that readers can clearly identify my biases. Due to my extensive background of working with graduate students learning how to teach as TAs and as students aiming for an academic career, my interpretations and perspective are highly informed. I have worked in this role since 2006, regionally and nationally. Of particular significance, is that for six years, I was chair (and vice-chair previous to that chair) of a special interest group (SIG) called Teaching Assistant and Graduate Student Advancement (TAGSA), part of the Society for Teaching and Learning in Higher Education (STLHE), Canada's national association. During those six years, I contributed significantly to the field through conferences, publications, committee work, and volunteer positions that resulted in receiving the inaugural Educational Developers Leadership Award in 2016. The Educational Developers Caucus (EDC), a constituency of STLHE developed and granted the award.

Further, this study was not intended to evaluate the programming in place at UVic and therefore I had no vested interest in responses from TAs. Even though the participants and I had in-depth conversations about teaching and learning to teach, I at no time directed participants' contributions, whether favourable or critical of programming. Our conversations were about the act of teaching and process of learning and what hindered and supported their learning how to teach. Despite aiming to remain neutral during analysis, I recognize that my own biases influenced this research. Should this study be repeated, I recommend several individuals with

differing expertise be involved. An audit trail is provided to ensure dependability and confirmability, as I aimed to be transparent in my data collection and analysis.

Summary

In this chapter, I have shown that a qualitative ethnographic methodology utilizing research methods of interviews, observation, video-recording, and field notes provided the best approach to study TAs' learning process while learning how to teach in higher education. As well, I discussed the strengths and limitations of this research. The next chapter demonstrates each pattern of meaning or theme, accompanied by illustrative quotes.

Chapter 4 Research Findings

“It [teaching] is harder than it looks... I think it is more complicated than we give it justice.”
Chris

Nine participants share the learning process they went through as they were first learning how to teach in higher education. Despite many differences, these nine teaching assistants have much in common. To provide a rich detailed description of TAs learning to teach, I illustrate each through researcher-constructed cameos (McAlpine, Amundsen, & Turner, 2014), fictionalized stories (in italics after each theme heading) that represent a composite of TAs’ experiences. The aim of this chapter is to let the reader hear TAs’ stories as they go through the process of learning how to teach. Documents used to generate sub-themes and descriptors are included, as well as diagrams to show the relationship between themes, sub-themes, and descriptors derived from theme development in response to the research question: *What are TAs doing to learn how to teach?*

Themes

As noted in Chapter 3, an inductive approach to data analysis was taken. To review, I began with multiple readings of the transcripts and made notes of anything that stood out to me as the researcher, keeping in mind the key workplace learning themes informing this research—learning characteristics, learning process, and knowledge development—but identifying anything that I felt broadly related to TAs’ learning process, whether explicitly stated or tacit. After going through several examples, I took a holistic approach to coding by grouping these ideas into themes based on their relevance to the research question and TAs’ learning how to teach. When I felt that the themes represented the data, I then reviewed and continued coding the data set several times, so that the coding process was thorough, inclusive, and comprehensive. Once themes were fully developed, I used flipchart sheets (pictured for each theme below) to

summarize the theme and relevant data. This process produced sub-themes and once complete, I further defined each theme and sub-theme, stated its relevance to this research, and gathered from the data set supporting quotes. Even though I was open to themes not represented in the literature, the analysis process did not identify any new main themes except for a sub-theme of strategic affordances. The following themes were identified:

- Theme 1 – Robust disposition and espoused theories/conceptions
- Theme 2 – Controlled self-directed learning process
- Theme 3 – Cloaked in a student subject position
- Theme 4 – On-the-fly teaching judgements
- Theme 5 – Diverse affordances
- Theme 6 – Discretionary reflective practice

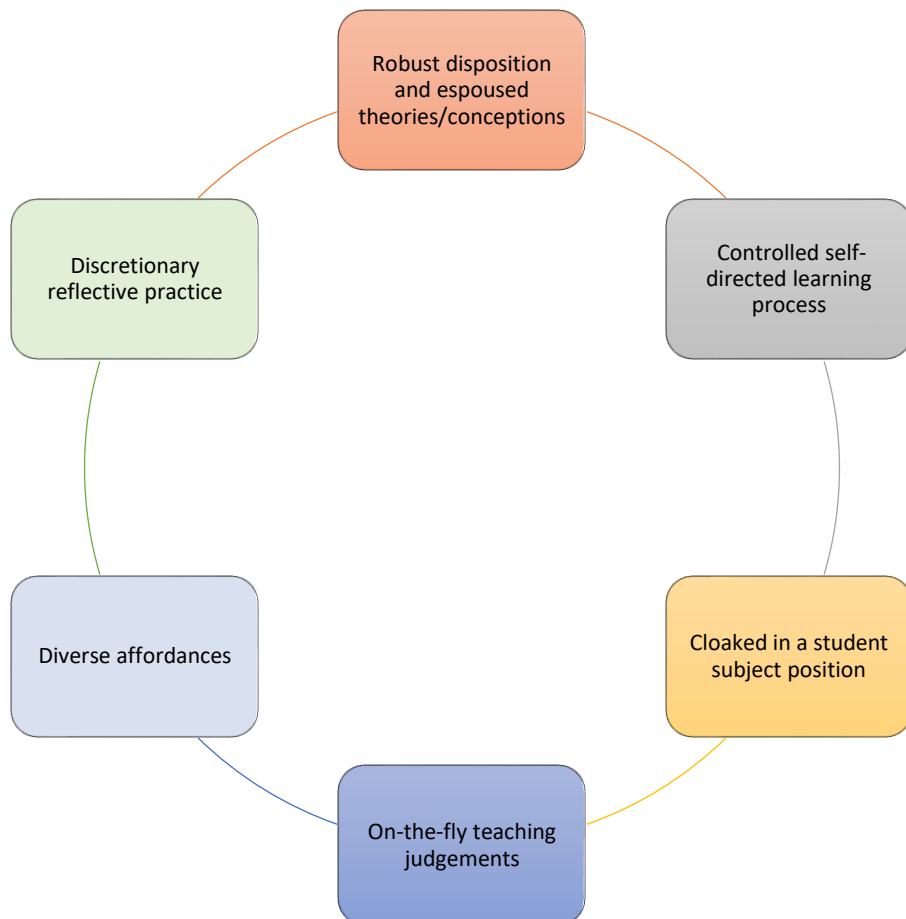


Figure 3. Themes.

Theme 1 – Robust Disposition and Espoused Theories/Conceptions

Catch more bees with honey

I am excited to teach! I am going into it to make myself as approachable and helpful as possible, I hope it comes through. I see students as whole people, not just students, and am interested in their life outside the class. For a lot of them, this will be their first semester and I want to help them with the stress and change. I just want to be really approachable and I guess, catch more bees with honey! I am excited to share my experience with students. There were a lot of things that I didn't know about as an undergrad. I came to university with few expectations and not really with an understanding about how the system worked. I want to

explain to my students that there are so many opportunities that they don't even know about. I really want to share that with them, not just about content about the course. Although, as a teacher, I think it is very important to have high standards and help people reach that. At university, you are teaching adults, and if students don't put in the effort, I don't think anyone owes them anything. I have not attended any workshops or anything like that about teaching because I feel I only learn through experience. I appreciate hearing from others what to do but I do feel like I have good intentions and I'm doing things the right way. I am following the model that seems to work and that is from my own experience as a student. Therefore, I feel like I know what students need from being a student myself.

As this composite story communicates, TAs held strong beliefs about teaching and students' learning. Each interview began with questions related to participants' beliefs and values about teaching and learning. For example, I asked TAs if they had an interest in teaching, where that possibly came from (past experiences), and how they were going to approach teaching. All TAs had strong interpretations, beliefs, attitudes, and stated values about what represented teaching, students, and how they were going to approach their teaching—their espoused theories/conceptions about teaching and learning. TAs' conceptions were based on experience and what worked for them regarding learning and relationships to former or current teachers (part of their learning biographies), plus the values about the position and work. These values can often be implicit and include judgement about expectations, assumptions, or qualities of students, teachers, and TA-related work. As established, sometimes conceptions align with one's disposition but sometimes they can be in contradiction to one another. Disposition is relevant to this research because it is represented through TAs' actions related to learning and teaching. Therefore, it is important to not only find out what TAs think about learning and

teaching, it is also necessary to see if their conceptions align with their disposition. Since none of the participants taught previously, their conceptions about teaching and learning were strictly from a student subject position. TAs' dispositions related to learning informed their learning process throughout this research.

The following sub-themes make up the theme of robust disposition and espoused theories/conceptions—*caring*, *sharing*, *authority and control*, and *students needing to work hard* and *TAs maintain high expectations of students*. Figure 4 shows the diagram for this theme and relevant data.

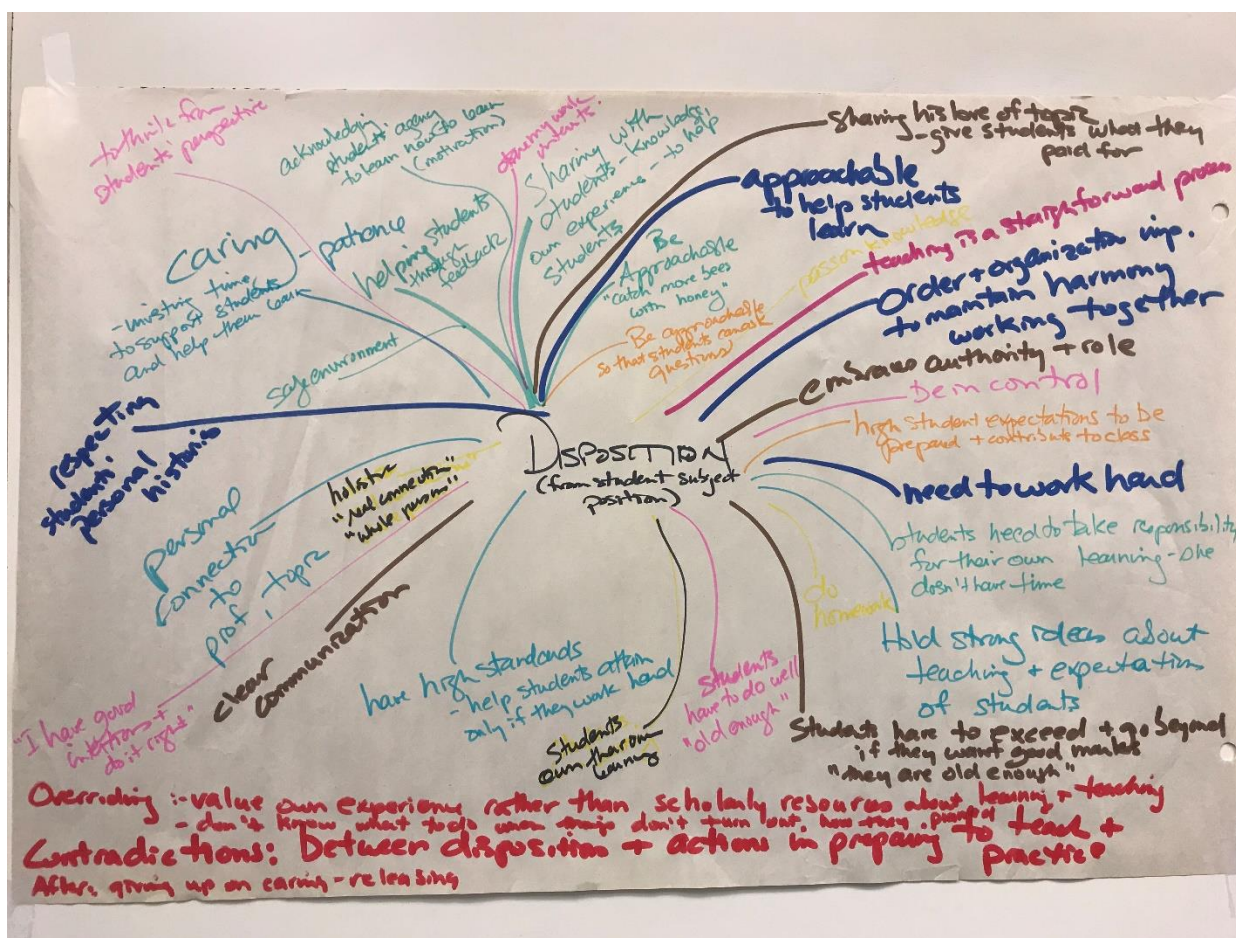


Figure 4. Robust disposition and espoused theories/conceptions theme.

The following diagram shows the theme of robust disposition or espoused theories/conceptions, sub-themes, and descriptors that exemplify the sub-themes. To help the reader, in the discussion following the diagram, sub-themes are italicized and descriptors are underlined.

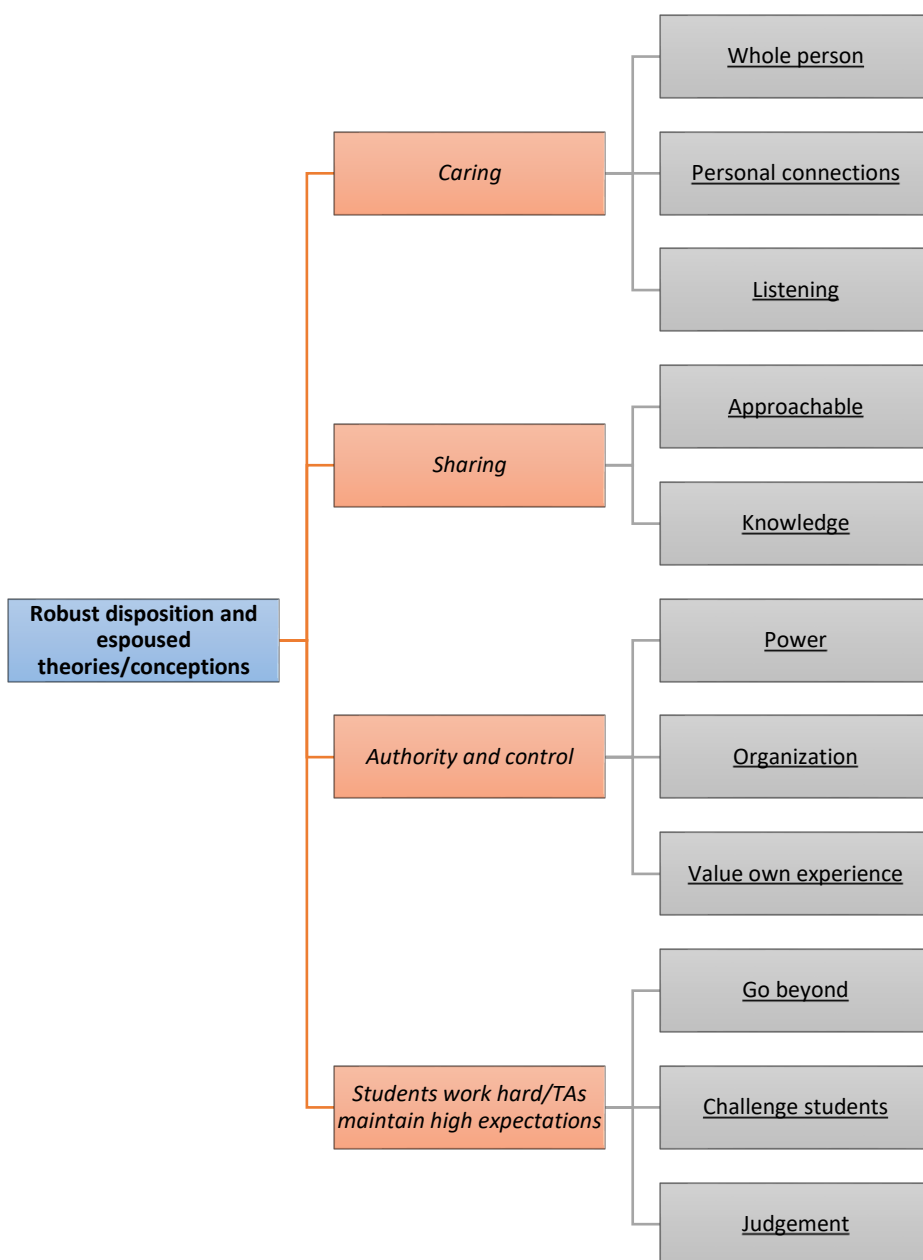


Figure 5. Diagram of robust disposition and espoused theories/conceptions theme, sub-themes, and descriptors.

Caring.

Important to TAs were personal connections to students, and in general, being *caring*. Most of the participants indicated that caring was a very important value related to teaching to support learning. Expressions of caring came in the form of practicing patience with students, putting themselves in the students' shoes (including thinking from students' perspectives), investing time to support students through feedback, creating a safe environment for all voices, respecting students' personal histories, acknowledging students' agency to learn (motivation), realizing that students were learning how to learn in higher education, and considering students holistically by thinking about the whole person. Reed had a student who transformed due to Reed's disposition of *caring* for the whole person. The student told Reed, "You were a TA who really listened and seemed to care about my wellbeing, not just in the classroom but as a whole person." This comment validated Reed's disposition of approaching students as whole people that aligned with her conceptions about teaching and learning.

Other TAs talked about getting to know students on a more personal level so that authentic connections could be made to students as people. Participants noted teachers they had who modeled caring by creating personal connections, inspiring them to do the same. For example, Alex, speaking about teachers in high school and university, explains, "They really cared about the material...they presented it in an engaging way and they very obviously cared about the students...he went through six drafts with me, word by word, line by line, and taught me how to write." Alex explained how this form of caring led to an authentic personal connection to the instructor and to the topic. As a TA, Chris "wants them [students] to enjoy as much as I enjoyed my undergrad." Chris told a story about a TA who showed that he really cared by going beyond what was required of him in his TA role. He helped Chris with graduate school applications by giving ample feedback.

The importance of listening is another representation of caring, as relayed by Blake: “I guess as much as possible, listening to the needs of students and if they always have questions that seem to be framed in a certain way then trying to hear that and cater to that as a teacher.” Quinn explains the importance of listening by understanding what students are going through: “I wasn’t a great student in my first year, even in my second year. I am kind of sensitive to or I sympathize with students who cannot figure it out yet, and I feel like I understand when they are struggling.” Quinn also comments,

I know that they are timid, and I try to warm up to them and get them to be comfortable to be involved. I even tell them, when you are engaged, class is fun, when you are not engaged, class is always time. Yeah, I really do try to put myself in the students’ shoes.

Caring extends to content, as Blake notes when describing the classroom culture: “Actually caring about what we are learning.” Caring had its frustrating side as well. Reed recounts how, “I had such a hard time letting go of wanting them to engage more,” and being able to let go of the caring disposition.

Sharing.

The next sub-theme, *sharing*, is represented by two ideas: being approachable, and sharing knowledge. The reason for being approachable was so that students felt comfortable approaching the TA with questions, ideas, and thoughts. Chris states, “I am going into it to make myself as approachable and helpful as possible.” Sharing also represented good teaching for some TAs. For example, when asked what represented good teaching, Sam responded, “I would say approachability and enthusiasm; more than just knowing the content but being passionate about it and willing to share.” Blake also mentioned the importance of being approachable by recalling as an undergraduate, “I liked it when I felt I could go and ask a question.” Chris

connects TAs' approachability to inspiration, stating, "I think TAs have a powerful role in making the course interesting because they are more approachable than your professor." Sam nicely sums up the importance of approachability with the phrase, "Catch more bees with honey."

Sharing their passion and knowledge about the topic was approached from a few different perspectives. A few wanted to genuinely share their knowledge and experience to benefit students' learning and experience at university. Quinn exemplifies this by stating, "I think that is a lot of fun—especially if you are excited about what you are learning—to transfer that knowledge to students so that they can learn about what you have learned." Interpreting knowledge as a product and something they were required to provide in their teaching position was expressed by others. Charlie states, "I enjoy the topic. I want to share it with everyone," but then takes a more economic consumer approach by stating, "the student is obviously paying tuition and they have a right to as much knowledge as you can provide." Charlie goes on to describe the importance of doing it well:

Impart not only the correct information but impart it effectively so that it actually reaches the student and not only that but you have to do it in such a way with a sensitivity to their worldview and personality so that you can relate it to them and something that they can associate with their own discipline and their personal life.

Sharing knowledge well, meant making the content relevant to students. Alex shares another reason why sharing knowledge was important—for personal satisfaction: "I think the biggest thing is the emotional gratification of seeing someone learn, that you did that." Sam shares the same sentiment: "It is really rewarding actually seeing students improve." Sam also brings up the importance of sharing current and relevant content. Charlie adds another perspective to sharing

by stating, “Because they invest in you, you end up investing in them,” bringing up the reciprocal nature of sharing that can occur in teaching. Charlie explains:

Inclusivity should not be negotiable and often times when I have student with accommodations in class, as a professor, I think you should be aware if you are talking too fast. In all it should be a pleasant atmosphere, one that makes the student and teacher comfortable enough so that they can learn together.

In this example, Charlie identifies that the teacher and students are both learning. This highlights the reciprocal nature of teaching through a more student-centred approach, also exemplified by Reed:

A good teacher lays the foundation for students to uncover or discover learning for themselves by laying the foundation. It is to motivate them, guide them, and pose questions to students to help them in that discovery for themselves. It is so the student takes ownership of their learning. It is not being up there like a preacher on a pulpit or sage on the stage, it’s not about me knowing.

To facilitate knowledge sharing, TAs had ideas about teaching strategies. For example, Alex relates how content needs to be broken down into consumable chunks: “Going through step by step...and break [the content] down into manageable chunks and see how they all fit together and being able to communicate about those sorts of things.” Sam thinks that “you need stories to really tie into the issues that are interesting,” and “give students feedback about assignments so that they can do as well as they want.” Sharing was important for TAs personally but also to support students’ learning.

Authority and control.

Authority and control were mentioned often and highly valued by participants. A few of the participants highlighted how much they valued the power associated with being in a position of authority and the ability to control the learning situation. For example, Charlie shares how “standing up in front of the crowd and disseminating knowledge is something that I really enjoy.” Most held the same notion of authority as being represented by a university professor at the front of a class, which most aimed to mimic. Charlie explains, “The teacher elevated on a platform, and even how they dress. I taught today and I usually wear this with a sport coat. I try to put a little bit of boundary there—the authoritative.” When speaking about TAs they had as undergraduates, some noted how authority was an issue. For example, Blake shares an undergraduate experience of how a TA was “someone who didn’t command respect.” Blake goes on to explain how authority was hard to articulate—one TA was excellent but Blake could not clearly articulate what that person did to establish authority and respect in the classroom.

To hold that authority in the classroom, TAs rendered control through implementing order and organization to help facilitate a straightforward process and alleviate unknowns. TAs valued the control and organization provided to them by the instructor or the ability to institute control. Reed explains how “the lesson plans are all laid out down to the minute, three minutes on this, five minutes on this, it is very detailed and, in some ways, I am appreciating that structure.” On the other hand, Quinn and Alex were provided with PowerPoint slides but preferred to make the slides their own. TAs who had minimal structure provided by the course supervisor took it upon themselves to develop PowerPoint slides and questions for the classroom in order to provide the organization they required to feel in control of the classroom. Blake shows how her thinking about organizing the classroom was directed towards maintaining control: “I am being a little bit more careful and less trying crazy new things every week, and not having charts and markers and

debates.” Chris also explains the control that was recommended by the course supervisor: “If [students] didn’t come prepared then they can leave the class.” Having control helped them feel more confident in maintaining harmony in the classroom.

Overwhelmingly, all TAs valued their own experience (as a student) over scholarly resources or others’ advice about learning and teaching in higher education. This was based on the belief that their experience as a student worked for them so it would also work for their students. This belief contributed to their sense of authority and need for control. Quinn explains, “I don’t have questions about teaching, I approach it in the way I think it should be done, what is right.”

Students needing to work hard and TAs maintain high expectations of students.

The last sub-theme is *students needing to work hard and TAs maintain high expectations of students*, which clarified their beliefs and ideas about the role of a teacher. Almost all of the TAs held high expectations of students, even though they were aware that they would be working with students who were new to higher education and expectations of the university. TAs talked about their own hard work as a student, while also competing in sports and working part-time, indicating that students had to work just as hard. Due to high expectations, TAs expressed that students had to go beyond, not be average, and had to exceed because students were “old enough” to know how to study and take responsibility for their learning. TAs had aspirations to inspire students to be like them and do well. To achieve this, they did not believe in what Alex described as the “hand-holding approach to teaching.” Charlie defines what students should do: “Honestly, if they want to get ahead, they have to go beyond what is expected by your average student, like pursuing the teacher after class to learn more about the topic and to look over drafts of papers.” All strongly pointed to students being responsible for their learning. Most gave

examples of what students should do, based on their own experience and what worked for them as an undergraduate student. Sam shares, “The classes that I did well in were the ones that I was continuously contacting my professors.” Alex claimed that only students who were willing to do the work and had an interest in the topic were worthy of care, despite personally disclosing a dislike for authoritative teachers who do not help students. Alex states,

I really don’t believe in willy nilly, allowing students to get A’s for decent but not exceptional work and all that is not helping anyone. I think it’s not valuable to preserve this sense of inflated self-worth without actually being able to perform.

To achieve this, TAs recognized that it required ample support from instructors, such as knowing students personally, helping students succeed, and challenging students. Chris recognizes that:

There is a fine line between giving students too much and too little and it is finding that balance between making them uncomfortable or making learning too easy for students.

You can’t make them too uncomfortable where they will give up but you can’t make them too comfortable that it is too easy.

Aiming to maintain that line though proved to be challenging, as Chris explains: “I am not going to give you an A because you show up, if you have these questions in advance you should be able to prepare and be able to say at least one thing, even if you are scared.” Alex agrees by stating, “I think you set the expectation that you are not going to get anything out of this class if you don’t read and you have to attend this class if you want to succeed.” Alex agrees by stating that student satisfaction in a course was a direct result of the teacher having high expectations.

Underlying this sub-theme, was a sense of judgement. Most judgements were related to their expectations of students. Sam notes, “Remind them that I am here to help but it is their

responsibility and they should have thought about this ahead of time.” When students did meet their expectations, Chris states, “I think all students should be rewarded if they are working hard and putting in a solid effort.” Expecting students to take responsibility for their own learning was quickly discounted by stating that students probably would not. Often, this was based on their own experience as a student, relating how they did not do the readings, listen to the instructor, or participate in class discussions as an undergraduate. Even before setting foot into the classroom, TAs concluded that students would not meet their expectations. This tendency for judgement influenced their teaching performance in the class. TAs often labeled students as A or B students and referred to their “intelligence” level. TAs discussed having favourites and actively exercising favouritism when grading by marking “top” students more leniently and using their assignments to compare against the remainder of students. Judging also occurred when TAs admitted to assuming top students were correct in their responses or with assignments when TAs had doubts about content, assuming those students knew more about the content than they did.

Summary.

TAs began their first teaching experience excited, motivated to teach, and with strong conceptions about teaching and learning based on their learning biographies. These strong ideas included a caring and sharing approach to students and their learning, feeling in control and maintaining authority in the classroom, and expecting students to be responsible high achievers that had to be maintained by TAs. These conceptions towards learning and teaching were challenged in different ways throughout the term. Some activated contradictions while others were confirmed.

Caring was demonstrated through wanting to get to know students as whole people, making personal connections with students, and listening. Even though caring was conveyed in

different ways, caring had its boundaries. Often caring was restricted only to students who wanted to, or did, well. As TAs aimed to make personal connections, non-respondent students provoked TAs to make the difficult decision to release their caring disposition.

TAs wanted to share their passion for the discipline and their research with students with some feeling that their main duty was to transmit as much information as possible—a teacher-centred/content-oriented product view of knowledge. In the sharing sub-theme, TAs aimed to be approachable one-on-one. Being approachable brought up the reciprocal nature of teaching and learning. Some saw this reciprocity rendered as meaning personal gratification for them, which was testament to their teaching ability to share knowledge. Sharing their passion and research facilitated making the personal connections that TAs valued.

Some TAs were excited to take on authority through their teaching position but also grappled with taking on that authority. All wanted to feel in control, which was accomplished by being organized and basing decisions and actions on their previous experience. TAs used external cues to indicate authority, such as clothing, standing behind lecterns, and issuing grades. Some critical incidents in the classroom forced TAs to take on the authoritative role, which often caused frustration. All aimed to recreate their own ‘best’ learning experience but when remembering themselves as a first- and second-year student, anticipated that this would be difficult to achieve. All TAs had mechanisms in place to help them feel in control due to the unknowns they feared. One of these mechanisms was valuing their own experience (as a student) over scholarly resources or professional development related to teaching and student learning.

Lastly, TAs had high expectations for student performance, which was related to their own experience of being an achieving student who was highly motivated by external and internal factors. TAs stated that students had to go beyond what was expected. TAs acknowledged that

they would be teaching first- and second-year students who were just learning how university works with several admitting that it took them until third-year to really understand the university system. This set up a contradiction. TAs still maintained their high expectations despite knowing that students required significant support to be able to reach their expectations. This indicates that this conception is tenuous and dependent on TAs wanting to take on that responsibility. Several TAs stated that they did not think it was their responsibility to make sure that students did well. It was the students' responsibility. The key term here is 'responsibility'. Taking on the responsibility of a teaching role had many unknowns. Taking on the responsibility of ensuring that each student did well, could be overwhelming. However, TAs could challenge students to do well by upholding high expectations. High expectations led to judgements about students' abilities and 'good' vs. 'bad' students. These high expectations were not always clearly stated to students, revealing a potential gap in TAs' conceptions about teaching and learning—that being the importance of transparency and communication in a caring disposition. Eventually, TAs relinquished their high expectations that may have sent mixed messages to students. Some TAs mentioned the value of interpersonal skills in the teaching role, which were not always rendered in action. For example, despite stating that relating to and communicating with students was important, while teaching, the TA would take on a more authoritative approach through their body language and by reprimanding students.

As TAs began their teaching role, some of their espoused theories/conceptions about teaching and learning began to cause friction. TAs' initial theories about learning and teaching in higher education continued to inform their thoughts, feelings, and actions throughout the term. Though, at no point in the research, did TAs acknowledge that their own conceptions could be the foundation of their frustrations or the issues they were experiencing. In this way, their

espoused theories/conceptions were robust as they floundered in some situations, provoking anxiety, frustration, and emotions, as they tried to maintain their conceptions while their disposition (the actions they took) challenged these conceptions. This is explained clearly by Reed:

When they say, what are we supposed to be doing, I am thinking, “seriously what have you been listening to for the last five minutes.” Oh, inside voice. But on the other hand, as a student, it is your responsibility to pay attention. So, should I not call you out when you are not going to be on task? I don’t know, where is that balance? I don’t want them to feel picked on but I want them to feel empowered of their own learning. So, it is a challenge to me. How much of what I am feeling do I let them in on? Or do I poker face and just go okay that is fine and explain it for the 5th or 6th time? So, it is something that I am aware of that yeah it [frustration] does come across to students.

This shows that at times, their disposition to act in a certain way was more robust.

Theme 2 – Controlled Self-Directed Learning Process

Learning to spitball inside the box

When I received the notice that I had a TA position, I wanted a crash course on being a TA but found nothing. So, to prepare, I read the textbook well, meaning I didn’t skim it like I did as a student. I actually had to read it really carefully and thoroughly. Also, before class, I go on Wikipedia and learn more about the topic. I read all of the course assignments and come up with my own questions. The TA meetings with the course instructor are not taken seriously (TAs come late or don’t come at all) and we don’t discuss how to teach. I didn’t always know what the professor was getting at so in the classroom I just spitball and wait to see what the students come

back with. I really feel constrained as to what I can do as a TA and I find I am being a little more inside the box than I want to be.

Since TAs in this study were not obligated to take any significant formal instruction about teaching before stepping into the classroom, they were afforded a lot of autonomy as to how they were going to organize and self-direct their learning. By graduate school, most TAs are self-directed learners but still lack the competence that comes with completing a graduate degree. Some TAs in this study had sought out some form of formalized professional development. UVic has a robust centralized program that provides multiple opportunities for TAs to access support for their role as a TA. Despite this, in general, TAs aimed to recreate their own experience. Blake explains: “I hope my experiences as a student in university settings will help me to maybe relate to what my students are going through and give them a better experience.” When TAs conveyed what learning actions they took, they discussed accessing resources, making materials ready to use, and attending professional development opportunities. The two sub-themes in this theme are *accessing support* and *learning actions*.

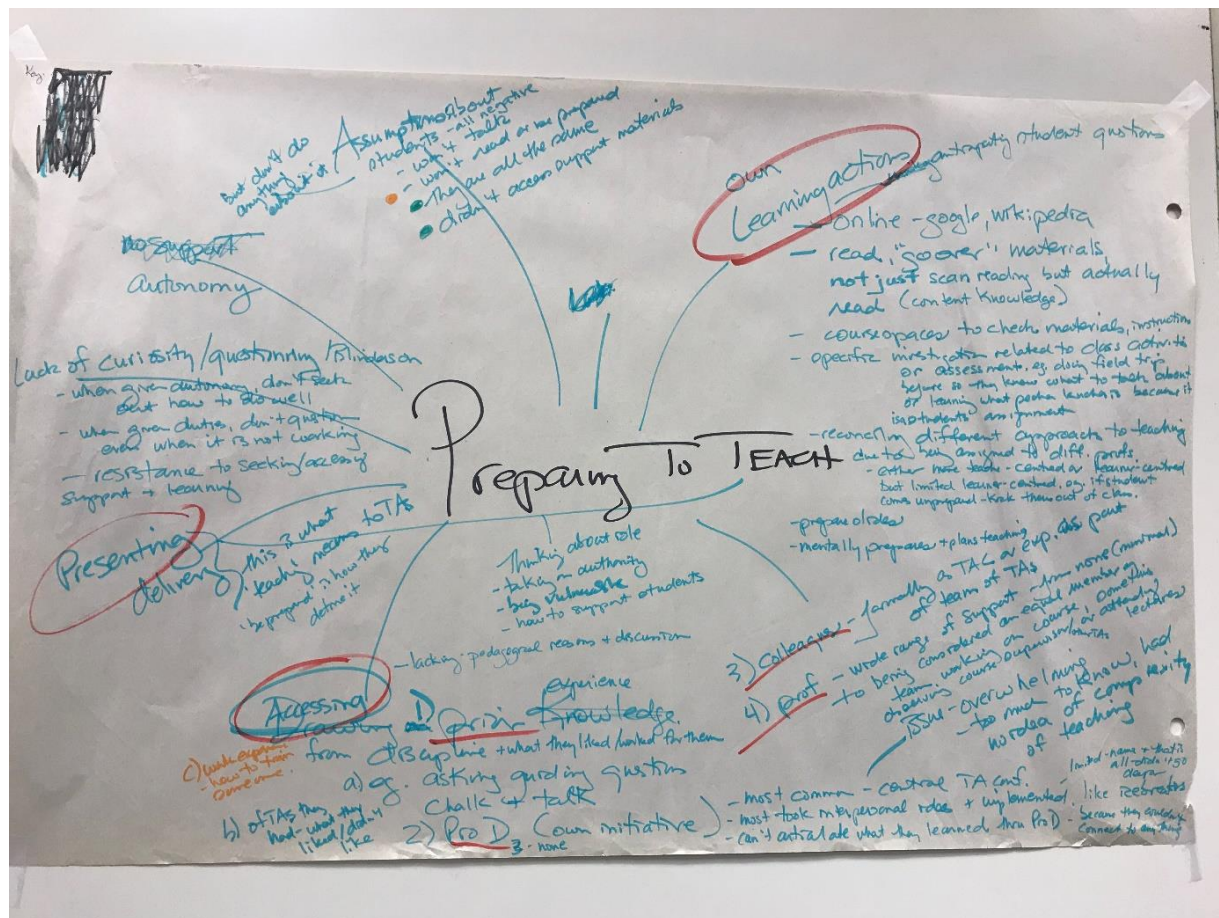


Figure 6. Controlled self-directed learning process theme.

The following diagram shows the theme of controlled self-directed learning process, sub-themes, and descriptors that exemplify the sub-themes.

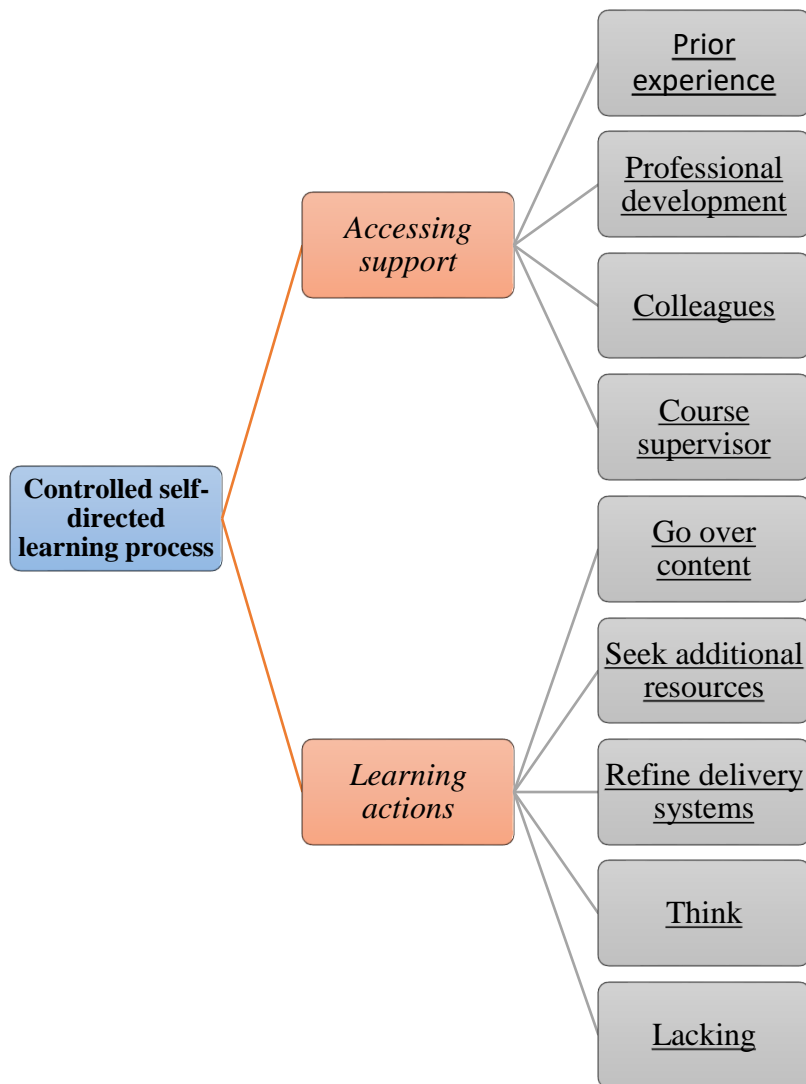


Figure 7. Diagram of controlled self-directed learning process theme, sub-themes, and descriptors.

Accessing support.

TAs' *access to support* had an impact on subsequent learning actions and how TAs approached learning about their new role, such as whether to learn or not (issues of non-learning), and what to learn. TAs had different forms of support that they accessed or were provided. These are presented below in order of most to least accessed in each sub-theme (as illustrated in Figure 7):

a) Prior experience – was derived from their discipline, what they liked, or what worked for them as a student.

i. Discipline-specific – most TAs mentioned signature pedagogies¹⁶ from their discipline that they were following. For example, Pat was used to ‘chalk and talk’—writing on the board and talking through the work—and Blake talked about small group discussions. Most had a difficult time considering employing different strategies in the classroom that deviated from what they had experienced. Blake’s undergraduate experience included discussion groups with students actively interacting, whereas Alex explains, “[the discipline] is very focused on asking guiding questions to help students come to their own conclusions about [the topic].” For their first-time teaching, TAs would not deviate from or alter their disciplinary signature pedagogies and what they experienced, preferring to stick to what they felt they knew.

ii. TAs they had as undergraduate students – five out of the nine participants had undergraduate courses that had a component of the course taught by TAs. Participants considered these TAs as good and bad models. When considered good, TAs wanted to mimic the TA but when bad, they wanted to avoid the actions associated with that TA. For example, Chris, as an undergraduate, quickly realized how important TAs were to learning. Therefore, if possible, decisions on what courses to take, were based on the TA for that course. At the first tutorial or lab session of a course, if the TA demonstrated actions that Chris thought would be

¹⁶ Signature pedagogies is a term developed by Shulman (2005) that represents teaching strategies common to a particular discipline.

supportive of student learning, then the course would be kept, but if not, the course would be dropped. Quinn recounted TA actions that put students at a disadvantage as an undergraduate. The TA always let the students leave early, which at first, was enjoyed but then students realized how it was detrimentally impacting their abilities in the course.

iii. Prior work/sport experience – some of the TAs in this study brought experience from previous work and/or sports to the classroom. For example, Quinn worked with at risk youth and through that experience realized the importance of personal connections and communication to establish trust. Therefore, in teaching, Quinn aimed to establish a foundation of communication and trust with students so that students felt more connected to the course and TA. Sam brought current research knowledge from a co-op experience to the classroom. Blake brought an approach that was learned through previous work experience, termed the 3-step approach: “I’ll show you how to do it once and then I will watch you do it and you can ask me questions as much as possible. Then I will step back and you can do it on your own.” Other TAs brought experience from coaching or being leaders in sports of various kinds. All of these experiences were deliberately brought into their teaching.

b) Professional development – six out of the nine participants, through their own initiative, actively sought out professional development. The most common was the centralized TA Conference in the fall. Sam states that “taking the TA workshops about discussion leading helped a lot with dos and don’ts.” Most mentioned taking away from the TA conference interpersonal communication ideas that were

implemented into their teaching, such as icebreakers and getting to know students' names. However, it was evident that TAs did not grasp the theory behind why this was important because they typically did not continue implementing these strategies after the first class to continue building rapport with students. When pressed, TAs had difficulty articulating what they learned through professional development because they could not connect the concepts to concrete teaching experience, which shows the importance of continual professional development to help TAs make those connections. However, some noted that it did not matter how much they learned in professional development because they could not implement anything. Blake gives an example, "I don't have time to spend preparing crazy cool activities that I learned about in professional development courses." Some mentioned that the professional development was overwhelming; they had no idea about the scope and complexity of teaching. Sam illustrates this by stating, "I almost felt like the more workshops [I attended] the more I was learning but the less prepared I felt because I was discovering all of these other issues that I didn't even think about." This shows that there is a saturation point and that TAs need a scaffolded curriculum. Others enrolled in the more substantial LATHE graduate two-year certificate program. The three participants enrolled in LATHE were not able to transfer what they were learning into their TA work, citing that the content of LATHE was more geared towards being an instructor responsible for the whole course or that it was too much to incorporate and think about during their first time being a TA. Despite attendance at professional development by some, TAs often noted how they were not going to draw on scholarly literature and practices.

Instead they preferred to do what they thought was best and what they were used to in their experience as a student. This indicates difficulties TAs had in two areas: transitioning from being a student to being a teacher, and in transferring concepts from professional development to the classroom on their own.

- c) Colleagues – Consistent with the literature, TAs highly valued talking to other TAs when seeking information. This is also consistent with their disposition that values experience rather than scholarly resources regarding teaching. However, most only sought out colleagues/peers when they wanted specific information. For example, Sam talks about how an experienced TA “explained to us where the TA office is, how office hours work, and just little things yeah that you just don’t even think about that we are worried about but the course instructor just doesn’t think about.” Blake talked about seeking help from the departmental TAC only when having difficulty with grading. Some TAs had no communication with any TAs in the same course or other courses. Others though, did engage in conversations about TA work. Sam explains, “myself and one of the other TAs will get together and talk and say ‘I am going to do this like this how are you going to do this’ and we bounce things around.” Another TA, Lou, also sought help from TAs in the same course: “Even though my supervisor sent the PowerPoint to me, I still have some questions about this week’s lab because some terms and some of the knowledge I already forget how to do so I need to ask my school mates.” In other circumstances, TAs had somewhat regular meetings with the course supervisor and TAs. Sam relates how the course supervisor and TAs for the same course mark together, aiming for consistency, and “to get a second opinion. ‘I think this is an eight and

that is a seven point five and this is why'. This really helps and it gives us more confidence.”

- d) Course supervisor – TAs rarely sought out the help of the course supervisor, unless regular meetings were scheduled. Three TAs had regularly scheduled meetings that involved other TAs. Even though regular meetings were held, how to teach was not discussed.

Lacking in this sub-theme are the pedagogical reasons related to teaching and discussion about the relevance and importance of their teaching actions to support student learning.

Learning actions.

Learning actions that were initiated on their own were mostly directed at content

knowledge. The list below spans the whole term TAs were teaching.

- a) 'Go over' content – this meant a variety of things, such as anticipating students' questions, going over readings but mentioning that they had to really read the materials and not just skim as they did as a student. Alex explains:

Yeah, all I did was I went through the readings the students were assigned and took pretty meticulous notes on it. Then I went through the slides that he gave me and took notes on what I wanted to say about each slide. I also read through the slides immediately before teaching to make sure I wasn't rehashing other stuff. That was about it.

However, going over the content sometimes resulted in frustration. Chris explains, “the thing that makes me most upset is that on top of all of my readings, I also have to do all of the same readings [as students] because I have to be able to articulate the work.”

Alternatively, some enjoyed the challenge. For example, Charlie states,

[Teaching] is something that you have to stay up on with the material, manage time well, and really be ready to be quizzed. I saw that as a little bit of a challenge, not one that could not be overcome but one that would keep pushing me.

Going over the content also meant accessing the learning management system (CourseSpaces) to check for updates and instructions, going over the slides provided by the course supervisor, or a more specialized investigation if there was a different activity planned for that week, such as a field trip. For example, Sam explains, “We did a field trip a few weeks ago so I went and did it myself on the weekend so that I wasn’t going blindly and knew where I was going.”

- b) Seek additional resources – Google and Wikipedia were the two resource defaults that TAs accessed to expand their content knowledge, which occurred on a regular basis. Scholarly resources were not accessed. TAs accessed and used YouTube to help illustrate content or help students learn certain skills.
- c) Refine delivery mechanisms – most of the TAs referred to teaching as preparing to present or deliver, transmission-style teaching, associated with a teacher-centred/content-oriented approach. They would personalize and add images to the PowerPoint slides provided by the course supervisor and work on how to better regurgitate and communicate content. If TAs had access to observing their course supervisor in the same setting (some course supervisors led the same sessions that TAs were leading) or another TA, they would seek out how they could refine their

approach to teaching the same lesson. This learning action helped them see technological or other practical issues that came up and how to address them.

- d) Think – TAs often mentioned the time they needed or spent to mentally prepare and plan. Thinking about questions to ask students or questions students would ask them were two primary thinking activities. Thinking time was not strictly devoted to planning what they would say and do in the classroom. It also involved trying to reconcile differences between what TAs were experiencing in the classroom as the lead instructor with what the course supervisor planned for the upcoming teaching session, or their own expectations. Despite some TAs having very clear outlines provided to them by the course supervisor, enacting that plan in the classroom did not work as expected. TAs soon realized that teaching was complex and messy. In addition, TAs had to engage in thinking time to figure out how to manage and support students' performance (TAs had to do this often without any help), while trying to exert their authority (with which they were not always comfortable), and feelings of vulnerability.
- e) Lacking – TAs admitted to foregoing learning actions that would increase their understanding of content and how to support students' learning. For example, Alex admits guessing at what the course supervisor expected regarding a certain topic. Alex did not clarify with the instructor and upon reflecting about the class because of where students took the conversation, commented that at the time thinking, "I should probably know more about this but I don't." This same approach was taken by Blake, who comments, "I don't think it is my job as a TA to be super knowledgeable about everything beyond what is in the text book." Lacking certain

skills was highly evident when critical incidents would occur. When showing a film, Sam had a student react negatively and in retrospect realized that she lacked knowledge about how to support students in that type of situation. Upon further discussion, Sam admits that she did not watch the film prior to showing it. Reasons given included lack of time and thinking that all students were the same—a common assumption. Another assumption was about the skills that students bring to the classroom. Sam explains, “Yeah, I really learned that all these skills that I thought were common sense are not common sense. Hence, they are skills that you have to learn. So, I am seeing that there’s a lot of gaps.”

Related to this sub-theme is the fact that TAs identified, while discussing their learning actions for teaching, certain assumptions about students that were primarily negative. In general, TAs, even before stepping into the classroom, labeled students as having the following characteristics: they will not talk, will not read or be prepared for class, that all students were going to be the same, and that they would not access support materials, such as guidelines for assignments or rubrics provided. Most said these were based on their own experience of being a student and knowing other students. However, despite thinking that students may have these characteristics, only one TA took some action to address or discuss how to work with students who illustrate all or any of these characteristics, but only after experiencing one or more of these characteristics in the classroom.

Overall, a lack of curiosity regarding aspects of their role in supporting student learning and teaching was highly evident. When given a lot of autonomy, TAs did not seek out instruction, instead relying on their own experience with the hope that it would be easy to recreate. Two-thirds of the TAs did attend some form of professional development but admitted

that once the content became too much, they became overwhelmed and did not want to know more. Teaching was getting too complex and they wanted to keep it simple. At a certain point, TAs experienced cognitive overload and put on their blinders. When TAs were given a lesson plan and other instructions, they did not question the reasoning behind why those instructional strategies and assessments were used. Lastly, during interviews and our discussions, some TAs were resistant to seeking and engaging in pedagogical discussions, even when prompted.

Summary.

For new TAs learning to teach, learning meant accessing prior experience, limited professional development, and accessing experiential knowledge from colleagues and course supervisors, which led to controlled self-directed learning actions. These actions included going over content, seeking additional content information if required, refining delivery mechanisms, and thinking about the upcoming teaching plan. Their thinking time included negative assumptions about students that impacted their teaching. Despite taking courses, attending workshops, or having previous relatable experience, TAs were not able to or did not transfer the bulk of that knowledge and experience to their teaching. TAs kept their ‘blinders’ on so that teaching did not become too complex, which led to TAs taking a surface and controlled approach to their learning process.

Theme 3 – Cloaked in a Student Subject Position

Spinning a lot of plates while grasping at the wind

I don't know if I want to be prescribed as a teacher because I don't think I am one. I have been thinking about TAs I had in my undergrad. It is nerve-racking thinking about how I totally thought they knew all but then I realize that I don't. So, yeah, I have definitely been thinking about what it means to take on that authority. Of course, when you are in grad school you look

at your professors differently than you did as an undergrad. You call them by their first names, you are sort of considered as part of the faculty, or the department, I guess. Yeah, that person who was in their first- or second-year teaching out of their PhD, who you thought was a really awesome professor, they only have one year more teaching experience than you! Like at some point the veil of awesome intensity has to be lifted, right. They are people and if you want to be one of those people then you have to decide what that means. Yeah, these PhD professors just dump you into these first- and second-year students, which I think are smarter than me. But then talking with students, they didn't know what they didn't know so even to try to spur conversation to get them involved was very limited because they didn't feel like they knew enough to even ask for help with what they didn't know. So, all together it has been hard because I have been putting myself out there and kind of sometimes, I feel like I am grasping at the wind. I just feel like I am spinning a lot of plates and I hope I don't drop them.

Graduate students have been students for many years and in particular, to be or act as a 'good student'. This was evident in how TAs approached their role. Their actions were similar to how students prepare for interactions in the classroom, such as reading articles, reading professor notes, and going online to prepare for presentations. Their actions were only related to being a student because they were not aware of what was required as a teacher. Through their student subject position, their experience in the classroom led them to think that reading and taking notes was the way you prepare for the classroom. Since the context was the classroom, TAs relied on their context-specific experience to inform their learning actions. They defaulted to student-oriented learning actions rather than seeking out what teaching-oriented actions they should take, such as writing a lesson plan with learning outcomes. Their student orientation was also

demonstrated through several stating their self-interest in teaching was in order to support their own learning about the content to enhance their research and courses they were taking.

Due to TAs' strong student subject position, they felt vulnerable and had issues taking on authority leading to what is known as the 'imposter syndrome or phenomenon'. Imposter syndrome is when someone feels like they are a fake and will be found out by others. Often this syndrome is attributed to taking on a new role but can exist for an indefinite period of time. TAs' feelings of being an imposter was warranted due to remaining in the student subject position and not taking on the teacher subject position. A teacher subject position is represented by an individual using strategies to support student learning in and outside the classroom.

As they took on the new role, TAs could feel their identity transitioning and shifting but were unaware that this would happen. In fact, most were actively using their student subject position because that prior experience was what they thought, and were sometimes told, would give them the foundation to be teachers. Their student subject position was related to their agency (capacity to act in an environment) and how work was performed. This caused a lot of difficulties for TAs as they struggled to make sense of what was happening due to not being aware of the role transition they had to take. TAs were forced into the teacher subject position in the classroom without prior understanding of what it meant to be in a teaching position. As discussed in Chapter 2, the transition from one position to another is not easy. This brings up the main sub-theme of *shifting identity or role transition*.

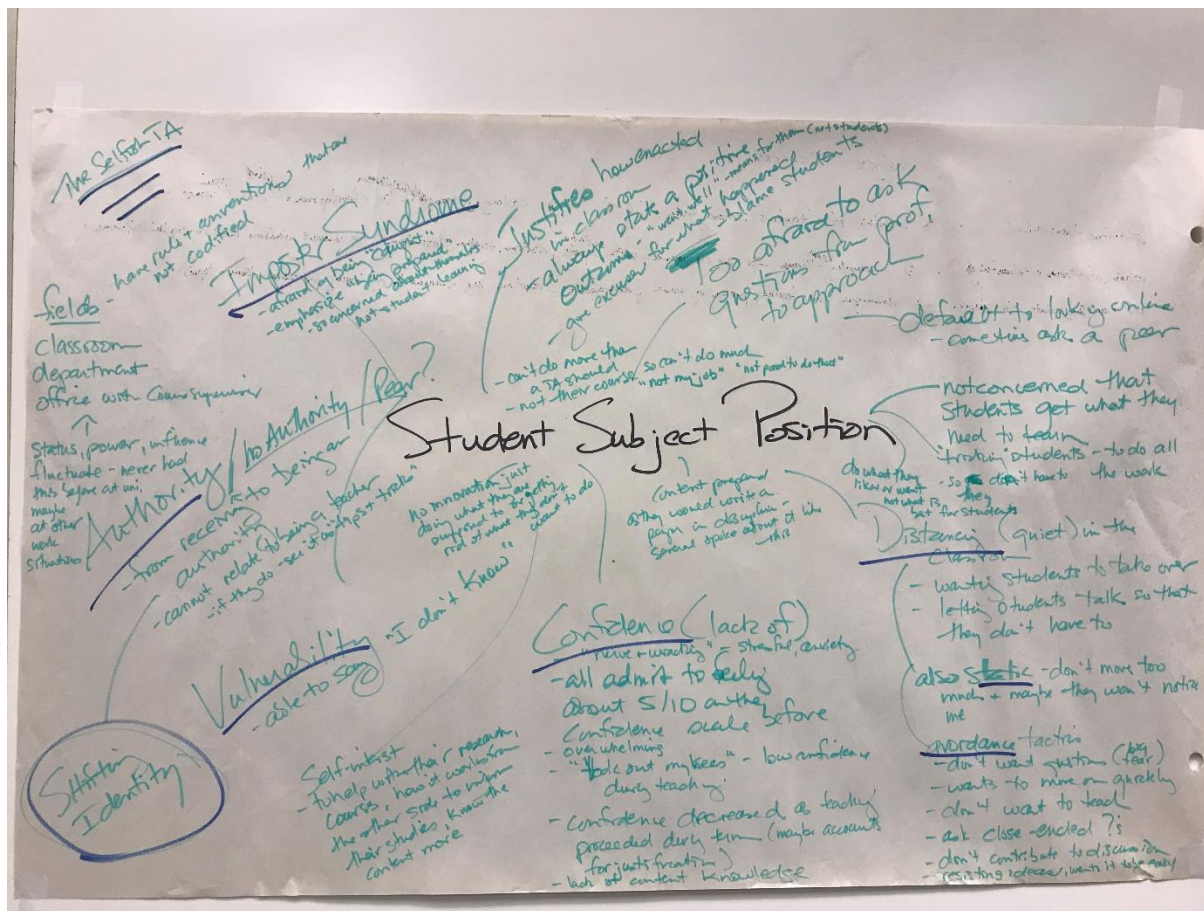


Figure 8. Cloaked in a student subject position theme.

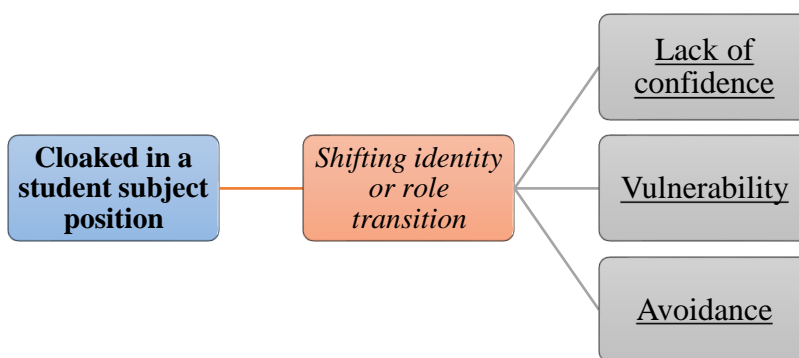


Figure 9. Diagram of cloaked in a student subject position theme, sub-theme, and descriptors.

Shifting identity or role transition.

TAs *shifting identity or role transition* is exemplified by their lack of confidence. Most admitted to feeling at about a five out of ten prior to stepping into the classroom. TAs admitted to being stressed and experiencing anxiety about their new role, feeling like an imposter, and labeled the process of learning how to teach as overwhelming. Their lack of confidence was illustrated by terms such as “nerve-wracking.” As their confidence ebbed and flowed, dependent upon content competence, interpersonal interactions, and supports provided, TAs adapted in various ways. As Alex explains upon learning that she was to guest lecture, “Oh, sink or swim, so I was excited but profoundly nervous.” Alex goes on to explain:

Intellectually I was like, hey, you can do this. Fine, you have explained [disciplinary] issues to drunk people all of the time while drunk. So, come on. It is fine! But then there was that emotional factor as well that was just kind of just nerves. I wasn't sitting there thinking about things that could go wrong and thinking I was going to do anything wrong but it was just this thing. I couldn't really get rid of it or explain why.

Sam states similar concerns: “Sometimes I will look at the lab and go oh my gosh, this is going to so hard, there is going to be so many questions, I probably won't know how to answer them.”

Quinn's lack of confidence is explained as, “I feel like I am a student in [the course].” Further, Pat conveys:

You know, how much do I actually know about my subject matter? Yeah, okay in my undergrad, I was supposed to know it but in front of a bunch of students to be able to teach the stuff? Wow, it has been a long time since I took that course. How much of the nitty gritty do I remember?

The imposter syndrome was evident in how TAs were controlling their learning process by focusing on knowing the content (and not pursuing learning about teaching), anticipating

questions, sticking to course supervisor's slides or notes, and putting mechanisms in place that alleviated this fear, such as distancing themselves (discussed below). TAs were highly concerned about their performance in the classroom and with students. For example, Alex explains the difficulty of teaching a certain subject matter:

Preparation took me a lot more [time] because [the subject matter] is friggin' hard and crazy and no one studies that anymore. I had an existential, this isn't relevant, first-years don't need to know this...to be perfectly honest, I don't totally get [the subject matter].

Alex was conflicted with having to teach content that was not relevant and considered difficult. Alex's example may be understandable but even when TAs knew the subject matter well, confidence in teaching still existed. For example, Blake, despite having significant background in the subject matter as an undergraduate and taking undergraduate classes from the author of the textbook being used in the class, still lacked confidence in teaching the subject matter. Others expressed the same issue. Chris admitted to not understanding the articles that had to be taught to students. Chris explains: "It's not that I can't read them it is just understanding them in-depth has been hard." Pat felt competent and confident teaching a particular topic but despite this, still had troubles. Pat explains:

It was kind of embarrassing, it is my bread and butter, the topic that I am most familiar with. I had reviewed the material and felt good. When I got up there, I could not make it work. I got lost in the abstractness of it in both labs. I made it through the first lab, stumbled through it and then went early to the other lab. Right when we got to that part again, I couldn't do it, I drew a blank. I got lost in the mechanics of the story and what was happening and couldn't get back to that spot to explain the effect, so both classes it took

me about five minutes to go okay, umm, give me a second, open the text book, and okay, here we go.

Even when they did feel fairly competent about content, they still lacked confidence in their ability to answer questions and provide feedback to students on assignments. Their confidence was threatened at times, such as having their “knees knocked out” during teaching due to something happening in the classroom. As Alex explains: “Combination between hard material for the students that I didn’t understand so well and not particularly engaging for the students and the video not working, all of those contributed to a decrease in confidence on my part.” Lack of confidence meant that most stuck to what they were supposed to do and did not question arranged teaching activities. Alex exemplifies this idea: “I think if I had gumption [take initiative] I probably would have sat us in a circle and had a discussion. But I wasn’t sure if I wanted to tinker with someone else’s teaching methods.” Their role confidence decreased as the term proceeded, which led to increased justification for their actions in the classroom. During interviews, we would talk about specifics that I noticed through my classroom observation, which prompted excuses that blamed students and the role. For example, TAs would state that their role did not allow them to do more or that they could not do much about that situation because of the limitations associated with their role. Sometimes, they would defend why they could not do something with comments such as “not my job,” or “I’m not paid to do that.” Blake exemplifies this by stating: “I guess in my role of the TA, I don’t want to feel like I have to explain things beyond what I should be doing in my role.”

These feelings associated with the imposter syndrome led TAs to feel vulnerable in their role. Their vulnerability related to their feelings about authority. TAs noted how they had moved from being on the receiving end of authority to now having to be an authority on content

knowledge, furthering their feelings of lacking confidence. Alex notes, “I was thinking about that [being the expert] and the transition from receiving authority and being an authority,”

acknowledging that there was a transition in process but also feelings of being vulnerable:

I started thinking about the intersection between authority and vulnerability and people often think that if you are vulnerable to the people that you think you have an authority over, then you are not an authority. I thought, that is horse@*\$. Every authority I respected the most, they have given personal anecdotes. They have acknowledged their own limits. They are people. So, I think that was really helpful in being able to say, or willing to say, if the situation arises, “I don’t know and I will ask [the course supervisor] for you.”

The sub-theme of vulnerability is connected to authority regarding content and being in control of the classroom. Despite looking forward to the authority, feeling vulnerable threatened their confidence in being an authoritative figure in the classroom. For example, Sam had a student requesting to be excused from class that brought up questions about authority:

I tried to be really sensitive because of the subject matter. At the same time, I am not sensitive about what happened in that particular incident. But then [the student] was telling me about these issues that are going on in her own town, which is unfortunate but that she has had to miss so many things because of what is going on. I think that going to school is a real privilege and she has had exceptions from the prof to miss this lab before. I wouldn’t have agreed with that so I am not going to totally agree with this. I guess I’m internally grappling with authority versus being comforting.

Grading was another aspect that required taking on authority to assess and assign grades. This proved difficult for most. As Charlie notes, “I really wrestled with myself” when grading for the

first time because of being unsure about how to approach it and how to assign grades. Charlie goes on:

If I should deduct marks for grammar or spelling, often the student would use the word “like”, informal writing, so I started with that but towards the end [of the term] I focused on whether they understood the concepts and material and can at least convey an understanding of it with what they have written down. I would ask for full sentences and for some reason they would not give me full sentences, there would still be fragments. So, I guess my marking has evolved to focus more on what they have learned rather than how they presented it. I have a feeling that may be more important.

Others had difficulty taking on any authority. TAs consistently retained their fear of relating to those that they saw as occupying higher status than themselves, including more experienced peers. Blake asks, “Yeah, so to what extent is a TA teaching? Like the sage on the stage thing?” showing the tension between how they perceived teaching and the work they were doing. Blake went further to explain:

I think having relationships with the students, like having interactions in the role of authority, has changed my perspective about teaching. When you are always a student it is an interaction with an authority figure. Now having been in that mid-point between the prof and the student, and it is sort of a cliché but before I was a TA, I was like ‘teachers are just people too and that they don’t have all of the answers and they don’t mess up or are nervous before class’, things like that. The prof one time in our TA meeting said the butterflies in your stomach, or the nerves, will never go away. As a prof she has these still.

Blake’s surprise at the professor revealing vulnerability represents the issues surrounding taking on authority in a teaching position. Most of the TAs never approached their course supervisor

with questions, maintaining their fear of the professor from their undergraduate experience. TAs would often speak of knowing and remembering how scared they were to speak to professors during that time and how this related to the students that they would be teaching. TAs mentioned this aspect with some embracing their vulnerability but most highly fearful of being in a vulnerable position.

Lack of confidence and vulnerability brought about avoidance tactics, actions that TAs took that prevented them from fully taking on authority and the teacher subject position, such as being static (not moving) and distancing themselves. TAs were quiet in the classroom if possible. TAs would admit to wanting students to take over the classroom so that they did not have to do anything and thus able to maintain their student subject position. If they did not have to actively teach, then they could be one of the students. I often witnessed TAs letting students carry on a conversation without any interruptions or contributions. When asked about it, they would freely admit that they wanted students to do all the talking due to several reasons. First, they wanted the time to go quickly so that they did not have to do too much, which meant less work for them. Second, since they were unsure of the content, it was better to let students talk. Third, they thought certain students in the room knew more about the topic than them. For example, Alex went through the slides quickly to avoid any questions and then posed a question to the class. Alex was happy because “the discussion just kind of carried itself,” allowing Alex to not have to take on the teaching role for the rest of the class. Sam also felt the same: “Sometimes, the discussion just gets going and I discard the notes because I find it useless to stop it and try and change direction,” adding that “I do like plans but, honestly, it is easier for me,” indicating difficulty in embracing the teaching role. In some classes, TAs would let students continue to talk with no contribution or guidance for up to ten minutes. Distancing was also evident in how

TAs positioned themselves behind a lectern or desk, providing a barrier between them and students, and actively avoiding eye contact with students by instead concentrating on their notes or the PowerPoint slides. During class, TAs deflected responding to student questions by stating that they did not receive that information from the professor. These types of action kept the TA in a student subject position and as someone who does not have the authority to respond. Further, TAs were physically static in the classroom making it seem like they were thinking, 'if I don't move too much no one will notice me'. I also observed deliberate avoidance tactics to ensure that they were not asked questions. Some TAs would ask close-ended questions, which were quick, easy, and still fulfilling the task they were assigned. In some classes, the TA would ask a close-ended question and a student would answer 'yes' and the TA would say 'correct' and move on thus eliminating possible discussion that the TA may have to contribute to and questions that they could potentially not answer. Sometimes, TAs would completely ignore a question posed by a student. During interviews, we would engage in discussion about other ways that this could possibly be done in the classroom, which was often resisted. They did not want to change or consider how change may make the student experience better but rather wanted to maintain their student subject position. TAs deliberately rejected what some course supervisors wanted in the classroom because they assessed it as too risky to themselves. On the contrary, I did notice one TA change from the beginning of the term to the end. Charlie's movements in the classroom became more fluid, reflecting increasing confidence. At the beginning of the term, Charlie rarely left the podium. Charlie explains:

I used to stand behind the lectern so that I could have the manual in front of me but I have been wanting to walk back and forth. I am not sure what is better for students, someone who just stands or is mobile, and a little more dynamic using a laser pointer instead of my

hand. But because I am so confident now about what is in the book, I feel like I can stray from it [the lectern], I don't need to read verbatim. So, I am trying to integrate that more.

Summary.

Blake nicely sums up role transition in this quote: “What did I learn about teaching? That it is different than being a student,” acknowledging that TAs need to transition from a student subject position to a teacher subject position—from a student role to a teacher role. Graduate students take on a new role as a TA and with that role comes certain rights, duties, expectations, status, power, influence, and standards of behaviour that are expected to be enacted with competence within the department and classroom. Sometimes roles can be clearly defined and other times can be more ambiguous, which can lead to confusion and misinformation about the expectations related to the role. This is often the case of the TA role since it changes depending on the course supervisor assigned, the complexity of the teaching situation, and the student population.

TAs enter the role lacking confidence that quickly leads to the imposter syndrome and feeling vulnerable, which initiates TAs employing avoidance tactics in their role. TAs are not aware of the role transition that they are experiencing and therefore, cannot easily shed the cloak of being a student. Some TAs noticed their shifting identity and development in the role, as indicated in the composite story that began this section and in this quote from Reed:

Being on the other side of the table as an instructor rather than as a student, I had never fully appreciated just how much preparation teachers put into the class outside of what we see in the classroom as students.

Theme 4 – On-the-Fly Teaching Judgements

Goldilocks flying by the seat of her pants

On the first day I sat everyone around in a circle and no one had done the readings, no one knew the answers that I asked, and it became really awkward in class. So, that is why I put them in small groups because people wouldn't talk in the big group. The professor likes the big group circle thing but I find the small groups actually more effective. I didn't want to sit there for 45 minutes with no one talking, so I tried that [small groups] for the following class and that seemed to work. But it is still challenging, a few people contribute and I am like yes, I can feel it, the ball is almost rolling, and then rrrrr, it grinds to a halt and deflates.

When grading, I have my own rubric and I will go through and say okay, there are five points they could get here. But if they have three points, I will give them the full five marks and that is where the professor and I differ in our marking.

I asked students for mid-term feedback on how I could improve the classroom experience and it provided mixed results. I do feel like it is a Goldilocks thing, like how are you going to please everyone. This past week I had to sub for another TA because she was sick and I hadn't really had time to prepare for this week's lesson so I was kind of flying by the seat of my pants. And I think, oh, it kind of showed a little bit in my mind, but maybe the students didn't notice.

TAs made a lot of decisions in their teaching. Making teaching judgements in the classroom is the ability to make considered decisions or come to sensible conclusions based on the context during the teaching session. TAs increasingly showed that they were able to anticipate what would happen in the classroom based on their growing knowledge of the context, which included knowledge about students, the classroom, content, and teaching strategies. TAs made decisions prior to or while teaching to do, or not to do, certain actions related to the teaching situation. Through discussion, it was evident that TAs were 'thinking on their feet' or 'flying by the seat of their pants' to respond to situations in the classroom. An important aspect

of this though is that TAs were not aware of all of the teaching judgements they were making. It was not until discussion about my observations that they were able to realize they had actually made a significant number of decisions while in the classroom.

On-the-fly judgements while teaching, shows that TAs are actively thinking, knowing-in-action, reflecting-in-action (rethinking of some part of knowing-in-action, which can lead to on-the-spot experimentation (Schön, 1987, p. 29)), using knowledge (whether explicit or tacit), and actively learning on-the-job. This is evident by their actions not remaining stable by leading to a change in planned activities. There are two sub-themes of on-the-fly teaching judgements: *unanticipated decision-making* and *deliberate decision-making*.

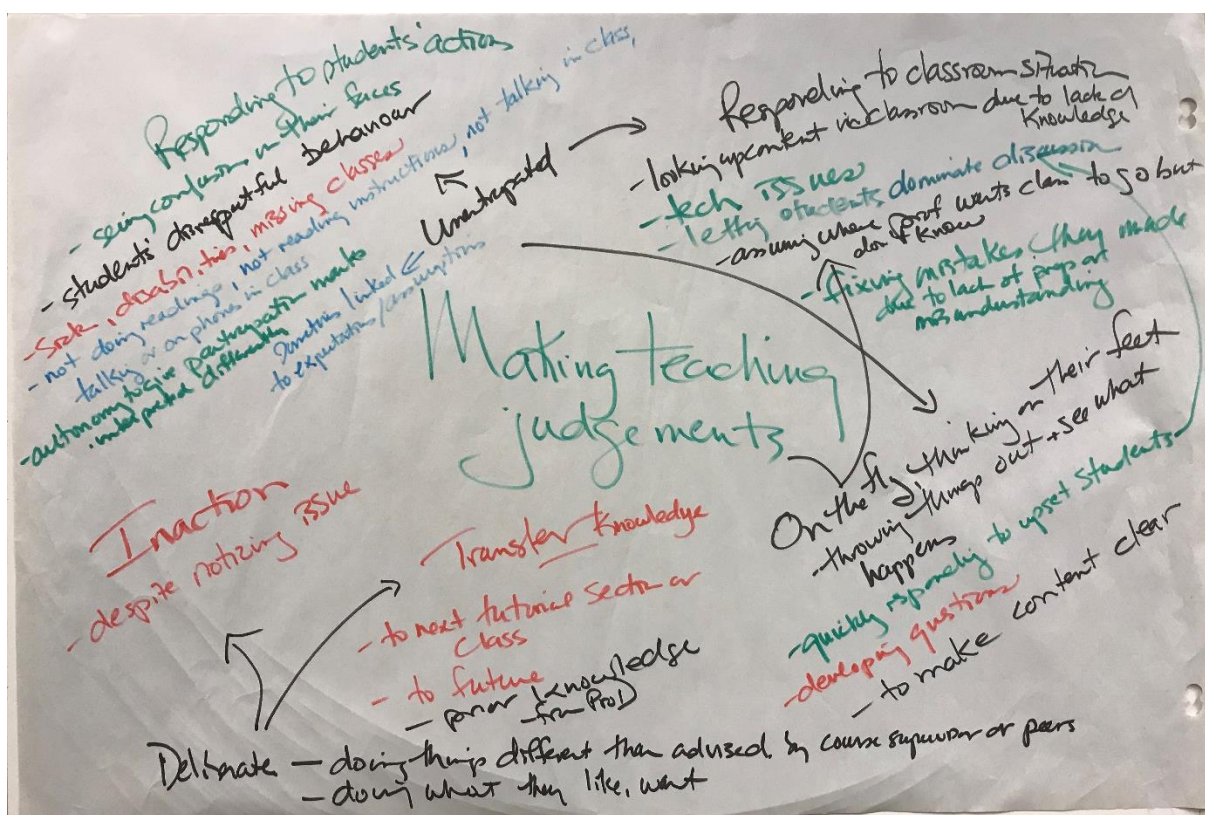


Figure 10. On-the-fly teaching judgements theme.

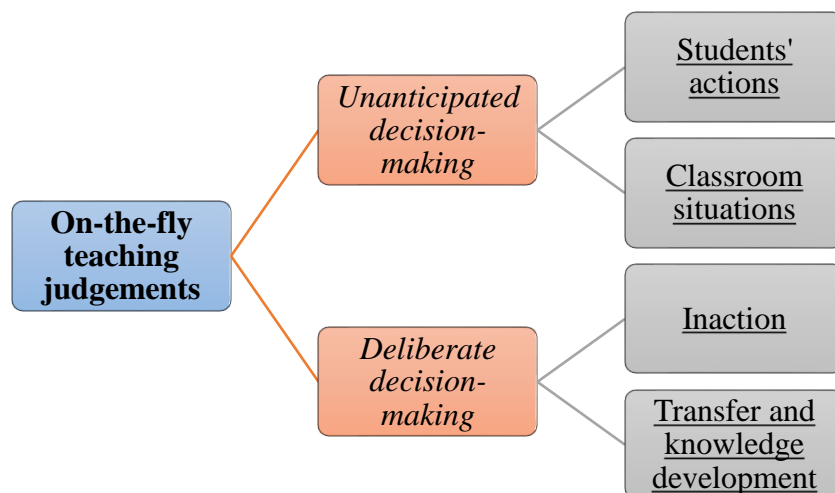


Figure 11. Diagram of on-the-fly teaching judgements theme, sub-themes, and descriptors.

Unanticipated decision-making.

Since TAs were teaching for the first time, they were forced to engage in a lot of *unanticipated decision-making* due to students' actions or classroom situations. Students' actions, such as being disrespectful in the classroom, sick, missing classes, not doing readings, not reading instructions, looking perplexed, not talking in class, talking in class when they should not be, and using cell phones were some of the situations that TAs had to respond to or make the decision of inaction. An example is provided by Reed, who was confronted with a student cheating during a test:

It was interesting to try and handle it and my first thought was how would the other TAs handle this, how would [the course supervisor] handle this? I thought okay I am going to go up and whisper to her, 'you know what, you know you are not allowed to have that up and if you have it up again you will be asked to leave' and that is all I had to say.

Alex provides another example:

Well, I think why I was able to do that [decide to bring students together] was because I was actually shocked at the beginning of the class that it took me three times [to stop students talking]. “Guys, people are writing tests, you can’t talk, I am sorry.” That was surprising to me and I don’t know if that was an authority thing, like would they have done that if [the course supervisor] was there or was it just me? I don’t know what caused that but I was pretty surprised because there was never in my undergrad education a point when a professor had to say at all when someone is writing a quiz, “be quiet,” and if they did have to say anything, certainly not three times.

A significant amount of the decision-making related to students’ actions was done based on cues in the classroom as the TA was teaching. Chris notes:

I can see their notes and that they have done the work in advance and should know what they are going to answer. One of the groups, I think the middle group, was really stuck so I stayed with them the longest because I noticed they were having the most problems in their discussion group.

Similarly, Blake states:

So, I use the main questions from class and I start out with a summary from each group. Then there are some questions that seem to fall naturally out of that and if things dry up that is when I turn to questions from the text.

Blake also relates how participation grades are determined:

Half for just being there and another half for contributing something. I am pretty nice about that too because sometimes they don’t ask the best questions but I still give it to them. And for the workshop ones, we have three of them, they get the full mark for just

going, and I let them all know that is exactly how it works. I had one student ask me right after tutorial and I told her exactly how it works.

Quinn gives another example of monitoring students' actions in the classroom that informs decisions:

I am looking to see where they are at with their work because I don't want to move on too quickly. I look around to see if they are done and working on something else, and I check to see who needs more time, which gives them an opportunity to ask me questions.

At other times, a situation in the classroom prompted action. For example, when being unsure about content, some TAs quietly used their smart phones during class to search for information about that content. Other issues were related to technology problems, fixing mistakes that they made in the present or previous class, trigger moments that affected the whole class, and discussions in the classroom. Reed states how she decided to "let them know the benefits of having engaging discussions and what they get out of it and trying to help them see that it is actually for their benefit that we are having these discussions, not mine." TAs noted several times that they made the decision to let students carry the discussion without intervening. This decision alleviated their need to engage and they were happy to let students take up the classroom time. Sometimes, they responded by just throwing ideas out to the class to see what happened. This was often due to a lack of knowing where the discussion should actually go because they were not informed or did not seek direction. The idea was that students would hopefully grab on to the thrown-out idea and carry it somewhere. At other times, on-the-fly, TAs had to develop questions and think about how to make the content clearer. In another example, when faced with perplexing student faces while teaching, Alex was able to relate to the same content and remember how difficult it was, which prompted immediate action to address the

situation. A common concern was whether students would come to class having done the required readings. None of the course supervisors put into place mechanisms to ensure that students did the readings prior to class and none of the TAs were advised on what they could do in those situations. Therefore, this fact, led TAs to rely on certain students they came to know who did the readings or assuming that students would come unprepared. Blake explains: “Yeah, there seems to be the keeners who have done the readings every week so that is good you can usually count on them to have contributions that are relevant to what I am asking.” Alex gives an example of how a decision was made to alter what was planned for the class to address an issue that was important for student learning:

I remember being in first year and the use of predicates and I am like what the *?# does that mean? So, I sort of saw that look on all of their faces and thought, oh yeah, high school grammar is not taught that well.

Sam had an incident occur in class regarding a class video that upset a student:

Just before the end of the movie I went out to check on her and I had another student who was outside because she has a concussion so she is not allowed to watch movies. They were both outside talking about the video and I think that helped her a little bit. As well, I asked her if she was okay and she said she was sad but that she appreciated the movie but she thought it was really well done. But it was a little bit sensitive for her so I gave her the option of not participating in discussion if she didn't want and instead to just write me a page about what she thought about the video. But she said she wanted to participate.

Because of Sam's action, the classroom situation was turned into a positive outcome:

She did quite a bit [contribute to class discussion] and I think she went away with more of a positive experience. She didn't seem too upset when we were discussing it and she had a lot to say, which was good.

Deliberate decision-making.

The second sub-theme is *deliberate decision-making*. TAs deliberately decided on inaction in certain situations. Inaction occurred when TAs did not know what to do or did not recognize at all that they should take action. When they did not know what to do, they were at a complete loss as to what to do in the situation. An example is provided by Alex: "Towards the end of the class you could see it was getting a little bit tense," but not enough tension for Alex to decide to step in and monitor the discussion. Quinn had students actively using their cell phones in class but even though this was disruptive to class and upset Quinn, no action was taken.

No, I never did do anything about the cell phone use. It was something I was conflicted about. I remember being an undergrad and I would never do that. You are there for an hour and you should pay attention for the hour. I didn't get to do that and it is their time. But next time I think I will say, 'hey you can be on your phones but just don't do it here, go out and talk to whoever you want, but not here'.

Quinn justified inaction by stating, "I don't think being strict with students, especially these adult students, is necessary, they make their choices, they made the right choices to be here. I guess I was very trusting of them and still will be." This decision to not act caused Quinn a great deal of frustration that eventually led to the decision to take action on this issue the next term. Alex provides another example:

No, I sort of half considered it [bringing students closer together in a classroom] but never actually went through with it. I know that I kind of considered it when I noticed there was

only going to be five or six students in class and that maybe that was not the best format for the class.

Pat, when asked if students were following the lesson, comments, “Yeah, for the most part you really don’t have any idea.” Even though Pat admits to not knowing if students are learning, Pat takes no action to do something about the purpose of the tutorials to ensure students are learning key concepts. Another example comes from Quinn, who states, “I would do [tutorials] completely differently but that is not my decision. I view myself as somebody [the course supervisor] hires, I am not the instructor.” Quinn’s example shows the resistance some TAs had to change things and make suggestions to the course supervisor about what was not working in tutorial. Quinn gives another example, clearly showing the inability to take action based on not knowing what to do with the situation:

I have some students now that don’t seem to care or they care too much. I like to call it my ‘left hot corner’ because they finish fastest but they are not good, it is a group of them. I don’t know what to do. Should I split them up, or what should I do with them. I don’t think they have a good influence on each other.

As these examples show, inaction had the potential to impact students’ learning but also whether students pass the course. Quinn gives an example that exemplifies this:

I have a few students struggling and struggling badly and I probably should have told [the course supervisor] about them and it is too late for them to drop and I don’t know if they will pass, so I am worried.

Despite most of the TAs setting high but having low expectations of students, such as not doing readings, none initiated any strategies or sought out solutions to address such issues. One TA,

who continued with the research for a second term and taught the same class, in spite of noting issues previously, decided not to suggest or make changes to support students' learning.

TAs tried to transfer knowledge from prior experience, professional development, or other sources but did so with difficulty. Most became frustrated when they realized that what worked for them as a student was not working as they expected as a TA. Some did have success regarding certain topics that they remembered as being difficult and therefore transferred that personal knowledge into their teaching by putting strategies in place to help students learn that particularly difficult topic. Most of the transfer that took place was due to knowledge development from one teaching experience to another, what McAlpine and Weston (2000) term "experiential knowledge." Some TAs taught two sections of a tutorial and were able to immediately apply what they learned in the first to the second. For example, Sam had an incident in the first tutorial with a film. In the tutorial following, Sam was able to change how the film was introduced and provide a trigger warning to students. Others, who were part of the study for two terms, were able to transfer what they learned in the first term to the second term. Reed gives an example of making the decision to change how certain materials were taught based on prior experience teaching this material:

Those concepts are on the midterm and final and discussed in lecture and asks students to apply those concepts. They really do need to understand and make connections to those concepts. Some of the articles are longer than others, one article half-way through the term is 50 pages long and we break that down in the lab and each person takes several pages and they read them and prepare a short presentation. I didn't think that was particularly effective last term because some people do not have good presentation skills and students aren't paying attention and you should be paying attention because this is going to be on

the midterm and final. So, this term I told them to email me their notes and I put them all together in one-word document so that students could use them to study.

Pat gives another example:

In general, just things I have learned about presenting and being less lazy on the board [making sure all information is on the board for students], giving at times more time for questions and kind of learning the state of each class. Both classes are distinctly different, and knowing how to approach each one differently, not a huge difference, but how to ask them questions and probe them deeper. It's picking up on differences and acting on that.

As an example, when discussing presentations students were giving in tutorial, Sam notes the following:

The first group, I think they were a bit frenzied it seemed and very last minute and it was a week after their midterm and people did not get the best marks so I think they were really stressed about that. So, I emailed the second group and told them that I hope they will take what worked and didn't work in the first round of presentations and use that to inform their contributions. So, I hoped that helps but mostly I have been sending a lot of emails, which I didn't do at all in the beginning but I have been reminding them and stuff like that.

As is evident, TAs were actively trying to figure out how to teach content better and decided to teach the content differently based on what they were learning on-the-job. For most, the way that they were guided to teach the material was not working in practice or they disagreed with methods suggested. Chris, building from the knowledge that was being developed, deliberately altered teaching in the classroom to try and find a better way to teach the content. For example, Chris utilized drawings and graphs on the board to help explain confusing concepts, showing

active thinking processes on-the-spot in how to best teach the content to improve student learning. The decision to do this was based on monitoring student cues, as Chris explains: “Yeah and there was confusion over it too because one said they interpreted this way and another, another way.” Chris explains other decisions made to support students’ learning due to Chris’ growing knowledge about teaching:

I think it actually hinders them by only focusing on one [question] but the questions are so big and broad that you can’t answer all of them in tutorial. I noticed that my other professor in tutorial, assigns two or three questions and we can’t even get through those during tutorial time so that is why I had to divide them and I find that more effective. The questions are more complicated then you perceive so I think if you can concentrate on one question in depth, it is more valuable than on a whole bunch and can only get a surface understanding of the question.

When observing Chris in the classroom the second time, I noticed Chris was effectively guiding students through continuous questions. Despite students not responding to questions, Chris would rephrase or provide a different question, which was eventually effective. When mentioned, Chris responds with, “Oh good, I didn’t know what to do but I didn’t want to give them the answer, so I continued with questions.”

Pat has the following example:

One thing that I have worked on doing differently is being less lazy on the board. I have had a habit of really abbreviating things, or actually skipping steps. But really going through the full processes to a degree that is going to be an instrument to help them, so that they visually have that there for them.

Reed states how TAs in the course were learning together and implementing change:

We decided as a group [TAs] that we wanted more engagement in the second half of the semester, so we have more activities that are not so structured and more opportunities for discussion. But if they are not willing to discuss, you end up going through the activities quicker and end up finishing the lab early. They are not getting the full experience out of it so it is challenging. I was thinking about it on the way in because it is really pushing my facilitation skills of discussion and I can see that it is a two-way street. They have to be willing to participate as much as I am capable of getting things out of them and getting them involved. It is challenging, and it was good in the sense that yes, a few people did contribute and I am like yes, I can feel it, the ball is almost rolling and then it rrrrr (grinds to a halt) and deflates.

Pat gives another example of making a decision based on knowledge about the course and midterm:

In that one [lab session] I don't think there were any surprises. I did jumble the questions on this one because I looked at the questions beforehand and I knew which questions were the more important ones for the midterm. So, I worked through the lab in the reverse order from what it had said and that was just because of looking at the material and realizing that the last questions are the ones that we need to cover. Those questions had the highest value to students for the midterm material whereas the first two questions were more kind of theory questions. So, we did the last two and then went to the first two.

TAs growing knowledge of learners also provoked decisions. Sam provides an example:

My other class is quieter so I do often think about this ahead of time because they usually don't have anything to say. So, I try to ask questions that are a bit more specific or give

suggestions and get them to elaborate on it. Sometimes no one has anything to say so I try to change the subject or do something else.

Content also activated making changes in the classroom, as Sam explains:

Yeah, I guess I kind of expected it [an issue regarding content] but I wanted the sort of weird things to come out. I wanted them to think about where this [content] came from and be more critical about it. So, I kind of went into it blindly, hoping the discussion would go organically. Because we got that email from [the course supervisor] saying that a student was really upset, I was mindful to make sure I did not make [the topic] sound super positive. It definitely helped having that in mind and not having anything specific in mind.

Deliberate decisions were also made due to TAs requesting feedback from students to make changes. Reed explains:

I gave them all blank pieces of paper and said to them, “As an instructor, I am looking to improve my skills so I would like some formative feedback at this point in the semester, what is working in the lab, what is not working, are there things I could improve upon or change, I am totally open to hear it all.” Most of it was positive and the feedback that I got, and let’s say out of 16, four of them gave me quote unquote negative or constructive feedback and out of those four, maybe one or two stated they wanted more freedom to go at their own pace, someone else said no, you are going at the right pace and then someone else said it is not enough time. I do feel like it is a goldilocks thing, like how are you going to please everyone.

Summary.

Despite difficulties with transferring knowledge, TAs were in a position with a lot of autonomy to make teaching decisions with most being on-the-fly and unanticipated. TAs were making a significant number of decisions during each teaching session. Decisions TAs were making were primarily related to monitoring students rather than themselves. The majority of those decisions about students were related to classroom activities that were negative in nature and either forced or challenged the TA to take action. Examples of negative activities included trouble getting students to talk, keeping students on task, and managing group work. Sometimes they were unaware of how many they were actually making but through discussion about my observations in the classroom, we were able to identify the decisions they were making. Without any background in pedagogy but by closely monitoring students, TAs made a significant number of decisions to increase support for students' learning. Their growing knowledge development about their students was informing their decisions. As well, TAs were problem solving about how to teach content in a more effective way. These teaching decisions were prompted by unanticipated events, such as students' actions and classroom situations. Alternatively, TAs deliberately decided to not take action on some issues. These teaching decisions were often against how they had been advised by a course supervisor or experienced TAs, or the decision was due to student feedback.

Theme 5 – Diverse Affordances

Great, overwhelming, okay

TA 1: Hi TA 2. I haven't seen you since the TA Conference. How is your TA work going?

TA 2: Great. I met with my prof early and we had a great conversation. He was clear, I knew what I was doing and had a roadmap for the semester. I went into TAing with so much confidence, even though this material is new to me and difficult to teach but I was confident

because I knew where the course was going. I have a really supportive course supervisor and we have a course team, who all work together and support each other. In class, I can answer all of the student questions because I feel like I really understand what the purpose is of their learning not just what the answers are supposed to be but the reason they are learning it and how it connects to the course content and I think that just comes with everyone being so involved in every step of the way. I feel like I am learning so much. How about you?

TA 1: Oh, a different story. I believe this is the profs first time teaching this class so he is figuring out how to use the TAs, how to use everything. I totally understand that but how is a TA to facilitate a learning environment when there has been no reach out or anything and I always have this feeling that this is not right. But it doesn't feel right to go up to him and say 'this isn't necessarily the best, could be improved upon, not bad necessarily' but there is no relationship to build off. He did not give me instructions at all, in fact I had to prompt him like so, are all of these PowerPoint slides what you want me to go through, and he is like oh yeah. So yeah, he really didn't give me a lot to go on, he just gave me the slides and readings that the students did, and said teach it, ha ha. I feel that the type of relationship we have is independent. He doesn't really want to talk to me. I am just another stress for him. Therefore, I am finding it an overwhelming process.

TA 3 walks up: Hi TA 1 and TA 2. How is everything?

TA 1: We are discussing how different our experiences are with our TA work. How is your TA assignment?

TA 3: It's okay, non-eventful. The course supervisor asked if I wanted to read the textbook and he even put time into my hours so that I could read the text. Then when I mark the tests and exam, I understand the material. He is pretty hands off and only talks to me before grading

student assignments. It is not mandatory for students to come to tutorial, so sometimes I only have one student. Tutorials are a waste of time.

Workplace affordances (opportunities) are the degree to which a person is invited in the workplace to access resources and work practices that can greatly influence learning. If workers have restricted support and opportunities, they are not encased in a learning environment.

TAs' course supervisor was the primary person that informed TAs of their work expectations, such as attendance at meetings, how and when to contact the course supervisor, or when grading would be due. Typically, TAs had an initial meeting with their course supervisor where the duties and expectations were discussed. What all TAs lacked, was how their work performance and progress was to be evaluated or measured. Not having a mechanism in place to review their performance, TAs were not aware of how they could improve their teaching role. None of the TAs were guided as to how well they should do in their work, provided with a learning plan, or how their work would be assessed by the course supervisor or department. This meant that TAs did not have a clear pathway of development, learning plan, or trajectory. Since TAs did not have a learning trajectory laid out, there was no process to assess and measure how well TAs were learning in their new role.

In this theme, affordances took the form of learning conversations, instruction, mentorship, feedback, and resources from the course supervisor, department, or others that went beyond PowerPoint slides or texts. Affordances offered determined if TAs were restricted or encouraged to learn. Affordances make up the learning environment and influence learning how to teach, the subject position, and teaching judgements made. Since course supervisors are who TAs are assigned to, this relationship often determines the breadth and depth of support provided

to TAs as they embark on teaching. Eraut (2007) emphasizes the importance of relationships when learning a new position.

In this theme, there were five sub-themes: *restricted support*, *strategic support*, *expansive support*, and *barriers*.

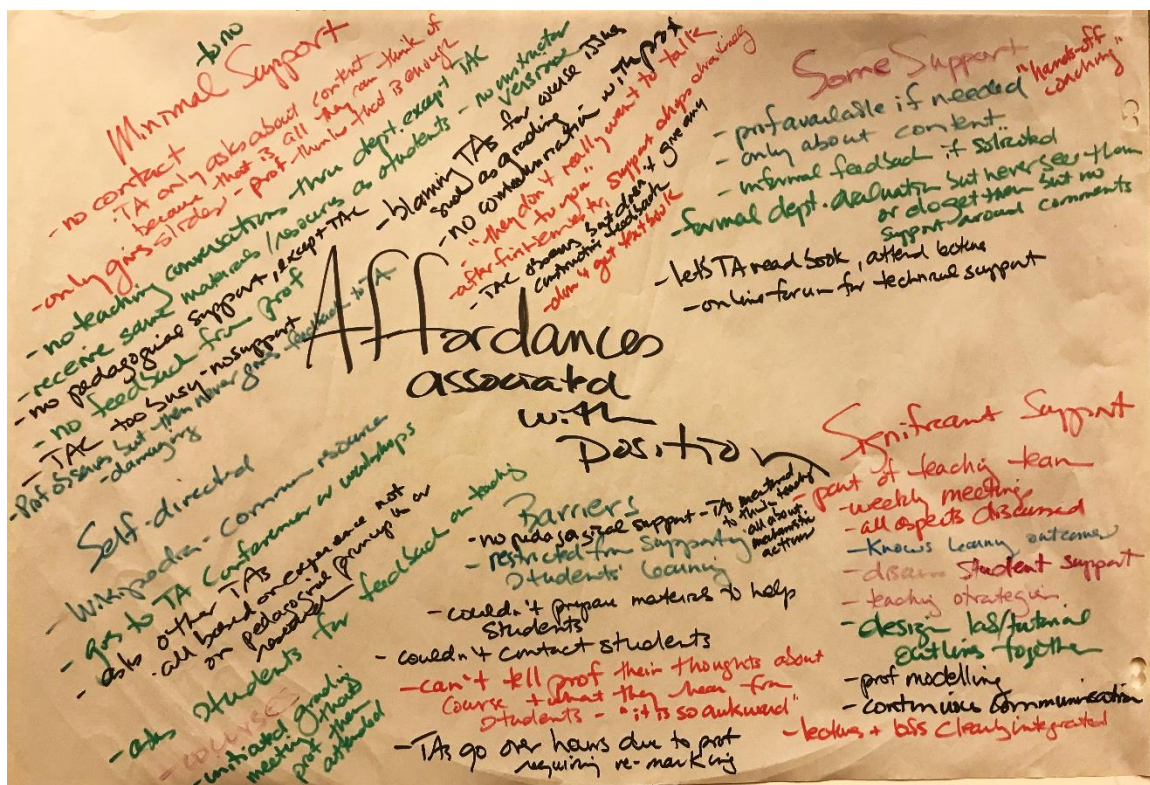


Figure 12. Diverse affordances theme.

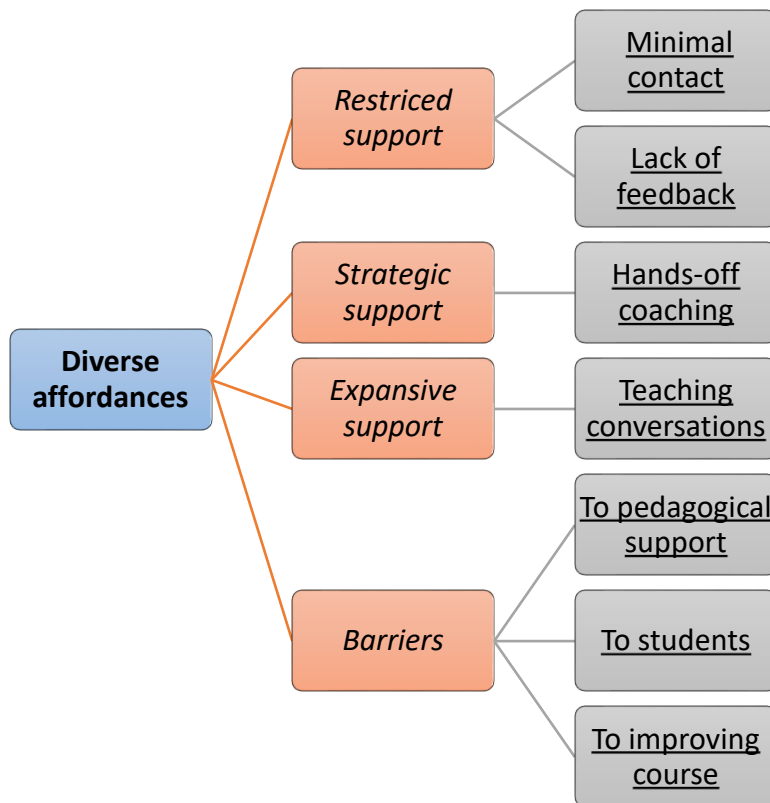


Figure 13. Diagram of diverse affordances theme, sub-themes, and descriptors.

Restricted support.

In the *restricted support* sub-theme, TAs had limited access to the course supervisor and resources. To begin with, TAs had various experiences of induction with most feeling that they were lacking sufficient background and orientation to working at UVic. For example, several TAs mentioned that they did not receive pertinent information, such as how to take care of photocopying for the course and where to get keys for the audio-visual cabinet in the classroom—both of which were required for their TA work. Other TAs noted that they received minimal information about working at the institution and it was not until they were doing their work that they realized they were missing crucial information. Despite all having access to professional development activities, interaction was minimal and non-existent for some.

Departments did not require TAs to take part in mandatory instruction, which sent a message that instruction was not necessary.

All TAs had basic knowledge about the course level (first-, second-, or third-year), who their course supervisor was, and some sort of description of potential duties that was provided by the department when they were assigned to the TA position. However, when I met with TAs prior to stepping into the classroom, most had not yet met with their course supervisor and were not sure of the work required. In this sub-theme of restricted support, TAs had an initial meeting or communication with their course supervisor as the sole face-to-face support. Chris explains how some TAs distinctly felt, “They don’t really want to talk to you,” indicating that the course supervisor wanted minimal contact with TAs. Another example comes from Alex, who states, “I did ask at the beginning of the semester how often should I be checking in to see how things are going, checking into the class and he is like ‘never’.” Alex explains further: “He is pretty aloof and doesn’t want a lot of interaction with his TAs, sort of sink or swim.” Chris states:

I feel it is very me oriented, I just kind of do what I feel is appropriate and if I don’t understand anything, I would go to the course supervisor but usually I feel that the type of relationship between us is independent. The course supervisors don’t really want to talk to me because I am another stress.

Further, Chris laments:

Yeah, they just dump you in with these first- and second-year students, which I think are smarter than me. These PhD professors they don’t know everything but they think you should know everything about everything. It is very stressful every Friday that I have to be so prepared.

These comments show how TAs are lacking support that results in stress.

Besides the absence of communication, materials to support their teaching were also lacking. Alex received slides, information about students' disciplinary background in the course, and no further support. Others received the same materials as students did for the course, the lab or tutorial manual, but not an instructor version or other material to support their teaching, or knowledge of how it connected to lecture materials. Pat gives an example of this dilemma:

No, and that is where it was really difficult. I had the text book and a loose guide of covering this chapter. And even in that, what part of the chapters were emphasized, what weren't we covering, was not explained. So, that was tough and there would be times when I would be going through something in detail and they [students] would say, 'I don't think we are covering that part', and I would be, 'Oh, I thought that would be a very important part but okay'. So yeah, made for a difficult time in that sense.

Due to the limited resources provided, TAs would occasionally need to reach out. But TAs rarely contacted their course supervisors with questions related to their work, either due to fear of bothering them, or because of being instructed to not contact them. Blake gives an example of the hesitation TAs felt when reaching out for guidance:

I sent out an email today but I don't want to be that new TA who has all the questions, but I think my reasons for asking that are totally valid, you know, and wanting to make sure that all TAs are approaching it the same way. I did address it [the email] to the professor as well because when we [TAs] were meeting to discuss the marking [the course supervisor] wanted to be there and be part of our group conversations. So, I did feel like it was appropriate to include her in the email, and after getting the response, a brief response, she did answer all of my questions, which is totally valid. I was like, oh I hope it is okay, and I am not being that super needy TA.

As Blake's comment suggests, when communication was not encouraged, TAs felt bothersome.

Due to limited contact in this category, TAs were not encouraged to seek formal instruction about teaching, or to have someone observe their teaching to help guide and improve. Reed explains, "We did not have observations done by the course instructor, which would have been helpful. So really there was no opportunity for feedback from TAs or the instructor, so it was like sink or swim." Lack of feedback was a common occurrence for TAs, whether after an observation or just on a whole about their work as a TA. A few TAs had formal department issued student evaluations but did not receive support when they received their student ratings and comments. In these evaluations, TAs received suggestions on how to improve, with some comments being quite hurtful. Receiving these comments after their first teaching assignment was difficult. TAs would have benefited from having someone with experience help explain students' comments.

TAs in this category continued throughout the term to be unaware of how their work would unfold, reasons for doing certain work, and in general, a lack of knowledge about how their work fit into the course and students' learning. For example, by midterm, despite knowing that grading was required, some TAs had no idea what exactly needed to be graded or how that would occur. Despite knowing their assigned duties, TAs did not know what was required to do that well nor how they were going to be measured. Therefore, low expectations about their teaching were conveyed to TAs, since they did not have a clear learning trajectory and no workplace assessment to assist in their development.

Strategic support.

When TAs had *strategic support*, it took the form of hands-off coaching. Some TAs were encouraged to contact the course supervisor at any time if they had questions. Therefore, TAs did

contact the course supervisor, usually through email, with questions they had about students or the course. Sam provides an example of this form of support:

I usually prepare the day before to get an idea of what is happening so that if I do have questions I can pop into [course supervisor's] office. We are lucky that he is really involved in it and he wants us to go to him whenever we do have problems, so that helps a lot.

Another example of strategic support is provided by Chris: "One of my instructors asked if I wanted to read the book and he even put that into my hours so that I could read the book, because then when I mark the papers, I would understand." One course supervisor set up an online forum so that TAs could problem solve technical issues related to the learning management system of the course. At times, some of the course supervisors would reach out to TAs with specific information pertinent to the work. Sometimes an experienced TA associated with the course would model tutorials or labs or be available to discuss an upcoming tutorial or lab, how they were going to teach certain topics, talk about classroom issues, and/or discuss grading.

Even if a course supervisor did set up fairly consistent meetings, these meetings were usually about practical or administrative issues (strategic) related to the course and not always about teaching. Quinn provides an example, "Our meetings don't usually discuss that [pedagogy]. We would go through the assignments but not how to teach." Hands-off coaching also meant not providing TAs with feedback, unless the TA specifically asked. One TA had the course supervisor observe but was never provided with feedback or any comments. Three TAs received rubrics to help guide their grading that were developed for TA use. Some course supervisors informed TAs of the grade average that they expected to help guide their marking.

Expansive support.

When *expansive support* was provided, TAs felt like they had ample support. One TA, Sam, had a clear idea of the structure of all of the TA work components for the whole term: detailed lesson plans, grading distributed throughout the term with clear rubrics, components of the course succinctly linked together, and a strong schedule of continuous TA support. Sam felt part of the teaching team comprised of the course supervisor and three TAs engaged in teaching conversations. These conversations typically took place weekly and would involve all aspects of the teaching and learning situation with the course supervisor modelling how to support student learning. Sam explains:

I have already met with my prof, it was great, we know what we are doing, we have the roadmap for the semester and I am going into it with so much more confidence, even though this material is newer to me and more difficult to teach. More confidence because I know where we are going here forward and that makes a big difference.

From the beginning, Sam was encased in a learning environment due to the course supervisor's pedagogical and team approach to working with all responsible for the course.

Well I am really lucky because [course supervisor] is the professor and she is fabulous. It is very different from last semester [different course supervisor] because we meet every week to talk about the course in general and what we are going to be doing each week. As she creates the lab, she asks us for our input, such as if we think things will work or not which is really great because I can answer all of their [student] questions. I feel like I really understand what the purpose of their learning is and not just what the answers are supposed to be. I know the reason they are learning it and how it connects to the course content. I think that just comes with everyone being so involved and involved in every step of the way. She usually creates a lab outline and then sends it around as the first

draft. It will have learning outcomes and key concepts and themes that they are going over in the lecture and then asks us to go over it and have any suggestions. If we see anything, whether it is grammar or something that we just think won't work, she asks us to give her input over the next few days. Then she posts it online for students. So, before they see it, we get to go through it and see if there is anything we were not expecting or just doesn't make sense, since we are the ones who actually teach in the lab.

As Sam explains, the teaching team would engage in conversations about the best way to teach the content to maximize student learning. As well, TAs would be aware of the learning outcomes at the course and lesson level, would help design the lab/tutorial outlines, and could see how lectures were connected to their labs/tutorials. These teaching/learning conversations would also address more practical matters, such as administrative and management issues about the course. Additionally, the team would discuss students in general but also specific students that may need additional help and how to best support them. In essence, Sam confirms that communication was key: "We all know that if something a little strange comes up or we anticipate something coming up, we have a really strong communication chain and we send it out so that everyone is aware."

Other TAs felt that aspects of their TA work were expansive. For example, Chris shares,

He was the best professor for marking. He was really clear in what he wanted. He would get them to pick topics and then back it up with arguments in advance. Then he would review everything I did. So, he was really good.

TAs also had informal contacts that provided expansive support. They would reach out to them to ask the occasional question about content or student issues, share frustrations, seek emotional support, and/or for advice. Sam provides an example:

My [graduate student] cohort, we have a good sense of community, so after [a graduate seminar they all take] class we will all go out for a burger and beer and talk about things and come up with ideas and that helps. There are a few people who did their undergrads at UVic who took this course as well and they tell me about their experiences.

Sam also shared:

I have also met the TA who did this class last year so she is a really good resource. She sends us examples of things that students did last year, which helps us with what we are expecting. Her office hours are right after mine, so I see her once a week and we chat a little bit which helps.

The above shows that out of the nine participants, one TA had expansive support. Affordances for Sam were high. One other TA had an aspect of their work expansively supported.

Barriers.

Overwhelmingly, there is one point that stands out about affordances: the lack of pedagogical support, which creates a significant *barrier* to TAs learning how to teach. Course supervisors did not engage TAs in pedagogical conversations, except for the one TA that had expansive support. If TAs initiated any questions, they were about practical matters in the classroom or about students. Another barrier was the restricted access some TAs had to students. Some TAs were told that they had to restrict contact with, and support for, students. TAs were reprimanded if they tried to support students' learning, especially warned not to 'spoon-feed' students by giving them hand-outs or extra support to help them learn the content. Additionally, some TAs noted discrepancies regarding students' assignments, arguing for student grades to be increased. Alternatively, some TAs were restricted from holding office hours or connecting with students, except in the classroom. Lastly, TAs were aware of issues in the course but felt that

they could not bring these to the attention of the course supervisor to contribute to improving the course. Some TAs felt quite awkward knowing this information but not being able to do anything about it.

Summary.

The affordances provided to TAs were highly diverse. Only one TA had expansive support, with the remainder of TAs having restrictive or strategic support. Minimal contact and no feedback did not provide a learning environment for TAs. Those that had strategic support, were provided with hands-off coaching that was aimed at completing the work assigned but did not provide a learning environment. Because of this lack of affordances and fostering of a learning environment, TAs found TA work to be challenging. As the term increased, TA work that was already considered challenging became over-challenging, especially for those with restrictive support.

Theme 6 – Discretionary Reflective Practice

Lofty ideals can be a hit or a big fail

I wish I had the time to put together a concrete plan of where we are. This is what we are going to go through this class and actually create a good teaching plan for that but I don't have the time right now to do that. So many times, over the term, I thought, I wish I had the time to do that. I mean, I thought for the most part all of the students taking this course would be on the same page because there are a lot of issues but it is not black and white. Most people think the [topic] is good. So yeah, teaching it [topic] has opened my eyes to the fact that there are more issues than we necessarily think about. I also noticed that when I asked a question, it was often met by dead silence. I think there is a tendency for students to sit back in their chair and let the learning wash over them instead of being actively engaged to let the learning stick to them. Then,

in the student evaluations, students said that I couldn't answer questions, but sometimes I could but I just wanted them to talk more because I didn't want it to be an hour of me talking because I know things. Maybe that is my fault and a communication thing. I want to convey that to students in the future. Yeah, they [course supervisors] just put you in and you are expected to do well. They have high expectations of you but you can be a hit or a big fail because you go in with lofty ideals and you think everything is going to be grand!

In the context of this research, reflective practice is the ability to reflect on actions to engage in a process of continuous learning. In this theme, any evidence that the TA was thinking about what happened prior, during, or after teaching that may inform future teaching related actions indicated a learning process and the process of building knowledge.

Reflection-on-action means thinking about how the teaching event can be changed after the event. "We reflect on action, thinking back on what we have done in order to discover how our knowing-in-action may have contributed to an unexpected outcome" (Schön, 1983, p. 26). By reflecting on action, TAs were showing evidence that they were involved in a learning process about the situation that may impact how they teach in the future. However, some TAs did not reflect, even when prompted during interviews. By not reflecting, TAs were potentially not learning, unaware of their own learning, and/or did not know the relevance of what was occurring in the teaching situation. If TAs were reflecting, they were questioning and criticizing their actions, analyzing situations and incidents, and trying to solve issues. The sub-themes in discretionary reflective practice are *learning about*, *questioning*, and *lacking*.

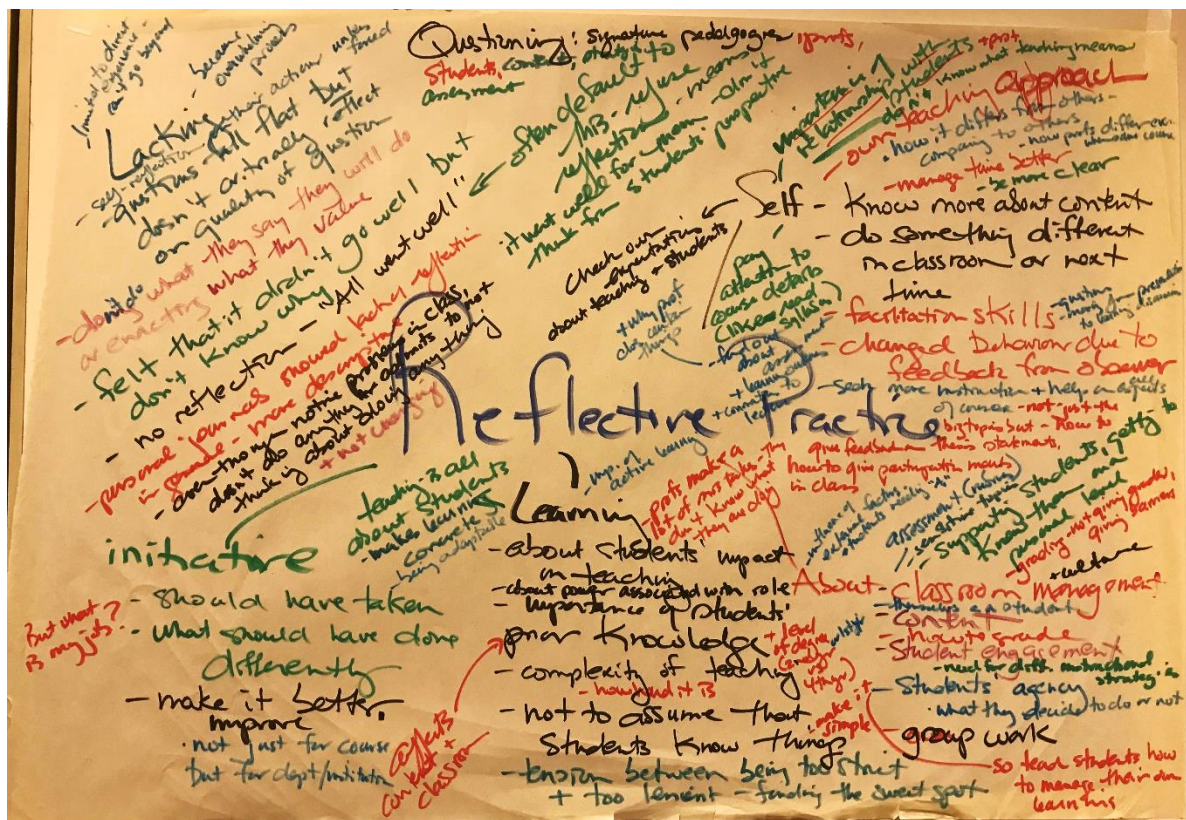


Figure 14. Discretionary reflective practice theme.

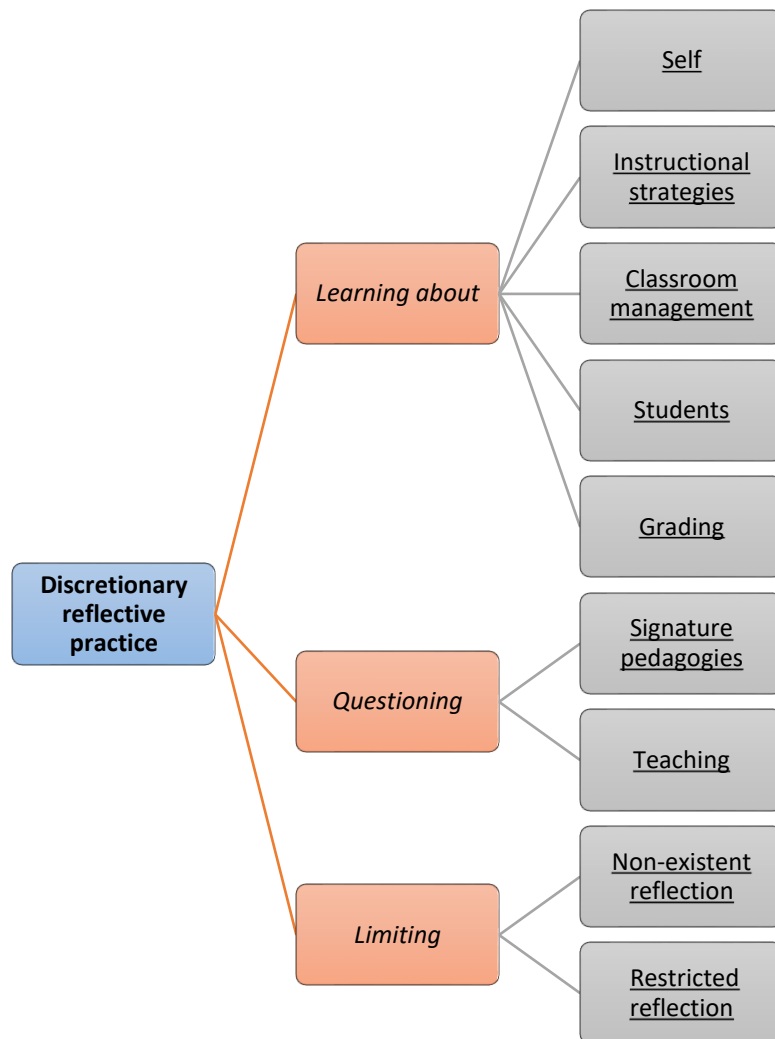


Figure 15. Diagram of discretionary reflective practice theme, sub-themes, and descriptors.

Learning about.

Learning about sub-theme was about the knowledge TAs were developing about teaching, primarily comprised of practical knowledge. In this sub-theme, TAs were learning about themselves and factors that affect teaching, such as instructional strategies, classroom management, students, and grading. What is important though is the distinction between what TAs learned and what they learned they needed to know more about.

TAs' reflections were often directed inwards. These reflections about the self were about content knowledge, teaching approach, and skills. Content knowledge was an important

aspect related to TAs' reflections about their expertise. Often TAs would acknowledge that they did not feel like they knew enough about the content they were charged with teaching and that they should have done more to increase their content knowledge. Still, sometimes TAs acknowledged that the material was just hard and not engaging for students, making for a difficult teaching situation. Other times, it was because of a TA admitting that time did not allow the opportunity for the TA to learn more about the topic or what was required for that teaching session. At times, TAs were confused about the content that the course supervisor was providing in lecture and how it was connected to what they were doing in tutorial or labs. Often TAs did not know what was occurring in lectures at all or what content students were being taught. On the contrary, all TAs commented on how much they learned about the content by having to teach it, despite sometimes feeling that they did not know enough. Pat explains: "I have learned so much more about the material. Before it was kind of there and ethereal and now it is so concrete for me." What they did know about the content was confirmed through the act of teaching.

Development of their own teaching approach and how it differed from others was another topic regarding self. Learning about different teaching approaches was also directed at course supervisors and how they differed from each other and from the TA. TAs often disagreed with the course supervisor about strategies to use in tutorial/lab or ways to resolve certain issues. These differences extended into assessment, relationships with students, and how to support students' learning. By comparing themselves to course supervisors or other TAs, helped them develop their teaching identity. Quinn provides an example:

[The course supervisor] told me, 'you should tell him [a student] to leave and that he is getting a zero'. I respect her opinion a lot, she has a lot of experience, but I won't take anything she says as complete 100%, undisputable. I am developing my own teaching style

and maybe that style works for her but won't work for me. I don't interact with students in the same way. I try to be as nice as possible.

A significant amount of reflections about the self were about practical matters and skills that they could develop to improve their teaching. This included skills about facilitation, grading, and asking questions that were aimed at doing things differently in the classroom for that course or in future classrooms. Quinn realized the need to develop skills about dealing with confrontation in the classroom: "I didn't set the standard; I didn't set rules of what needed to be done." Some TAs had the benefit of an experienced TA observing their teaching, which resulted in the TA making changes to their actions in the classroom, such as writing learning outcomes, facilitating better, and engaging students more. Upon reflection, they realized that they should have sought more instruction about teaching and help with all aspects of the course, leading them to realize the value of professional development.

TAs identified learning the most about instructional strategies. Though, the majority of what TAs learned in this category was about what they needed to learn about for future teaching. First, TAs realized that they had to let students do the learning. As they thought about how to do this at the end of the term, they realized instructional strategies that could help. For example, TAs realized that lesson plans that provide learning outcomes, active participation of students, and classroom assessment, were essential. This type of structure would provide them and students with clear expectations and details to help support their learning. Yet, they acknowledged that even though it is important to have a lesson plan for themselves and students, it also has to be flexible to meet student needs and more importantly, to allow for learning conversations to occur and develop, rather than be stifled. Sam gives an example of learning

about instructional strategies: “I learned that it is best to pull things out of students, like make them teach themselves, instead of just telling them things.” Reed gives another example:

I think the big thing is more dialogue with students, I am still working on this. Different ways of inviting students to participate and set the tone at the beginning, that it is a very participatory environment and their contributions are very valued. I think that is the biggest thing.

Again, from Reed:

I think it is better to begin with think-pair-share to warm up to the discussion rather than jumping into a classroom discussion because whenever I do that it falls flat because they have been sitting there and I have been doing a lot of the talking and then when I ask, ‘okay what is your opinion’, it is mute. Maybe if I had done that differently said share with your partner, share with the person beside you, what strategy did you use and then go around, I feel like that might be more effective.

Another area that TAs identified was knowing if students were learning in the classroom, which prompted the need to learn how to conduct classroom assessment.

As TAs were teaching throughout the term, they were able to immediately implement some aspects of what they were learning. For example, some TAs realized that they did not know how to begin a lesson. After a couple weeks, they tried some strategies to engage students. Quinn provides an example, “I said hey, I should learn how to start a lesson, this is something I need to learn... so I started bringing in things from the news, things that were popular.” Another example relates to asking students questions. TAs often faced silence when asking questions in the classroom and actively sought out strategies that would help. Charlie, upon reflecting on the term and thinking about the next, comments:

The other thing you said was to have a follow up question or break down questions. So, this next semester I would like to try that and have more of a learning discussion rather than just a presentation at the beginning.

TAs also learned that having multi-modal ways of illustrating content was effective in supporting students' learning.

Different aspects related to classroom management were often mentioned and their role in developing a safe, active, learning environment in order to achieve the learning they expected in the classroom. TAs realized how important the environment of the classroom is in supporting students' learning. In maintaining a supportive learning environment, having students actively participate in planned activities and contributing, was vital. When TAs faced challenges in the classroom, they were often stumped as to what to do. This was another area that TAs identified needing more instruction about how to work with different challenges they face in the classroom.

Alex provides an example:

I missed some hands up on the right side of the classroom because of where I was standing because I was compensating for being on that side and facing the other side but obviously missed a couple questions from the student sitting on that side of the classroom. Something, I want to think about more in the next class.

Another example comes from Blake:

I am going to try and learn from this [teaching] and learn to do it differently and be really clear as to my intentions as an instructor and the classroom functioning. I think I intended to do that this year but I didn't make it as clear, like maybe I would give some examples and analogies.

Blake continues:

More icebreakers, I want to get to know students' names sooner, I think it is good to have a few minutes of unifying time at the beginning of the session, and I probably would attend a few lectures, especially at the beginning of the term so students see me once or twice and get a sense of what the prof is teaching.

Reed reflects:

I feel like I can improve on my marking skills, feedback to students, and self-awareness as to what is working in the room, my preparation, getting more feedback from students, being more specific and clearer with my instructions. I find myself wandering and it is succinct in my head but it isn't coming across.

Alex provides another example:

What I noticed in both the classes, when I asked a question, it was often met by dead silence and I think what I would do in the future is say turn to your neighbor, discuss it and then have discussion. Like I said earlier, [discipline] is learned through talking about it, so I don't think a lot of people would have formulated their positions on that before they have a chance to talk about it for a minute or two and discuss it with somebody else, so there probably would have been more answers to that.

Another challenge was student boredom. Despite knowing that students were bored, it was not until receiving students' comments at the end of term that they realized the extent of the problem and that this was something they would have to act on in the future. Student boredom led to classroom management issues, such as students socializing during class and waning interest in the course.

TAs commented on the extent that they learned about students. Foremost, was characteristics of students' learning. They found that students were optimistic, lacked critical

thinking skills, and neglected homework. TAs learned about the diversity of students and to not make assumptions. TAs made assumptions about what they thought students would know, which led to frustration on their part and lack of support for students. Instead, TAs noted that they learned they had to be open to students from different disciplines that would come to their class with different knowledge, motivations (internal and external), and expectations. Pat succinctly identifies the complexity that students bring to the classroom:

That every classroom you go into is going to be entirely different, it is a different mix of people. It is a different mix of objectives of what they are looking for in it, how they respond to the class, and what is going on.

As the term went on, TAs increasingly were aware of what their students required to do well in the course. Reed explains:

It is important that they [students] make that connection between what they are doing in the class and what their goal is, their larger goal, not just getting a degree but that they need.

Like when we talk about learning outcomes, they need to fit it in. What are they doing that day in the class that fits in with the course learning objectives, that fits in with the program, that fits in with the degree, that fits in with their career? They need to be able to make that connection and quite often I don't think first- and second-years really do that or are not encouraged because no one does that for them, spells it out, this is how this fits in.

Reed identifies the need to help students connect what they are learning to the real world. Chris shows an increasing awareness of reading cues from students in this example: "Well you notice that quiet students talk more in the small groups but you also notice by their notes. Quiet students make notes or their textbook is highlighted, so at least that is an effort." Chris goes on to explain:

And the people who do speak up make good contributions but a lot of people don't [speak up] and really know the material. One girl in the first group doesn't talk out loud but she knows the material really well and she acts like a leader in her small group but not in the big group.

Pat provides an example of reflecting on how to support students' learning:

I tried to work on the board more and I think as the semester went on that increased. I think the big thing is not making assumptions that it was understood at that level, not degrading them or babying them or above it, just giving them the background as a reminder.

Reed provides another example:

Yeah and in our high school system there is not a lot of opportunity to reflect on their study skills so they get here and that piece is missing. But they are so used to being told do this for next week, this is what you need to do to pass the course, without engaging. They don't have that experience of engaging the material and really owning it all. Then they get here and that is what we are asking them to do, make it yours, make it personal.

Charlie offers evidence of a growing knowledge about students by stating: "Students typically struggle with this topic because it is a bit more of a puzzle, and not only that, they have to wrap their heads around this idea of talking about [the topic]." In order to support students, TAs identified several areas that they needed to learn. For example, Sam, when talking to another TA, realized that they knew nothing about how to support students that may need extra support due to anxiety and stress. This prompted Sam to seek out resources on campus to help students if needed. Another area that TAs identified was the need to develop their interpersonal skills so that

they felt comfortable communicating with students to build relationships and provide feedback about their learning. The importance of feedback leads to the next descriptor, grading.

TAs realized the power associated with the role, how that translated to the classroom and to grading. In general, TAs noted how they learned how grading works, how course supervisors manage grading, the subjectivity involved, and mostly, about the effect of grading, which impacts students' lives. The power associated with grading was anxiety provoking for some TAs. They realized that if they did not give students an A, they were potentially creating barriers for them in the future. Chris explains:

I think it is more complicated than we give it justice. When I assign peoples' grades that has a big impact on their life. That is one of the things I really realized. If you don't give someone an A, you give them barriers.

At the same time, TAs felt disrespected by students who asked for higher grades due to the pressure of that form of request.

Due to this and the other factors identified here, TAs acknowledged that teaching was much more complicated and harder than they expected. The responsibility of teaching was more than they had anticipated. Charlie explains:

Teaching is more difficult and more stressful than people imagine. Yeah, you have to be mentally tough in a way. You are dealing with a range of personalities and backgrounds, you have to be sensitive as well as stern sometimes, and confident, all of these different things to keep the class rolling smoothly.

Questioning.

This recognition of the complexity of teaching and the act of reflection provoked TAs to take a critical perspective on their experience, leading to *questioning* aspects of teaching. TAs

questioned signature pedagogies and teaching. TAs spoke about the different strategies that are typical in their disciplines, such as chalk and talk, presentations, and discussion, what are known as signature pedagogies or disciplinary 'habits of mind' (Shulman, 2005). Since all TAs were basing their actions on their experience as a student, signature pedagogies dominated their thoughts about how to teach in the classroom. The problem was that they did not know how to structure those pedagogies, the theories underlying them, or why they dominated the discipline. This led to some TAs questioning their use and by the end of the term, seeking alternatives.

Overall, questions related to teaching surfaced for TAs. Blake asks, "Yeah, so to what extent is a TA teaching? Like the sage on the stage thing?" In this statement, Blake shows a lack of knowledge about what is meant by teaching. Others, however, confidently declared that teaching was all about students and being adaptable. A significant amount of TAs' questioning was related to how the TA role was structured, whether that was about how their specific job was structured or something broader. Since most TAs were tasked with grading, they had a lot of questions regarding how grading was structured. Most were perplexed about how to grade at the beginning but their learning was stifled by several factors, such as not having a rubric or a rubric being designed after the assignment was completed by students, or having to regrade assignments because of issues with the assignment design. TAs also had questions about how they could improve their teaching. Often, they would think of factors that could potentially make it better, such as getting to know students and creating an inclusive classroom culture, which they intended to try out the next time they taught. An example is provided by Blake: "Yeah, learn how to like maybe have the courage to try new things in class and be more willing to try things that may not succeed, and be okay with that and maybe working one-on-one with students." Other TAs questioned where the sweet spot existed between being too strict and too

lenient in the classroom regarding due dates and requests for extensions. TAs also had questions about their relationships with students and their course supervisor. Blake, talking about strategies to try when teaching next, points out the importance of the relationship with students in the classroom: “Maybe like strike up conversations with students before and after class, tell bad jokes, or something like that. Try to be less formal and more informal.”

Limiting.

In the sub-theme of *limiting*, different areas and reasons for a lack of reflection are highlighted. Reflection was either non-existent or restricted. In general, TAs showed a lack of reflection in their journals, which were simply descriptive *of* what happened and not reflective *on* what happened. Non-existent reflection occurred during interviews, despite questions and prompts provided to encourage reflection. TAs had a tendency to state that teaching “all went well.” By this, they meant that they did not feel that there were any issues or anxiety for them, and no critical incidents. This could be interpreted as refusal to reflect. This refusal to reflect indicated that there was no immediate need to do so, since they felt that all went well for them and neglected to think about the students’ perspective. For example, an often-cited problem was about questions falling flat but TAs did not consider the quality of the question they were asking or how to ask questions in a different way. Restricted reflection was evident when Sam relayed that she suspected that maybe students did not know what a grant proposal looked like: “Maybe now that we are talking about it, maybe spend more time explaining what a grant proposal is or ask them to look into it and yeah, like maybe coming up with a few ideas would be good.” Sam was not thinking about this possibility until we had a discussion about the class in detail. Despite noting that maybe this was a lack of knowledge in students, Sam was not reflecting on it and how it could be made better until prompted. Several TAs mentioned what an overwhelming

process teaching was, which may be a reason why there was evidence of a lack of reflection. As well, TAs only reflected on the immediate content and context of teaching and were not able to extrapolate and relate much beyond their own experience.

Summary.

TAs were discretionary when reflecting. They did not significantly engage in reflecting on their teaching and student learning. When they did, TAs' reflective practice was about themselves, students, and other elements associated with learning and teaching. Reflection was not considered an important aspect and in general was seen as optional, with opting out being the default most of the time. When they did reflect, TAs did not demonstrate substantial reflection-on-action. The level of reflections was primarily descriptive but through prompting during interviews, resulted in opportunities to reflect deeper on their learning. As shown above, TAs acknowledged several aspects of teaching and student learning that they developed knowledge about.

Conclusion

TAs had a difficult time articulating what they learned about teaching. Sam explains: "I feel like I definitely learned a lot but it is hard to think about what I have learned." Their dispositions were sometimes contradictory to their espoused theories about teaching and learning. They did not recognize how difficult it was to be on the other side of the classroom or anticipate the complexity of teaching. TAs aimed to enact what they observed as a student and as a student they were not aware of the strategies and conditions that the teacher had set to optimize learning. This led to disappointment due to expectations not being met and confusion because they did not know what was going on or what to do. One of the last questions to TAs during the exit interview was, how they would teach a course if they were the course supervisor.

Interestingly, most mimicked exactly how the course they just completed being a TA for, was set up. This indicated that TAs still had much to learn about teaching, despite engaging in some level of reflection through this research. This also indicates the importance of that first entry into teaching.

Bringing all of the themes together, with sub-themes, and descriptors provides a comprehensive look at TAs' characteristics as learners, their learning process, and knowledge development. The following diagram shows themes together. These themes are discussed further in the next chapter.

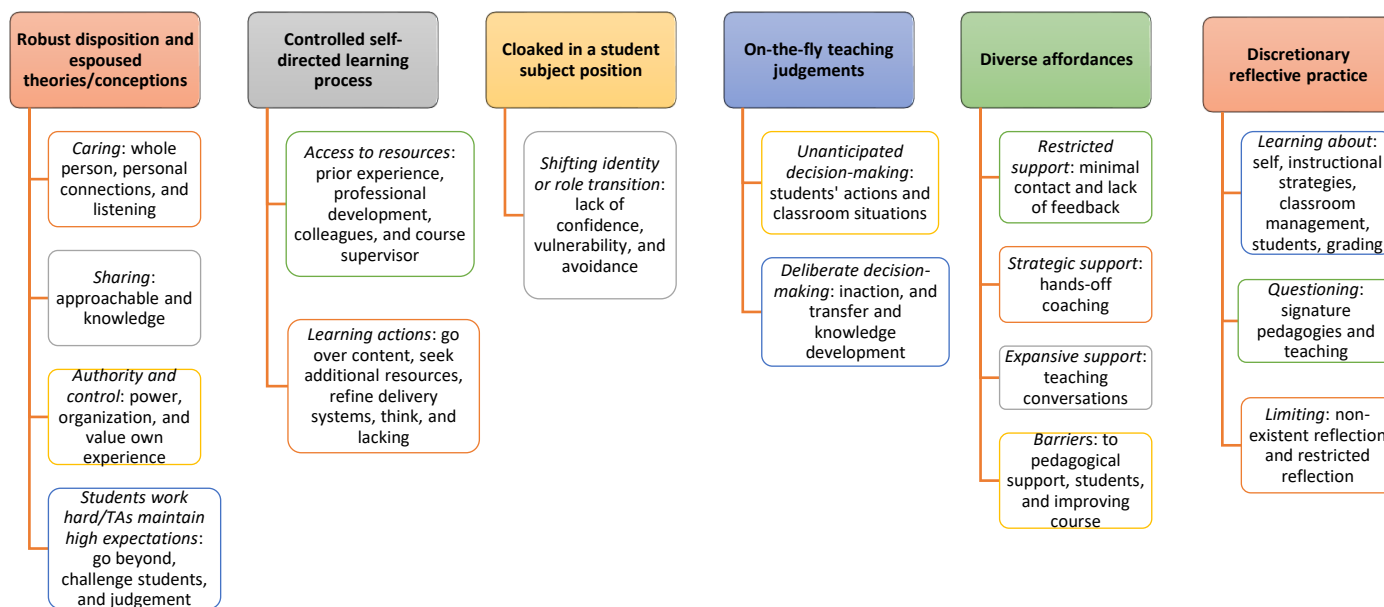


Figure 16. Themes, sub-themes, and descriptors together.

Chapter 5 Discussion

“What did I learn about teaching? That it is different than being a student.” Blake

In this chapter, themes are brought together under three headings: becoming, being, and forthcoming. These categories represent the different states of being that are in constant interplay as TAs learn how to teach as indicated by the themes identified. No category dominates or is a prerequisite for any other. Rather, these categories demonstrate the complexity of learning to teach in higher education.

Due to the volume of data, this discussion, supported by relevant literature, is focussed on what is pertinent to TAs and their performance as they first learn how to teach and the factors that influence their learning. The assumptions and overall story that the themes tell about what TAs do as they are learning to teach in higher education are discussed. By doing so, it will be shown how this research aligns with workplace learning literature.

Becoming: What TAs Bring to Their Teaching Role

Becoming signifies a beginning and recognizes that TAs bring prior knowledge, beliefs, and values about teaching and learning that impact their teaching work. Therefore, becoming is represented by learners’ characteristics that are identified in this research as robust dispositions and espoused theories/conceptions (theme 1) that are cloaked in a student subject position (theme 3). In the following two sections, the themes of robust dispositions or espoused theories/conceptions, and a student subject position, which characterize what TAs bring to their teaching role, will be discussed as to the significance of these characteristics to the research question, and connection to relevant literature. Learners’ characteristics are identified in the workplace learning literature as an important factor that needs to be taken into consideration for learning in the workplace (Chapter 2).

Robust disposition and espoused theories/conceptions.

Research has confirmed that teachers, whether novice or experienced, draw on their learning biographies and beliefs about teaching and learning (conceptions) to inform their teaching practice (their dispositions to act in certain ways in particular situations) (Akerlind, 2003; Barnett & Guzman-Valenzuela, 2017; Kagan, 1992; Kember, 1997; Kreber, 2010; Light & Calkins, 2015; Post, 2011; Prosser et al., 1994). A learner's biography is made up of prior knowledge and all the values and beliefs related to teaching and learning, which form one's dispositions and espoused theories/conceptions about teaching and learning. Without making conceptions and dispositions explicit, teachers are not always aware of how their conceptions and dispositions affect what they do in their teaching role, which can then lead to challenges and misinterpretations of situations while teaching.

It has been established that espoused theories/conceptions (what individuals say they will do) and theories-in-use (their dispositions) are not always connected (Goertzen, Scherr, & Elby, 2010; Morris, 2001). This research confirms these findings. TAs brought their espoused theories/conceptions about teaching and learning to their work with some conceptions being challenged and others contributing to issues in their teaching. TAs identified caring, sharing, authority and control, and maintaining high expectations of students as significant conceptions and dispositions that they brought to their teaching role. Their espoused theories/conceptions of caring, sharing, and maintaining high expectations of students were sometimes challenged by their disposition for authority and control. As TAs held on to their conceptions, the result was tension between these conceptions (what they stated they would do) and their disposition (what they actually did). At times, their conceptions were robust and at others, their disposition was stronger.

It has been found that it is common for teachers to state humanistic and caring beliefs (Fitzmaurice, 2010; Kreber, 2010; Weston & McAlpine, 1998; Wideen, Mayer-Smith, & Moon, 1998). TAs in this study stated that teachers had to be caring and student-centred. They professed that this would be rendered in their teaching by considering the student as a whole person, listening to students' needs, and by creating personal connections. The caring conception would be further exhibited through sharing their knowledge, being approachable so students felt comfortable, and building the personal connections they deemed important. Further, they would maintain high standards so that students could achieve their best but it also provided evidence to TAs that they had an impact on students' learning. These conceptions related to caring are identified in the literature as a pedagogic care approach (Weston & McAlpine, 1998; Walker & Gleaves, 2016). Weston and McAlpine (1998) conclude from their study that the caring conception is indicative of outstanding teachers. TAs identified caring as one of the characteristics of previous instructors they admired and that they wanted to emulate. Those who experienced a pedagogic care approach as an undergraduate felt the positive impact it had on their learning and student experience.

An aspect of the caring conception was that teachers had to hold high expectations of students, while students had to take responsibility for their own learning and work hard in order to achieve excellence. Teacher expectations have garnered considerable research in the K to 12 sectors but little in higher education. Within K to 12, research has looked at biases, such as high and low achievement, social class, and subgroups (de Boer, Timmermans, & van der Werf, 2018). In higher education, Fraser and Killen (2003) found a blame culture: students blamed professors and professors blamed students, each for different reasons. They also found that professors expected students to be responsible for their own learning, confirming TAs'

conceptions in this research. However, in this study TAs tempered their high expectations due to their own experience as a student. This tempering may have sent mixed messages to students. They held high expectations but then at any hint of low achievement, TAs lowered their expectations and resorted to blaming students. Research has shown that teacher expectations affect the quality of support a teacher provides and that interventions to increase expectations is possible (de Boer et al., 2018). If a teacher maintains high expectations of students, the teacher will provide ample support for students. Alternatively, if a teacher has low expectations, the result will be low student achievement. Thus, maintaining high standards and expectations of students results in high student achievement. TAs rightly held high expectations but due to their lack of confidence, imposter syndrome, and lack of pedagogical knowledge, they faltered as they tried to maintain high expectations, undermined by their disposition for authority and control.

TAs' disposition for authority and control caused tension. Kagan (1992) found that due to their lack of knowledge about students, novice teachers resort to authoritarian strategies to control students in the classroom. TAs were fearful of how they were going to control students. Taking their own experience as their source of information, they generally believed that students were going to be problematic. Several described their own behaviour as a first- and second-year undergraduate as abhorrent, such as painting their nails in class, not doing readings, and not paying attention in lectures. Therefore, they anticipated the same from students. Many mentioned remembering the transition from second- to third-year and eureka moment of finally knowing how university worked. Drawing on that prior knowledge was useful in making them feel like they had an understanding of the students they would be encountering but also fearful of how to manage their behaviour in the classroom. Organization was a mechanism TAs employed to help

them maintain control, comforted by the organization that the course supervisor provided and if not provided, proceeded to develop their own.

TAs rendered their authority in different ways in the classroom. Vick and Martinez (2011) examined the movement and positioning of teachers in the classroom. Their research showed how teachers use their bodies in two ways: to signify interest in students or create distance so that there was no interaction, with each of these extremes enacting authority (p. 186). Some TAs in this study used positioning in the classroom as an indicator of authority by positioning themselves behind the lectern or desk at the front of the class, creating distance to limit interaction. Looking into the power dynamics that can occur in the classroom, Pytlak and Houser (2014) conducted research about TAs' power and authority compared to credibility (competence, trustworthiness, and goodwill) in the classroom. They found that establishing credibility was more important than power. The establishment of a caring and trusting environment, important features associated with interpersonal relationships, were particularly important. The authors suggest that new TAs need to first establish rapport with students that demonstrates their credibility and eliminate antisocial behaviour completely since it decreases power, rather than establishing power.

The above shows that at times, TAs' disposition, the need for control and authority in their actions, was more robust than their caring, sharing, and holding high expectations conceptions. Significant research has confirmed that individuals' disposition affects their teaching performance and influences how knowledge and skills are brought to work duties (e.g. Cummins & Asempapa, 2013; Ellstrom, 2001; Katz & Raths, 1985; Schussler, Stooksberry, & Bercaw, 2010). For example, Katz and Raths (1985) state that if a teacher has a disposition of caring for students' learning, then that would be evident in their actions in the classroom, such as

responding to students' questions, ensuring that all students understand tasks in class, or other actions that demonstrate consistently that the teacher cares for students' learning. TAs' disposition was challenged by their espoused theories/conceptions. As the example given in Chapter 4 indicated (where the TA was frustrated because students were asking for clarification about task details that the TA had already explained several times), some conceptions could not be maintained due to the TA's disposition of retaining authority and control. In those situations, their disposition to maintain authority/control dominated.

Since TAs enter teaching with pre-existing conceptions about learning and teaching, they look for evidence to confirm their existing conceptions (Leger & Fostaty Young, 2014). As new knowledge is encountered, they look to confirm their espoused theories/conceptions. If they encounter new knowledge that is not compatible with their existing theories/conceptions, then that new knowledge is discarded (Kane et al., 2002). This confirmation and spurious evidence form lasting attitudes and knowledge about teaching and learning (Boice, 1996; McKeachie, 1994), which further strengthens TAs' espoused theories/conceptions. Without guidance and learning conversations, TAs' espoused theories/conceptions become robust and resistant to change (Kane et al., 2002). Similarly, TAs' disposition to act in a certain way in particular situations, can dominate and may not align with their conceptions. Both, whether robust conceptions or disposition, when not aligned, cause frustration, challenges, and issues that the individual then looks to resolve or lays blame.

Due to the conflict between conceptions/espoused theories and dispositions (theories-in-use), addressing this conflict is a significant first step in supporting TAs before they begin teaching. Since conceptions and dispositions have the quality of potentially being robust and if not analyzed, the result is that TAs unknowingly aim to confirm their conceptions about teaching

and student learning rather than being open to learning new knowledge about teaching. By examining conceptions and dispositions, TAs may be more open to a student-centred/learning-oriented approach to teaching as opposed to a teaching-centred/content-oriented approach. As Kane, Sandretto, and Heath (2002) state: “We argue that an understanding of university teaching is incomplete without a consideration of teachers’ beliefs about teaching and a systematic examination of the relationship between those beliefs and teachers’ practices” (p. 182).

Student subject position.

The difficulty encountered when taking on a new role and identity was evident in this research. In addition, this research confirmed that TAs’ prior knowledge is restricted to a student perspective that confines their view of learners as a version of themselves (Nyquist & Sprague, 1998), which maintains TAs’ student subject position as they take on the teaching role. Kagen (1992) states how important it is for novice teachers to strongly identify as teachers (rather than students) because if they do not, their learning is shallow and imitative. Recognizing that the first few months in a new position are an important space for developing identities, of becoming and learning, Beauchamp and Thomas (2011) investigated the boundary space (transition time) of pre-service teachers between learning to be a teacher to after a few months of practice. They found that the boundary experience was a time of instability, tentative speech, and layers of identity that were developing and evolving. Most felt that they lacked agency as a teacher but knew that agency was important to possess. Some experienced a growing sense of agency due to having a feeling of belonging. van Lankveld, Schoonenboom, Volman, Croiset, and Beishuizen’s (2017) review of the teacher identity literature confirms that it takes a few years to develop a teacher identity.

TAs' student subject position, role transition, and shifting identity were important factors in their learning how to teach. As established, TAs' student subject position encased them in a lack of confidence and feelings of vulnerability that led them to employ avoidance tactics in some situations. Billett (2006) found that identifying with a new role and its associated expectations, rules, and responsibilities contributes to a new employee's confidence, commitment, motivation, and agency at work.

TAs declared feeling about 50% confident in their content knowledge and some TAs were quite fearful that students in the class knew more than them. This lack of confidence resulted in TAs giving over control of discussion to students. Although TAs were marginally confident about their content knowledge, TAs felt fairly confident in teaching, even though they had never taught before or engaged in significant instruction about teaching in higher education. As previously established, TAs conflated the student and teacher role and felt that they only had to implement a few minor changes to their image (cloaking their student subject position with different attire), and location (situating themselves on the other side of the classroom), to assume the teacher role. The thick transparent screen that separates teachers from students in the classroom was completely concealed from them. Once in the teaching position, they slowly began to notice the thick transparent screen—where the complexity of teaching resides—that obscures the difference between the teacher role and student role. As TAs advanced in the term, the thickness of the screen was slowly felt, as their cloaked student subject position gradually began to shift.

Development of a new subject position is a complicated process (Chapter 2). First, how the position is located in the workplace can influence how an individual takes up the position. The TA position is often located as peripheral, where the position may not garner enough support

in the workplace (Sawchuk, 2011). Despite this location, Fuller et al. (2005) confirm that newcomers bring experience and therefore should be considered as equal contributing members to the workplace. In this research, one TA felt like an equal contributing member to the teaching team and, subsequently, felt more confident in the teaching role. In addition, TA work is a short-term transitory role, which contributes to the ambiguity surrounding the role and feelings of being an imposter. These factors contribute to the ease or difficulty of developing their subject position as a teacher. This is coupled with aspects related to acquiring a new role. At first, an individual may have difficulty relinquishing a former role as they take on a new role, as established with the student role to the teacher role. TAs had a difficult time distinguishing the two, except for external elements, such as how they dressed and their position shifting to the front of the classroom. If difficulties emerge during role acquisition, an individual may quit or if not able, may internally withdraw. In this research, one TA decided to internally withdraw despite beginning with high interest in teaching. Others were able to develop relationships associated with the role, such as with the course supervisor and students that provided enough support for TAs to absorb the role and feel confident in their work after one or two terms of teaching.

Vick and Martinez (2011) state that each teacher constructs a combination of subjectivity and performativity. Since the subject (the individual) is always becoming, it is always ready to exercise one's agency and intentionally change how a role is enacted. TAs, remaining in a student subject position while holding a teaching position, stifle their ability to construct and change how they are enacting their role and becoming a teacher. Even though a teacher identity may take years to develop, an important finding of this research, is that TAs need to identify with

the teacher role and take on the teacher subject position as soon as they are assigned a TA position.

The diagram below illustrates how becoming contributes to the development of a framework that could be used to develop a curriculum for TAs in the academic workplace.

Becoming	Making espoused theories/conceptions (what individuals say they will do) explicit
	Identifying teaching and learning dispositions (what individuals actually do in practice)
	Consciously transitioning from student subject position to teacher subject position

Figure 17. Framework for TA workplace curriculum development.

Summary.

Findings from this research show that TAs' espoused theories/conceptions, dispositions, and student subject position form the framework from which they approach learning how to teach. Therefore, it seems reasonable to suggest that this framework is an important aspect to consider before one embarks on learning how to teach. As Kagan (1992) posits, for teachers to grow, they need to address their prior beliefs. Meaning first, what individuals bring to a new role needs to be unpacked.

This brings us to discussion about TA's actions and how these actions were informed by their espoused theories/conceptions, dispositions, and student subject position.

Being: TAs' Teaching and Learning

Being represents what TAs did in their new work position, including their thoughts, feelings, and actions related to their TA work. In this research, being is represented by the

learning process of TAs that is characterized by their controlled self-directed learning process (theme 2) shaped by diverse affordances (theme 5) as they made decisions on-the-fly (theme 4). The discussion below shows the multiple factors that influenced TAs' learning process that was largely autonomous, reactive, and dependent on various forms of support. The literature in workplace learning has identified that the learning process of employees needs to be known so that supports can be developed (Chapter 2).

Controlled self-directed learning process.

As TAs began to take on their new work position, they carried their robust espoused theories/conceptions and dispositions on the backs of their student subject position and began to take learning actions related to their new work position.

TAs were controlling how, when, and where their self-directed learning process took place. TAs intentionally accessed their prior experience, professional development, colleagues, and course supervisor, but access varied greatly. TAs' prior experience within their discipline (signature pedagogies), with TAs as an undergraduate, and work experience, became the foundation of how TAs approached their work, confirming that individuals rely heavily on their own experience as they engage in a new work position (Ellstrom, 2011; Eraut, 2000). Most TAs attended some formal professional development opportunities, a mandatory union meeting, met with their course supervisor, and consulted colleagues, all identified by Filstad (2004) as enculturation resources for new employees. However, all of these resources were accessed only when needed and some of these resources were not accessed at all. Therefore, as they engaged with these enculturation mechanisms, most TAs limited what they were learning about the expectations of their new work position. Only one TA had clear and ample expectations and support provided by the course supervisor.

TAs' learning actions were primarily devoted to content knowledge. Their self-proclaimed habits of skimming as an undergraduate and their student subject position kept them in a position of feeling like an imposter. When seeking supplemental materials about content, they resorted to Wikipedia and YouTube, rather than scholarly resources. Teaching, referred to as 'delivery' and 'transmitting', indicated that TAs were primarily taking a teaching-centred/content-oriented approach to teaching. Further, TAs admitted to deliberately not seeking out sufficient instruction—lacking curiosity that illustrates a surface approach to learning about teaching and student learning.

More importantly, TAs lacked mentorship. The necessity of workplace learning being guided is well established (Billett, 2009; Cosnefroy & Buhot, 2013; Fuller, 2006; Fuller & Unwin, 2003; Tynjala, 2008) and acknowledged as highly valued in the academic workplace (Warhurst, 2008). Through mentorship, individuals receive feedback that promotes reflection—two key learning processes. A significant problem recognized with self-directed learning is the lack of practice and feedback that leads to improvement (Murphy & Jensen, 2016) confirming the importance of mentorship.

Due to professional development not being mandatory, and lack of clear expectations and work processes, mentorship, feedback, and assessment of job performance, TAs were left responsible for directing their own learning process. As a result, TAs carefully controlled their self-directed learning process taking a primarily reactive rather than proactive approach.

Diverse affordances.

How affordances are designed and available in the workplace determines whether the learning environment is restrictive or expansive and impacts the level of learning that occurs, whether adaptive or developmental. Expansive support occurs when an employee is provided

with ample mentorship and opportunities to learn. Restrictive support (evidence of lack of support) is when an employee is provided with limited mentorship and rarely given opportunities to learn. For this research, I identified another category that I term, strategic affordances, which occurs when a TA is provided with just enough information to perform the role or with the information the course supervisor deems important but not enough to provoke sustained development and deep learning. TAs in this study had all of these forms of support with the majority receiving strategic affordances or support.

Diverse affordances began with enculturation. Enculturation and learning how things are done in the workplace, including the missions of the organization (Evans, Guile, & Harris, 2011), is a significant first step for new employees (Edwards, 2005; Eraut, 2000). Different mechanisms were in place to enculturate TAs into the department and institution but, upon reflection, most felt that there was not enough to induct them into the academic workplace. Besides the TAC program, which was not mandatory for all TAs in this study, and the first meeting with a course supervisor and union meeting, no other affordances were mandatory for TAs.

TAs were assigned to a course in which they felt somewhat confident in the subject matter. Despite all TAs in this study being assigned to teach a tutorial or lab, the way their work was structured varied greatly. When highly structured, it was restricting, but comforting, for new TAs. When minimally structured, TAs had a lot of autonomy to structure their teaching how they wanted. What became evident was *what* was structured was more important than whether there was high or low structure. Providing TAs with a prescribed template of what to do when, was less important than giving TAs a balance of autonomy and a well-developed lesson plan that

explains why the required actions are important to support student learning and course learning outcomes.

Lavé (1982) brought attention to the fact that the sequence of work activities within a work place can be highly structured and purposely designed to support the learning process of new employees. Further, Ellstrom (2010) shows the cyclical processes that structure work in the workplace in Figure 18.

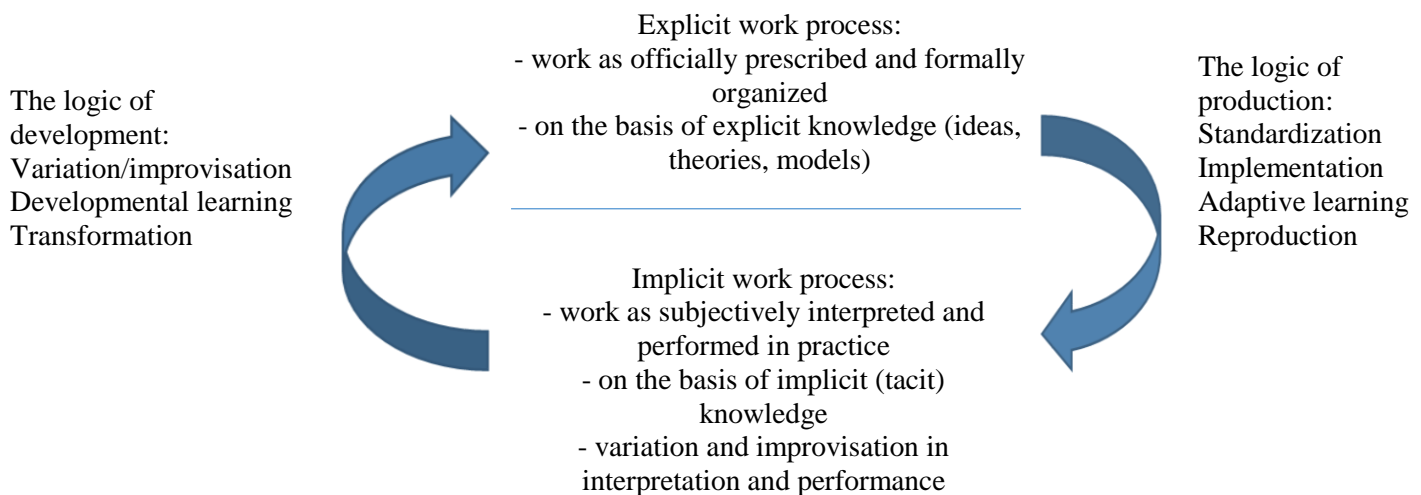


Figure 18. Cyclical process of learning (Ellstrom, 2010, p. 6).

As Lavé and Ellstrom detail, structure provides a framework within which new employees can find the support they require. Ellstrom's (2010) model is explained as:

1. Explicit work processes – how the work is codified and organized. For example, written instructions guided by the context of the workplace that clearly indicate expectations of the role.
2. Implicit work processes – even if explicit work processes exist and are clearly articulated, how that work is actually rendered by individuals is guided by an individual's subjective

approach. The same work may be done differently by each individual and even by the same individual at different times.

3. Logic of production work process – a structural model that concentrates on reproducing the explicit work process. This logic strongly emphasizes efficiency, certainty, and stability with the underlying assumption being that individuals will learn what is required quickly. The individual simply has to take the stated abstract ideas and apply them, thus maintaining certain routine tasks. The underlying assumption is that the work will be done at the appropriate speed and with a low percentage of error achieved due to minimal autonomy and clear instructions.
4. Logic of development work process – a structural model that is focused on practice as a way to create new knowledge, encouraging developmental learning. In this logic, the individual questions and reflects on existing practices in the work process by exploring different ways of doing things. By transforming work processes, explicit work processes change.

These processes inform how work is structured in the workplace. The requirements of a work position are explicitly described so that the individual is aware of what the job entails. Often the requirements and expectations of a job can take the form of a learning trajectory, plan, or competencies. Expectations associated with a job highlights the importance of sequencing work appropriately, and that learning challenges associated with work should increase over time as the employee becomes more competent in the workplace (Rausch, 2013). No matter how the job is described and what the expectations are, each individual will perform the job differently, informed by their espoused theories/conceptions, dispositions, and subject position.

In the ideal workplace, the aim is to bring the logic of production and development together for efficient performance, to provoke innovativeness, and support the learning process. Keeping balance between the two ensures short-term gain for production and long-term goals for development (Ellstrom, 2011). Resource allocation may affect how these logics are enabled or constrained, and problems may surface if one logic is dominant. For example, if the logic of production is dominant, Ellstrom (2010) notes how individuals may resist performing work showing that the logic of production has two sides: an individual can accept the norms and routines and master them, or simply learn to ‘handle’ certain tasks. Therefore, if the logic of production dominates, individuals are learning to adapt but sometimes only minimally. Conversely, if the logic of development dominates, it can be too disruptive to normal work production.

Considering Ellstrom’s model and TAs’ work processes from this study, several points can be made. First, the logic of production and development were not balanced as recommended by Ellstrom. Most TAs were heavily located in the logic of production where they had limited chance for development. Participants noted how they were given the standards expected, how to implement (skeletal instructions), the expectation to reproduce what a professor would do, and adapt quickly. Despite the aim of the course supervisor being the logic of production (restrictive to strategic support), some TAs, due to skeletal instructions and no professional development required, found themselves in the logic of development. This provided ample opportunities for variation but proved to be overwhelming. TAs had never been a teacher before and therefore did not have any routines established. Everything they were taking on was new. Faced with new situations in the classroom and not having the comfort of routinized practice to fall back on, TAs often did not know what to do or how to solve a problem. Only one TA had a balance of

production and development that allowed that TA to engage in adaptive and developmental learning. Ellstrom (2011) states that a balance of adaptive (socialization to the workplace and learning routines) and developmental (challenging existing practices and provoking change) learning is required to sustain an enabling learning environment. On the contrary, if a workplace does not provide opportunities for developmental learning, then it is categorized as constraining.

Ellstrom's (2001) table below illustrates the adaptive and developmental levels of learning. To keep a balance between the logic of production and development, it is therefore optimum to situate new employees in production type 1 and type 2, the shaded areas.

Table 7. Levels of learning as adaptive and developmental (Ellstrom, 2001).

Aspects of the work-learning situation	Levels of learning			
	Adaptive learning		Developmental learning	
	(1) Reproduction	(2) Production type 1	(3) Production type 2	(4) Creative
Tasks	Given	Given	Given	Not given
Method	Given	Given	Not given	Not given
Results	Given	Not given	Not given	Not given

Taking Ellstrom's table and applying it to the dominant duties assigned to all TAs in this study, results in the following table:

Table 8. Aspects of work and levels of learning.

Aspects of the work-learning situation	Levels of learning			
	Adaptive learning		Developmental learning	
	(1) Reproduction	(2) Production type 1	(3) Production type 2	(4) Creative
Tasks				
Facilitate discussion	Given	Given	Given	
Grade	Given	Given	Given	
Develop questions	Given	Given	Given	
Method				
How to facilitate discussion	Given	Given	Not given	

and manage classroom				
How to grade, such as rubrics provided	Given	Given	Not given	
Questions given or how to develop questions provided	Given	Given	Not given	
Results				
Learning outcomes provided	Given	Not given	Not given	
Grades expected	Given	Not given	Not given	

As Table 8 shows, the majority of TAs were in the logic of production and therefore primarily in adaptive learning. Some TAs were in reproduction, the lowest level of learning that required minimal decision-making, which equates to minimal learning. Several TAs were in the next level, production type 1, which initiates deeper learning because of the need to make decisions about potential results and to adjust methods to acquire those results. In productive type 2 learning, TAs had to determine the results and methods to use to complete the task given. None of the TAs were at the highest level, creative, where they had to define the task, methods, and results, which often occurs when faced with a new situation. However, since all were new to the teaching role and due to the complexity of teaching, all did encounter situations they did not anticipate. This confirms Ellstrom's statement that all four levels are used and entwined in most work situations, confirming the importance of balance. At the creative level of learning, the reasoning behind the decisions made are not always made explicit, since individuals rely on their tacit knowledge, conceptions, and dispositions (Ellstrom, 2001). This level can also occur when

individuals question established approaches in the workplace and act to change practices (Ellstrom, 2001, p. 424), which several TAs decided to do.

Second, TAs were not explicitly given any form of expectations, except to attend meetings when required (for some TAs this was not required), and complete the duties that the course supervisor assigned, such as to facilitate discussion using prescribed questions and if students do not come to class prepared, then ask them to leave. How to perform their teaching assignments well was not explained. In general, TAs were not informed about the pedagogical theories informing their work nor how their work connected to the course, except for one TA who felt part of the teaching team. Lacking feedback and information about the expectations associated with their role, confirmed TAs relying on their espoused theories/conceptions, dispositions, and student subject position. Without clear expectations and mentorship, TAs did not know what to learn and how to direct their own learning.

To help direct TAs on how to learn how to teach, Eraut's (2004) table of learning trajectories in the workplace is useful to set expectations, guide learning, and target feedback. Based on the findings from this research, the areas that dominate TAs' learning during the first few months are highlighted.

Table 9. Learning trajectories (Eraut, 2004).

Task Performance	Role Performance
Speed and fluency	Prioritisation
Complexity of tasks and problems	Range of responsibility
Range of skills required	Supporting other people's learning
Communication with a wide range of people	Leadership
Collaborative work	Accountability
	Supervisory role
	Delegation
	Handling ethical issues
	Coping with unexpected problems
	Crisis management
	Keeping up-to-date

<p>Awareness and Understanding</p> <p>Other people: colleagues, customers, managers, etc.</p> <p>Contexts and situations</p> <p>One's own organization</p> <p>Problems and risks</p> <p>Priorities and strategic issues</p> <p>Value issues</p>	<p>Academic Knowledge and Skills</p> <p>Use of evidence and argument</p> <p>Accessing formal knowledge</p> <p>Research-based practice</p> <p>Theoretical thinking</p> <p>Knowing what you might need to know</p> <p>Using knowledge resources (human, paper-based, electronic)</p> <p>Learning how to use relevant theory (in a range of practical situations)</p>
<p>Personal Development</p> <p>Self-evaluation</p> <p>Self-management</p> <p>Handling emotions</p> <p>Building and sustaining relationships</p> <p>Disposition to attend to others' perspectives</p> <p>Disposition to consult and work with others</p> <p>Disposition to learn and improve one's practice</p> <p>Accessing relevant knowledge and expertise</p> <p>Ability to learn from experience</p>	<p>Decision Making and Problem Solving</p> <p>When to seek expert help</p> <p>Dealing with complexity</p> <p>Group decision making</p> <p>Problem analysis</p> <p>Generating, formulating and evaluating options</p> <p>Managing the process within an appropriate timescale</p> <p>Decision making under pressurised conditions</p>
<p>Teamwork</p> <p>Collaborative work</p> <p>Facilitating social relations</p> <p>Joint planning and problem solving</p> <p>Ability to engage in and promote mutual learning</p>	<p>Judgement</p> <p>Quality of performance, output and outcomes</p> <p>Priorities</p> <p>Value issues</p> <p>Levels of risk</p>

Despite other categories being applicable, TAs, as they first begin teaching, dominate in the learning trajectories of academic knowledge and skills, personal development, and decision-making and problem-solving. Therefore, instruction and support that is concentrated in these three trajectories would benefit new TAs who are teaching.

It has been stated that one's disposition can be observed by the frequency of an action in a certain context (Katz & Raths, 1985). If this is the case, then we can conclude that TAs' actions regarding professional development indicates that by not being mandated, TAs will either minimally engage or forgo engagement with professional development. Additionally, as

established in Chapter 4, TAs had a difficult time transferring what they learned in professional development to their teaching experience, which shows the importance of continual professional development to help TAs make those connections.

TAs' robust disposition related to authority and control was based on a strong belief that their own experience provided sufficient knowledge to teach. Consequently, this deems the necessity for strong encouragement or mandatory attendance at professional development as a required affordance for TAs. As this study shows, if TAs do not engage in professional development, they will not take actions required to learn foundational knowledge to support them in their learning in the workplace. However, TAs need guidance. Setting expectations based on a clear learning trajectory will help TAs in their learning in the workplace. Further, as TAs attend professional development, ongoing guidance can help TAs connect theory to practice and practice to theory. Employing all aspects of appropriately sequenced work processes will ensure that TAs are well supported and institutional goals met. This is important due to the significant decisions TAs make while teaching.

On-the-fly teaching judgements.

TAs made a lot of judgements while teaching, relying on their prior experience as they reacted to situations that were either unanticipated or deliberately planned decisions. When unanticipated, it was because they were monitoring students' actions while teaching, what McAlpine, Weston, Beauchamp, Wiseman, and Beauchamp (1999) call concurrent monitoring (similar to Schön's reflection-in-action). However, knowing which cues to monitor is a highly complex metacognitive skill that needs to be learned. Those new to teaching may not be aware of the importance of this skill (McAlpine et al., 1999). McAlpine et al. (1999) identified four categories of cues that instructors monitor, in order of most to least used: student state

(subjective interpretation of student learning), student verbal (questions, comments), student nonverbal (facial expression and body movement), and student written (assignments) (p. 120).

These cues were identified as either positive, negative, neutral, or mixed and provide feedback to instructors about how students' learning is progressing during a lesson.

TAs relied on all of these cues in the classroom and in general, made more decisions to take action than not. However, they were not always aware that they were making decisions based on student cues until we discussed TAs' actions in our interviews. This confirms what McAlpine et al. (1999) posit about concurrent monitoring being an "automated process" (p. 138) and therefore needs to be made explicit. Looking at TA decision-making, it was dominated by decisions related to classroom management, organization, and knowledge of learners. Despite being driven by negative situations in the classroom, TAs were able to draw on their own experiences as undergraduates to help students with the same difficulties they had experienced themselves. Often, it was not until situations arose *in situ*, therefore causing TAs to be reactive, that TAs remembered similar difficulties with content or with managing course requirements. It is here that they were able to exercise their espoused theory/conception of caring through sharing.

Unanticipated decisions often result in incidental learning, identified as one of the primary ways that faculty learn about teaching and students' learning (Post, 2011). This is confirmed by Eraut's (2000) three types of workplace learning: implicit, reactive, and deliberative. Unanticipated decisions result in reactive learning where the person is aware of the learning but it is unintentional. Since learning is reactive, Eraut and Hirsh (2007) found that the individual needs to quickly understand the situation, make a decision, enact that decision, and then monitor the outcome. This complexity of teaching situations has been referred to as "hot

action,” where conditions are constantly in flux (Beckett, 2002, p. 73). During interviews, TAs realized the multitude of decisions that they made each time they were teaching, even when they had a heavily structured lesson plan that resulted with them recognizing the complexity of teaching.

Deliberate decision-making was expressed by not taking action on situations that occurred in the classroom, or by transferring knowledge from their growing experience of teaching. As with unanticipated decision-making, deliberate decision-making was based on classroom management, organization, and monitoring students. The difference was that their decisions to change any of these was driven by their desire to support students’ learning the subject matter. Some of the TAs made significant changes to help support students learn the content, using their growing knowledge of teaching. TAs who made changes were situated more in the developmental learning level, identified earlier. Despite this learning level being overwhelming for these TAs, they deliberately decided to implement what they were learning immediately in the classroom.

These findings align with McAlpine and Weston’s (2000) research regarding faculty decision-making. They identified faculty monitoring students or themselves as the primary categories impacting decision-making, whether action was taken or not. The dominant cue that was noticed in this research were action cues. TAs based a significant portion of their decisions on actions that students took either in or out of the classroom. For example, when a student took the action of cheating on a test, the TA had to make a decision about how to handle the situation, to do something or not. This falls under the category of monitoring students. Nevertheless, the cue to make a decision and take action was based on a student’s action.

These findings do not align with the literature that has followed the stages and concerns theories. According to these theories, those new to teaching are primarily concerned with themselves (monitoring themselves). Concern for students is not considered until the individual has one or two years of experience (Cho et al., 2011; Darling & Dewey, 1990; Sprague & Nyquist, 1989). By contrast, TAs in this study were primarily concerned about students' learning and made their teaching decisions based on these concerns.

The diagram below illustrates how *being* contributes to the development of a framework for TA curriculum development in the workplace.

Being	Guided self-directed learning with feedback and learning conversations that promote reflection
	Balanced affordances that are sequenced appropriately to support and encourage learning
	Transitioning from a teacher-centred/content-oriented to a student-centred/learning-oriented approach
	Developing and practicing pedagogical knowledge and skills

Figure 19. Framework for TA workplace curriculum development.

Summary.

TAs' learning was self-directed as they made teaching decisions based on their conceptions, dispositions, and approach to teaching shaped by the affordances in the workplace. Due to affordances provided, it was established that TAs had no choice but to self-direct their learning. In only one example was the TA provided with expansive affordances to support learning, although the TA still lacked several aspects to fully support learning, such as feedback

about performance. Furthermore, when TAs were required to self-direct, they did not seek sufficient support. This is because TAs thought that their prior experience as a student gave them the knowledge base that they required to teach. There are two approaches to learning in the workplace: expansive (actively seeking out learning or deep learning) or restrictive (not seeking learning or surface learning) (Shanks et al., 2012). Most TAs took a restrictive approach by not seeking out any or only limited instruction about their upcoming teaching role. TAs did not actively seek out instruction about the pedagogical underpinnings of what they were tasked with doing. Kagan (1992) found that K to 12 teachers took a restrictive approach to teaching because they did not take on a teacher subject position. It was not until the end of term during our exit interview that TAs began to question the teaching methods they had been assigned and had questions about other aspects of their teaching experience.

Due to taking a restrictive approach, TAs' lack of pedagogical knowledge and skills became evident. Teaching, as indicated by the responsibilities assigned to TAs in this study, involved a multitude of required skills. TAs brought skills from being a student, such as writing, studying, and critical thinking. As a social being, they brought communication and interpersonal skills. However, they lacked the skills and knowledge required for teaching. Some of the pedagogical knowledge and skills that TAs in this study would have benefitted from developing prior to or in conjunction with teaching include: facilitating group work, lesson planning, writing learning outcomes, motivating students, classroom assessment techniques, feedback skills, and how to evaluate student assignments, to name just a few. Even if TAs bring some pedagogical knowledge and skills to their TA work, Katz and Raths (1985) and Schussler et al. (2010) have argued that a teacher may have the knowledge and skills but not use them well in the classroom, making instruction on how to transfer those skills to the classroom essential.

Further, affordances in the academic workplace, such as how work processes were designed, were diverse, lacked balance, and coherent sequencing to foster learning. For example, once someone is aware of the expectations and how work will be structured, the individual can determine how personally challenging the work will be to successfully enact. Eraut (2004) states that work should not be too challenging or not challenging at all. If the work is too challenging, an individual's confidence level will be affected negatively. This is especially important when taking on a new position. Work that is too challenging can lead to mental and emotional stress. If under challenged, individuals' motivation and value of work may be affected. Whether over or under challenged, both affect learning potential. Ideal work is sufficiently challenging so that an individual's confidence to succeed is not reduced and their interest in and satisfaction with their work is enhanced. This confirms the need to balance the logic of production and logic of development.

Further, all of the above, was a result of TAs not having a strong community of practice and mentors to rely on to actively foster their process of becoming teachers. This lack of community promotes dis-identification (Hodges, 1998) with teaching and supports identification with research. To encourage development of scholars, it is necessary to promote identification with all aspects of academic work.

Lastly, TAs made a lot of decisions, even when they had a highly structured outline. Underlying the judgements that TAs made was a teacher-centred/content-oriented approach to teaching, which is dominated by the acquisition and transmission model: the epistemological assumption that knowledge is external, independent of the knower, and should be acquired. This was demonstrated through TAs' marginal confidence in their content knowledge (even when they had substantial knowledge about the subject matter) and in the language they used when

discussing teaching. TAs often mentioned content-related attributes like delivering content, being a content expert, and passing on knowledge. TAs did include attributes that related to students as well but their mention of students demonstrated a teacher-centred approach because it was about what the teacher would do, rather than what students would do. In contrast, a learning-centred approach to teaching is identified by its focus on what students do with the teacher facilitating learning.

The purpose of this research is not to debate whether a content-oriented or learning-oriented approach is best. Nevertheless, the literature related to teaching excellence in higher education does discuss what represents good teaching. In that discussion, there is consensus that since the goal of teaching is student learning, a learning-centred approach represents excellent teaching (Gunn & Fisk, 2013; Ramsden, 2003). TAs defaulting to a teacher-centred/content-oriented approach has been confirmed in the literature (McGivney-Burelle et al., 2001; Volkmann & Zgagacz, 2004). However, some have found that this can be attributed to how TA work is structured (Addy & Blanchard, 2010). When lesson plans are too structured, TAs do not have the opportunity to exercise a student-centred/learning-oriented approach. Further, it has been suggested that most TAs probably experience more teacher-centred approaches to learning and actually prefer that because they are more familiar with this form of approach to teaching (Wright, Bergom, & Brooks, 2011).

Forthcoming: Knowledge Development about Teaching and Student Learning

Forthcoming is represented by the knowledge that TAs developed about teaching as a result of reflecting on their work (theme 6). The important link between reflection and development of teaching knowledge has been recognized by several (Brookfield, 2017; Palmer, 1998; Schön, 1983, 1987) and the necessity to make that knowledge explicit (Schön, 1983). This

confirms Brookfield's (2010) research that reflection is the main form of learning in the workplace. The workplace is dominated by tacit, implicit, and embodied knowledge as learning occurs through experience (Hager, 2005), with this knowledge being context dependent (Hager, 2004). Typically, the aim is to make tacit knowledge explicit (Eraut, 2000).

TAs in this study did not come to their work with tacit knowledge about teaching. A criterion for involvement in this study was that they had not taught in a higher education setting. Therefore, they did not have any prior knowledge about teaching although they did come with conceptions and strong beliefs about teaching and student learning. TAs did not possess any 'knowing how' (Raelin, 2007) or 'knowing-in-action' (Schön, 1983). Their knowledge developed as they performed their teaching role and it was only through reflection that they began to articulate what they were learning about teaching. Involvement in this research provoked TAs to make the tacit knowledge that they were developing, explicit. Recognition of knowledge development occurred through the act of reflecting about their teaching during interviews. Through discussion and conversation during interviews, TAs were able to articulate and think about their learning process and knowledge development.

Consistent with Eraut and Hirsh's (2007) research, the majority of knowledge development took place through work processes. Using Eraut and Hirsh's table, where learning took place, the following shows what TAs identified as areas where learning occurred.

Work Processes with learning as a by-product	Learning Activities located within work or learning processes	Learning Processes at or near the workplace
<ol style="list-style-type: none"> 1. Participation in group processes (team meetings) 2. Working alongside others (while grading) 3. Consultation (course supervisor) 4. Tackling challenging tasks (grading and classroom management) 5. Problem-solving (grading and classroom management) 6. Trying things out (classroom management) 7. Consolidating, extending and refining skills (questioning techniques) 8. Working with students (in the classroom) 	<ol style="list-style-type: none"> 1. Asking questions (of other TAs) 2. Observing (other TAs) 3. Discretionary reflecting (only on critical incidents) 4. Learning from incidents in the classroom 5. Receiving feedback (from TAC and other TAs) 6. Use of mediating artifacts (feedback from students and colleagues) 	<ol style="list-style-type: none"> 1. Being supervised (course supervisor) 2. Being mentored (TAC) 3. TA Conferences 4. Self-directed

Table 10. *Typology of early career learning (Eraut & Hirsh, 2007, p. 25) with TA input.*

As the above table shows, the majority of learning took place through work processes and learning activities. The table clearly shows the lack of reflection, a concern with self-directed learning, which highlights the need to incorporate reflection into work processes.

Hatton and Smith (1995) identified different levels of reflection: descriptive writing (in journals), descriptive reflection, and dialogic reflection. TAs practiced a discretionary reflective practice, which was only directed at critical incidents. TAs primarily engaged in descriptive reflection during interviews. Nevertheless, some TAs, during the interviews with prompts by me, were able to enter into a more dialogic reflection by stepping back from the situation and

thinking about it from different perspectives. TAs' discretionary reflective practice on what they learned about teaching and student learning is summarized in Table 11.

Table 11. Knowledge development and learning needs of TAs.

Topic	Knowledge developed	Need to learn
Self	They know how to teach the subject matter Aspects of teaching important to them	How to teach differently and not rely on signature pedagogies Why those signature pedagogies are used
Instructional strategies	Beginning a lesson How to ask students questions Multi-modal representation of concepts Varying ways to support students' learning	Lesson plans Learning outcomes Active participation, such as more dialogue and students doing Classroom assessment New strategies
Classroom management	Learning environment as safe and active Importance of adaptability	Respond to student boredom Students socializing during class Engaging all students Students not speaking Building rapport with students Being clear and transparent about expectations
Students	Optimistic Lacked critical thinking skills Neglected homework Student diversity Important to make real world connections for them Student characteristics	Mental health support Interpersonal skills to connect with students
Grading	Impact on students' lives Grading for content rather than presentation	Marking Feedback

As can be seen from this table, by the end of the term, TAs identified just as many topics that they needed further instruction about as topics they learned.

The fact that TAs were learning about themselves as instructors is important for their development and identity as teachers. Teaching confirmed their content knowledge, which gave them confidence in teaching that subject. However, teaching made them question the typical strategies used to teach in their discipline, such as questioning signature pedagogies. Their first

experience teaching allowed them to now question aspects of teaching, something that none of them did previous to teaching.

The last part of the framework is:

Forthcoming	Development of reflective skills to become a reflective practioner
	Ongoing professional development

Figure 20. Framework for TA workplace curriculum development.

Summary.

TAs' knowledge development about teaching and student learning was solely dependent upon their experience, making forthcoming development of knowledge about teaching and student learning relegated to chance. Learning about teaching cannot be left to chance. Therefore, this section has shown how it is important to have several mechanisms in place to support TAs' learning to teach. For example, ongoing learning conversations about teaching that provoke individuals to reflect on teaching decisions and students' learning would contribute significantly to TAs' teaching development. This confirms previous research that has tried different mechanisms to promote reflection, such as Gallego's (2014) use of journals that helped TAs to:

- become more self-aware of their learning process,
- identify where they needed to improve, and
- reflect on their experiences as an instructor, all of which encouraged a deeper approach to learning.

Since the majority of decisions that TAs took were reactive, reflection is necessary to make their learning explicit and in developing their teacher subject position.

Chapter 6 Implications and Future Research

The research undertaken in this dissertation, through the lens of workplace learning, considers the learning process of new TAs as they embrace their first teaching role. As a new area of research, several implications to support graduate students as they first begin teaching in higher education are discussed below, as well as several areas for further inquiry. Since this is a new area of study, it brings in a particular focus from workplace learning theories to study TAs' learning to teach, while at the same time opening a whole new theoretical area to apply to TA work. Recommendations, derived from insights from this study that can inform and enhance programming and support for new TAs' teaching are provided in this chapter. The vast amount of knowledge required to teach well is beyond the scope of this discussion and is therefore limited to the focus of this research, TAs teaching in their first term. First, I discuss the implications from this research and then future research.

Implications from this Research

Due to TAs being a student and an employee at the same time, with the two often being conflated, TAs feel role ambiguity and liminality. This study has separated the student role from the teaching role by solely concentrating on the TA teaching role. This disentanglement allowed focussing on TA teaching as work so that TAs could share how they were learning to do their job in the academic workplace. Despite the complexities associated with graduate students being institutional employees, the stance taken in this research is that the graduate student role and employee role should not be conflated.

Individuals identify with many different roles each day and appropriately blend roles when suitable. A significant finding from this research is that the conflation of the graduate

student role and TA role is detrimental to the development of their teacher subject position. TAs in this research clearly indicated that the two roles were separate. For example, Reed explains:

Sometimes it takes a little while for them [students] to settle down and sometimes I have a little bit of difficulty handling that. Especially when it is the last thing I have on a really long day because at 4:20 my other class ends where I am a student and then 10 minutes later, I am actually teaching. It is not a lot of time for me to transition from one role to another.

Reed's statement exemplifies the reality of the distinct difference between the two roles and the complexity associated with transitioning roles. This does not negate the fact that all teachers are learning and that students can be teachers. These are different characteristics of each role. Reed's example confirms that TAs are aware that their TA role is distinct from their graduate student role, requiring different knowledge, skills, and ways of being.

More importantly, a long-term, rather than short-term, approach is required. Instead of treating TA work as strictly fulfilling department and course needs, TA work needs to be approached as professional development that is providing valuable experience for the future. No matter the career goals of TAs, they will be able to take the knowledge and skills that they develop in their TA work to future work. More important is that those who are considering an academic career, have the foundation of instruction and support required to develop as a teacher, an important aspect of fostering scholars in academia.

The focus on TA teaching as work brought together the two guiding concepts to this research: learning in the workplace and the complexity of learning to teach. TAs in this study readily acknowledged the complexity of both learning to teach and learning in the workplace after their first-term teaching. TAs felt the complexity but did not know how to articulate what

they were feeling. Instead, they would blame students or other factors for the issues and challenges they were encountering, setting a pattern in place that could potentially continue. However, through the mechanism of reflection, the source of these challenges and frustrations was realized: the complexity of teaching and insufficient foundational knowledge about teaching and how to support students' learning. As Chris states: "I didn't seem to be really prepared to be a teacher. To go to teacher's college or take a course, is what I think TAs need." This research identified several factors that contribute to the complexity of TAs learning to teach in the academic workplace that informs the implications suggested below: the necessity for deep learning in the academic workplace, which requires an expansive learning environment.

The necessity for deep learning in the academic workplace.

One of the findings of this research is that TAs are self-directed learners who take a passive approach to professional development. The problem identified with this approach is related to several factors:

- they bring strong conceptions about teaching and student learning to their teaching role, but
- their conceptions/espoused theories do not always align with their dispositions (their tendency to act in certain ways in situations), and further,
- they perform their teaching role from a student subject position.

It is important to address these factors so that a deep learning approach can be fostered. If not addressed, TAs will default to:

- confirming their existing conceptions,
- blaming students or others for challenges they face, and
- resort to a teaching-centred/content-oriented approach to teaching.

The findings from this study support a holistic, interleaved, curricular approach that incorporates opportunities for reflection and feedback to provoke deep embodied learning rather than an atomistic surface approach to learning how to teach in the academic workplace. This research agrees with Dall’Alba and Sandberg (2010), who argue it is not simply a matter of transfer of knowledge and skill but a deep understanding of practice that is required for learning how to teach with guided reflection and feedback as significant aspects of the curriculum. This research also confirms Hager’s (2008) view of learning in the workplace as a relational web. Thinking about a curricular approach suitable for TAs becoming teachers in a relational web, it is useful to reference what Shulman (2005) states about curricular programs: they are designed to promote participants to *think* like the discipline. For example, to think like a geologist, biologist, or other disciplinary program. Therefore, a curriculum for TAs should be designed so that *TAs think and act like a teacher* as they engage in an ongoing learning process of becoming teachers. To achieve that goal, an interleaved pedagogical curriculum that incorporates guided reflection and feedback through learning conversations, as ways to encourage deep learning for TAs, is discussed in the following sections. This approach encompasses becoming, being, and forthcoming (Chapter 5).

Becoming	Making espoused theories/conceptions (what individuals say they will do) explicit
	Identifying teaching and learning dispositions (what individuals actually do in practice)
	Consciously transitioning from a student subject position to a teacher subject position
Being	Guided self-directed learning with feedback and learning conversations that promote reflection
	Balanced affordances that are sequenced appropriately to support and encourage learning
	Transitioning from a teacher-centred/content-oriented to a student-centred/learning-oriented approach
	Developing and practicing pedagogical knowledge and skills
Forthcoming	Developing reflective skills to be a reflective practitioner
	Ongoing professional development

Figure 21. Framework for TA workplace curriculum development.

Interleaved pedagogical curriculum.

One of the first steps that is necessary is for TAs to have an understanding of the context in which they will be teaching, often referred to as enculturation or socialization. Through enculturation/socialization, people, such as TAs, begin forming social connections so that they can begin to build their identity in relation to the community (Austin, 2002; Boyd, 2010; Wenger, 1998).

As TAs are enculturated/socialized into their academic department and new role, Bridges (2009) reminds us of the difficulties associated with transitioning to a new role. As transition begins, first, one must give up some things, such as an old identity, to accommodate the new situation. Therefore, the first step of transition often begins with an ending and letting go of something. This means that the first aspect of a curriculum for TAs would require TAs to set aside their student role as they take on the teacher role. Step two is what Bridges (2009) terms as a neutral zone. This is the place where development of the new identity begins. This step cannot be rushed because the journey from one identity to another takes time. Since new beginnings bring unknowns and anxiety, a strong community and supportive mentors are required. TAs, as they take on their new role as a teacher, need a strong enculturation/socialization component built into the curriculum, such as a community of practice. That community provides the support TAs require in the neutral zone as they make their conceptions/espoused theories about teaching and student learning explicit and consider how their dispositions align or not with those conceptions.

In the workplace, an interleaved curriculum involves exposure to abstract knowledge combined with exposure to situations in which to use that knowledge. This may sound similar to just-in-time teaching but is different because an interleaved curriculum design does not atomize topics as stand-alone, and once taught, are not necessarily addressed again. Instead, an

interleaved curriculum revisits a topic often, interwoven with teaching experience, so that experience can be linked to theoretical concepts and leading to deeper learning (Allix, 2011). As “interleaved” suggests, sequencing is important and needs to provide new experiences, opportunities to practice, time to reflect, and, finally, time for feedback and learning conversations. This builds a continually occurring base of familiar and new experiences, time to refine and hone what has been learned (reflection and feedback), and the ability to connect theory with practice and practice with theory. An interleaved approach provides the opportunity to sequence the curriculum in this way and is particularly suitable for the workplace, since it emphasizes a process approach rather than product approach (Allix, 2011). With the emphasis on the learning process, the interleaved approach provides the structure to respond to TAs’ needs and a creative perspective to curriculum development required to be able to do that.

Eraut’s (2004) learning trajectories provides a useful focus to build an interleaved curriculum for TAs. The learning trajectories of academic knowledge and skills of research-based practice, personal development, and decision-making and problem-solving dominated TAs’ learning in their first term of teaching. Learning to teach in higher education, as with any area or field of study, has foundational concepts that set the path to learning that field. Four foundational or threshold concepts (Meyer & Land, 2003) identified as relevant to learning how to teach are: assessment for/as learning; learning-centred teaching; accommodation for diversity; and context-driven practice (Wilcox & Leger, 2013). In the learning trajectory of academic knowledge and skills of research-based practice, these foundational concepts become essential topics to address.

In the personal development category, TAs need to be self-aware of their conceptions and dispositions. In particular, this category confirms the need for TAs to possess the following

dispositions: to attend to others' perspectives, to consult and work with others, and to learn and improve one's practice. Since these are identified as particular dispositions important for TA work, curriculum needs to be designed to ensure these are included. The only way to identify if TAs hold these dispositions, is to conduct teaching observations. Mentors with teaching observation experience can conduct teaching observations. Other aspects in this trajectory, such as accessing relevant knowledge and expertise, and the ability to learn from experience, are also important for learning to teach.

The last learning trajectory is decision-making and problem-solving. TAs make a lot of decisions while teaching with most being reactive. To enable TAs to be proactive instead of reactive, there should be opportunities for TAs to engage with case studies and classroom scenarios to determine when to seek others' help, how to deal with the complexity of the work, how to analyze problems and generate options, and become aware of how they should make decisions under pressurized conditions. As TAs experience their own classroom scenarios, those can be brought to learning conversations for discussion.

To illustrate, the following diagram gives an example of what an interleaved curriculum would look like for a tutorial leader (one form of TA teaching work). As tutorial leaders, TAs would need to know how to facilitate discussion, plan a lesson (including how to write learning outcomes), motivate students, use classroom assessment techniques (CATs), evaluate student assignments (if required), how the tutorial fits into the course, and how to design rubrics (if not provided). Learning conversations and instruction are built around these topics as the tutorial leader is learning in the workplace. Each block in the diagram below represents opportunities for instruction and learning conversations with mentors. As can be seen in the example below, topics are addressed more than once, reflection is a constant feature, and teaching observations occur

throughout the term. Conducting teaching observations takes time but is a very effective mechanism to provide guidance for TAs as they are first learning how to teach.

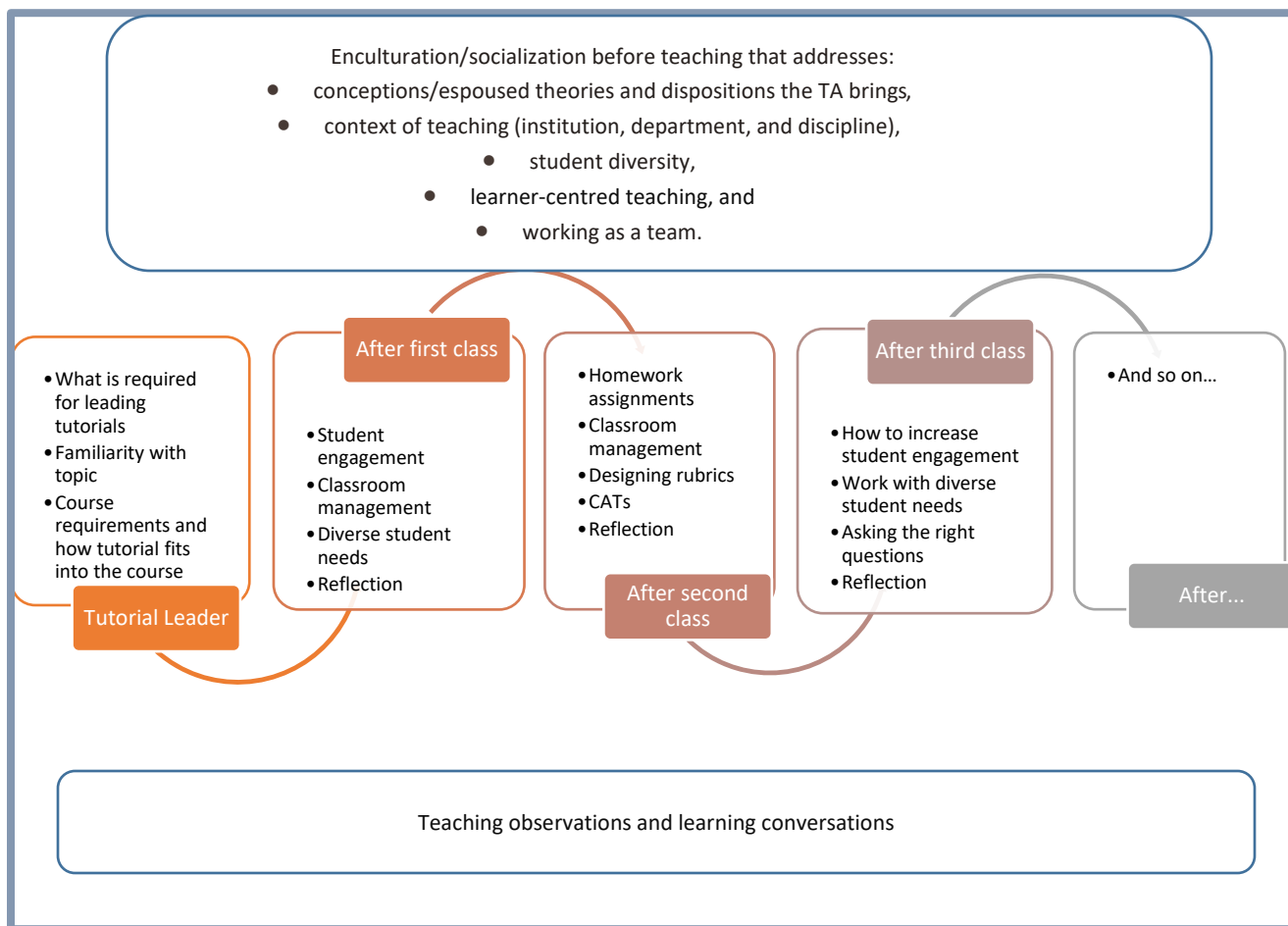


Figure 22. Interleaved curriculum for a tutorial leader.

This is just one example of an interleaved curriculum suitable for a TA who is a tutorial leader.

An interleaved curriculum, with its focus on where and how TAs are learning how to teach, encompasses the whole embodied learning process by linking the conceptual with the experiential. Reflection, established as an important feature of teaching development and learning in the workplace, is discussed next.

Reflection.

Reflection is the dominant mechanism used to learn in the workplace due to the embodied nature of learning at work, which leads to implicit learning and tacit knowledge development. Making tacit knowledge explicit is important so that practices can be scrutinized and developed. First, reflection is required so that individuals can access their learning biographies and see how they intersect with the new position. A useful reflective activity for those new to teaching is writing a teaching philosophy statement, which requires TAs to state their conceptions—assumptions, beliefs, and values—about teaching and student learning. Through reflection, TAs become self-aware of their conceptions and are encouraged to think about how they will impact their teaching role. The aim is to encourage development of an ongoing reflective practice.

As accomplished in this research, the complexity of learning how to teach is only fully realized through reflection. Without engaging in this research, TAs may have only reflected on critical incidents, if at all. Without the discussion and learning conversations that we engaged in during interviews, TAs, even though they experienced the complexity of teaching, would not have fully realized that complexity. TAs encountering challenges and issues in their TA work is ubiquitous, and especially so for those tasked with teaching. This study demonstrates the necessity for reflection in order for TAs to become aware of how their conceptions and dispositions affect teaching.

Becoming self-aware of their conceptions can then be directed to their dispositions. In this study, TAs' caring conception was challenged by their disposition for authority and control. Through self-awareness and reflective activities, TAs can become aware of their conceptions and how they align (or not) with their dispositions. First, individuals need to be aware of their conceptions—what they say they will do based on the values and beliefs they hold about

teaching and learning. Second, they need to be made aware of their dispositions, their actions, and how those align or not with their conceptions. Third, deliberate actions need to be put in place to address any mis-alignment. In particular, this is well-suited to analyze the ‘hot actions’ that take place while teaching, and provides a mechanism to address emotions that surface during teaching. Further, since individuals default to accessing prior experience rather than academic knowledge, through reflection and guidance, TAs can determine the source of knowledge that they used while making decisions when teaching.

The development of a teaching dossier is another mechanism to encourage reflection. A teaching dossier is a representation of one’s teaching approach with supporting evidence. It typically consists of a teaching narrative (or philosophy) statement and appendices that contain documentation associated with teaching work. For example, appendices can include lesson plans, student feedback, instructional materials developed, and video-recordings of teaching. The requirement of the development of a TA dossier would enhance the reflective abilities of TAs.

Feedback through learning conversations.

This research supports that talking with others is an essential process when learning how to teach (Roth & Tobin, 2001). Since feedback is one of the main mechanisms for learning in the workplace (Eraut & Hirsh, 2007), TAs need to have feedback about their teaching built into the TA workplace curriculum. Feedback promotes learning conversations. Learning conversations help push learners beyond simple reflection because they allow reflection to be taken further, not only for the individual but also into the workplace. This research confirms the need for learning conversations, considered as one of the most valuable activities when learning how to teach (Knight, Tait, & Yorke, 2006).

Therefore, a curriculum for TAs needs to be guided so that reflection on experience can help lead to conceptual change. Guidance should be provided through instruction, learning conversations with mentors during instruction and after teaching observations. To address dispositions, it is necessary to observe individuals' actions as they respond to situations. Through observation, a mentor can identify alignment (or not) between conceptions and dispositions and bring attention to the decisions the TA made while teaching.

The necessity for an expansive learning environment.

Austin (2002) states that “assistantship roles sometimes are structured more to serve institutional or faculty needs than to ensure a high-quality learning experience for graduate students” (p. 95). But as Eraut (2007) points out, factors that enhance learning are of strategic significance because they also enhance the quality of organizational performance. This means that an expansive learning environment in the academic workplace is beneficial to both TAs and the institution. An expansive learning environment encourages questioning, reflection, risk-taking, and acceptance of different views (Ellstrom, 2005). To promote deep learning in the workplace, an expansive high-quality learning environment is required (Fuller & Unwin, 2003).

If expansive affordances are provided in an expansive learning environment, individuals' work needs to be structured so that they can take advantage of opportunities provided. This research supports what is proposed in workplace literature as constituting an expansive learning environment. Learners are:

- actively participating and co-constructing knowledge in the workplace,
- potentially paid to engage in professional development,
- supported by a community of practice,
- assigned low-risk tasks first and high-risk tasks later (depending on the work),

- recognized as learners in their new work position,
- provided with clear learning goals and expectations detailed in a personal learning plan,
- provided with support materials for their work position, and
- receive feedback about their work.

In this study, TAs had the experience of diverse affordances or learning environments. Most TAs had what I termed, strategic affordances, meaning that support was designed to provide TAs with just enough information to perform the duties they were assigned but not enough to lead to deep learning. However, the strategic approach is only intended to meet the needs of the logic of production—getting the work done. As established in workplace learning research, there needs to be a balance between production and development. This means that TAs require more than a strategic approach so that they can become quality teachers to support undergraduates' learning.

In summary, by making an interleaved curriculum a mandatory feature of TA work, an expansive learning environment is achieved. The provision of learning plans and mentors in the workplace provides the framework that new TAs need to navigate their learning as they take on their first teaching position. The TA workplace interleaved curriculum provides the developmental aspect of a workplace (as opposed to strictly adaptive) that acknowledges TAs' being, becoming, and forthcoming as teachers in higher education.

Further Research

There is the need for further research into the complex nature of TAs' teaching in higher education in the academic workplace. Currently, most research is directed toward measuring the impact of programs. This is a good thing but more research that focuses on TAs and what they are actually doing is needed. In particular, a focus on the transition from a student subject

position to a teacher subject position would help determine multiple ways to navigate the development of a teaching identity in higher education from the very beginning of learning how to teach.

TAs in this study made a lot of decisions while teaching. Further research is required into TAs' decision-making to identify the knowledge sources they access. This would help determine how to best link conceptual knowledge in practice and practical knowledge to conceptual.

Taking a workplace learning approach to study TAs' teaching, as accomplished in this research, is an area that needs further research. I direct interested individuals to engage with workplace learning literature to find the questions that they are most interested. For example, as shown in this research, how work is structured can have significant impacts on how the work is rendered. Research is lacking in this area. More research is required as to how departments and those responsible for structuring TA work determine what aspects of teaching TAs are assigned. Further, research into the impact of feedback regarding teaching observations of TAs is required to determine how teaching observations and feedback contribute to the development of teachers in higher education.

Although research exists about graduate student identity development, further research is required about development of a teaching identity that starts with TAs as they first begin teaching. I would argue that it would not matter if the TA is responsible for a classroom, since any aspect related to teaching, is an important place to start.

Furthermore, more research regarding TAs' conceptions and their alignment with dispositions is required. Calling for further research into conceptions is not new but specifically looking at the interaction between TAs' conceptions and dispositions and how that impacts their learning to teach, is an area that needs further investigation.

Self-directed learning is another area of interest but there is little research on self-directed learning in the workplace. Since learning to teach in higher education is primarily self-directed, further research is required to look specifically at the different mechanisms that TAs are using to self-direct their learning. This could lead to development of resources that better address TAs' learning to teach.

Conclusion

This study set out to offer insights into how to support new TAs in their teaching role in higher education and as future academics. It supports the fact that teaching is a higher-order thinking process (Dall'Alba, 2005) that requires critical thinking and problem-solving skills (Gibbs & Coffey, 2000). As such, two guiding concepts informed the approach taken: learning in the workplace and the complexity of learning to teach. It was shown that rather than an adaptive restrictive strategic approach to supporting TAs, a developmental expansive deep approach is required to address the higher-order thinking process that is required for learning how to teach.

Taking a workplace learning approach to TA work successfully showed that learner characteristics, the learning process, and knowledge development occurred while learning on-the-job. The importance of an expansive learning workplace that includes an interleaved curriculum shows that TAs can be supported in their learning about teaching.

Coupled with the complicated task of teaching, findings from this research show that TAs come with strong conceptions and dispositions related to their teaching work that need to be addressed before they step into the classroom. More importantly, TAs need support in learning how to reflect so that they can develop as reflective practitioners. To accomplish and address these factors, instruction, learning conversations, and teaching observations are important mechanisms to achieve a holistic approach to learning to teach.

Lastly, all of the above together emphasize the importance of developing an expansive interleaved curriculum in the academic workplace that supports TAs as they embark on their learning to teach journey. These findings inform the work that we do at the University of Victoria. Our aim is to provide the best possible support for TAs learning to teach so that our undergraduates are supported in their learning and to foster excellence in teaching. There is still much work to be done but this research has greatly contributed to that end.

Bibliography

- Addy, T. M., & Blanchard, M. R. (2010). The problem with reform from the bottom up: Instructional practises and teacher beliefs of graduate teaching assistants following a reform-minded university teacher certificate programme. *International Journal of Science Education*, 32(8), 1045-1071. <https://doi.org/10.1080/09500690902948060>
- Ainley, P., & Rainbird, H. (1999). *Apprenticeship: Towards a new paradigm of learning*. London: Kogan Page.
- Akerlind, G. S. (2003). Growing and developing as a university teacher: Variation in meaning. *Studies in Higher Education*, 28(4), 375-390. <https://doi.org/10.1080/0307507032000122242>
- Allix, N. M. (2011). Knowledge and workplace learning. In M. Malloch, L. Cairns, K. Evans, & B. N. O'Connor (Eds.), *The SAGE handbook of workplace learning: Theories of work, place and learning: New directions* (pp. 132-145). Los Angeles, CA: SAGE. <http://dx.doi.org/10.4135/9781446200940>
- Ambrose, S. A., Lovett, M., Bridges, M. W., DiPietro, M., & Norman, M. K. (2010). *How learning works: Seven research-based principles for smart teaching*. San Francisco, CA: Jossey-Bass.
- Amundsen, C., & Wilson, M. (2012). Are we asking the right questions?: A conceptual review of the educational development literature in higher education. *Review of Educational Research*, 82(1), 90-126. <https://doi.org/10.3102/0034654312438409>
- Argyris, C. (1995). Action science and organizational learning. *Journal of Managerial Psychology*, 10(6), 20-26. <https://doi.org/10.1108/02683949510093849>
- Argyris, C., & Schön, D. (1974) *Theory in practice: Increasing professional effectiveness*. San Francisco, CA: Jossey-Bass.
- Ashavskaya, E. (2015). International teaching assistants' experiences in the U.S. classrooms: Implications for practice. *Journal of the Scholarship of Teaching and Learning*, 15(2), 56-69. <https://doi.org/10.14434/josotl.v15i2.12947>
- Austin, A. E. (2002). Preparing the next generation of faculty: Graduate school as socialization to the academic career. *The Journal of Higher Education*, 73(1), 94-122. doi:10.1353/jhe.2002.0001
- Bain, J. D., Ballantyne, R., Mills, C., & Lester, N. C. (2002). *Reflecting on practice: Student teachers' perspectives*. Flaxton, Qld, Australia: Post Pressed.
- Barnett, R., & Guzman-Valenzuela, C. (2017). Sighting horizons of teaching in higher

- education. *Higher Education*, 73, 113-126. <https://doi.org/10.1007/s10734-016-0003-2>
- Bauer, J., Festner, D., Gruber, H., Harteis, C., & Heid, H. (2004). The effects of epistemological beliefs on workplace learning. *The Journal of Workplace Learning*, 16(5), 284-292. <https://doi.org/10.1108/13665620410545561>
- Beauchamp, C., & Thomas, L. (2011). New teachers' identity shifts at the boundary of teacher education and initial practice. *International Journal of Educational Research*, 50, 6-13. <https://doi.org/10.1016/j.ijer.2011.04.003>
- Beckett, D. (2002). Hot action at work: A different understanding of "understanding." *New Directions for Adult & Continuing Education*, 2001(92), 73-84.
- Bellows, L. (2008). Graduate student professional development: Defining the field. *Studies in Graduate & Professional Student Development*, 11(2), 2-19.
- Benassi, V. A., & Buskist, W. (2012). Preparing the new professoriate to teach. In V. A. Benassi and W. Buskist (Eds.), *Effective college and university teaching: Strategies and tactics for the new professoriate* (pp. 1-8). Thousand Oak, CA: SAGE.
- Berg, S. A., & Chyung, S. Y. (2008). Factors that influence informal learning in the workplace. *Journal of Workplace Learning*, 20(4), 229-244. <https://doi.org/10.1108/13665620810871097>
- Bernard, H. R. (2002). *Research methods in anthropology: Qualitative and quantitative approaches* (3rd ed.). Walnut Creek, CA: Altamira.
- Berry, D., & Korpan, C. (2009). Fly on the wall. *Collected Essays in Learning & Teaching*, 2, 5 pages, Society for Teaching and Learning in Higher Education.
- Biggs, J. B. (1987). *Student approaches to learning and studying*. Hawthorn, Australia: Australian Council for Educational Research.
- Billett, S. (1998). Understanding workplace learning: Cognitive and sociocultural perspectives. In D. Boud (Ed.), *Current issues and new agendas in workplace learning* (pp. 43-59). Leabrook, Australia: National Centre for Vocational Education Research.
- Billett, S. (2000). Guided learning at work. *Journal of Workplace Learning*, 12(7), 272-285. <https://doi.org/10.1108/13665620010353351>
- Billett, S. (2001a). Co-participation: Affordance and engagement at work. *New Directions for Adult and Continuing Education*, 92, 63-72. <https://doi.org/10.1002/ace.41>
- Billett, S. (2001b). Learning through work: Workplace affordances and individual engagement. *Journal of Workplace Learning*, 13(5), 209-214.

<https://doi.org/10.1108/EUM0000000005548>

- Billett, S. (2002). Workplace pedagogic practices: Co-participation and learning. *British Journal of Educational Studies*, 50(4), 457-481.
<https://doi.org/10.1111/1467-8527.t01-2-00214>
- Billett, S. (2006). Work, subjectivity and learning. In S. Billett, T. Fenwick, and M. Somerville (Eds.), *Work, subjectivity and learning: Understanding learning through working life* (pp. 1-20). Dordrecht, NL: Springer.
- Billett, S. (2008). Subjectivity, learning and work: Sources and legacies. *Vocations and Learning*, 1, 149-171. <https://doi.org/10.1007/s12186-008-9009-y>
- Billett, S. (2009). Realising the educational worth of integrating work experiences in higher education. *Studies in Higher Education*, 34(7), 827-843.
<https://doi.org/10.1080/03075070802706561>
- Billett, S. (2011). Subjectivity, self and personal agency in learning through and for work. In M. Malloch, L. Cairns, K. Evans, & B. N. O'Connor (Eds.), *The SAGE handbook of workplace learning: Theories of work, place and learning: New directions* (pp. 60-70). Los Angeles, CA: SAGE. <http://dx.doi.org/10.4135/9781446200940>
- Billett, S., & Somerville, M. (2004). Transformations at work: Identity and learning. *Studies in Continuing Education*, 26(2), 309-326.
- Bishop-Williams, K. E., Roke, K., Aspenlieder, E., & Troop, M. (2017). Graduate student perspectives of interdisciplinary and disciplinary programming for teaching development. *The Canadian Journal for the Scholarship of Teaching and Learning*, 8(3), article 11.
- Black, B., & Kaplan, M. (1998). Evaluating TAs' teaching. In M. Marincovich, J. Prostko, & F. Stout (Eds.), *The professional development of graduate teaching assistants* (pp. 213-234). Bolton, MA: Anker.
- Blouin, D. D., & Moss, A. R. (2015). Graduate student teacher training: Still relevant (and missing?) 20 years later. *Teaching Sociology*, 43(2), 126-136.
<https://doi.org/10.1177/0092055X14565516>
- Boice, R. (1996). *First-order principles for college teachers: Ten basic ways to improve the teaching process*. Bolton, MA: Anker.
- Bolton, G., & Delderfield, R. (2018). *Reflective practice: Writing and professional Development* (5th ed.). London, UK: SAGE.
- Boman, J. (2008). *Outcomes of a graduate teaching assistant training program* (Unpublished doctoral dissertation). London, ON: Western University.

- Border, L. L. B. (2010). Introduction: Context and content in the preparation of future faculty. *Studies in Graduate and Professional Student Development*, 13, xi-xv.
- Boud, D., & Brew, A. (2017). Learning to teach as the development of practice. In B. Leibowitz, V. Bozalek, & P. Kahn (Eds.), *Theorising learning to teach in higher education* (pp. 77-92). London, UK: Routledge.
- Boud, D., Cressey, P., & Docherty, P. (2005). *Productive reflection at work*. London: Routledge.
- Boud, D., Keogh, R., & Walker, D. (1985). Promoting reflection in learning: A model. In D. Boud, R. Keogh, & D. Walker (Eds.), *Reflection: Turning Experience into Learning* (pp. 18-40). New York, NY: Kogan Page.
- Boyd, P. (2010). Academic induction for professional educators: Supporting the workplace learning of newly appointed lecturers in teacher and nurse education. *International Journal of Academic Development*, 15(2), 155-165.
<https://doi.org/10.1080/13601441003738368>
- Boyd, P., Smith, C., & Ilhan Beyaztas, D. (2015). Evaluating academic workplaces: The hyper-expansive environment experienced by university lecturers in professional fields. *International Journal of Academic Development*, 20(1), 18-32.
<https://doi.org/10.1080/1360144X.2014.948255>
- Boyer, E. L. (1990). *Scholarship reconsidered: Priorities of the professoriate*. Princeton, NJ: Carnegie Foundation for the Advancement of Teaching.
- Branstetter, S. A., & Handelsman, M. M. (2000). Graduate teaching assistants: Ethical training, beliefs, and practices. *Ethics & Behavior*, 10(1), 27-50.
https://doi.org/10.1207/S15327019EB1001_3
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. DOI: 10.1191/1478088706qp063oa
- Bridges, W. (2009). *Managing transitions: Making the most of change*. Boston, MA: Da Capo Lifelong Books.
- Britzman, D. P. (2003). *Practice makes practice: A critical study of learning to teach*, (Revised ed.). Albany, NY: State University of New York.
<https://doi.org/10.1177/027046769301300158>
- Brookfield, S. D. (2010). Critical reflection as an adult learning process. In N. Lyons (Ed.), *Handbook of reflection and reflective inquiry: Mapping a way of knowing for professional reflective inquiry* (pp. 215-236). Cork, Ireland: Springer. DOI: 10.1007/978-0-387-85744-2_11

- Brookfield, S. D. (2017). *Becoming a critically reflective teacher* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Brookes, M., & Becket, N. (2007). Quality management in higher education: A review of international issues and practice. *International Journal of Quality Standards*, 1(1), 85-121.
- Bubbar, K., Dimopoulos, A., Korpan, C., & Wild, P. (2017). An overview of the teaching assistant consultant program for developing competency in novice engineering graduate teaching assistants. Proceedings from CEEA '17: *Canadian Engineering Education Association Conference*. Toronto, ON: University of Toronto.
- Cairns, L. (2011). Learning in the workplace: Communities of practice and beyond. In M. Malloch, L. Cairns, K. Evans, & B. N. O'Connor (Eds.), *The SAGE handbook of workplace learning: Theories of work, place and learning: New directions* (pp. 73-83). Los Angeles, CA: SAGE. <http://dx.doi.org/10.4135/9781446200940>
- Calkins, S., & Kelley, M. R. (2005). Mentoring and the faculty-TA relationship: Faculty perceptions and practices. *Mentoring & Tutoring: Partnership in Learning*, 13(2), 259-280. DOI: 10.1080/13611260500105915
- Candy, P., & Matthews, J. (1998). Fusing learning and work: Changing conceptions of workplace learning. In D. Boud (Ed.), *Current issues and new agendas in workplace learning* (pp. 12-29). Adelaide, AU: National Centre for Vocational Education Research.
- Cassidy, A., Dee, J., Lam, V. K. Y., Welsh, A., & Fox, J. (2014). Teaching assistants thrive in a collaborative team: A TA development case study. *Transformative Dialogues: Teaching and Learning Journal*, 7(2), 1-14.
- Chandler, E. O. (2011). Graduate and professional student development: The role of the pedagogy course. *Studies in Graduate and Professional Student Development*, 14, 69-86.
- Chism, N. (1998a). Evaluating TA programs. In M. Marincovich, J. Prostko, & F. Stout (Eds.), *The professional development of graduate teaching assistants* (pp. 249-262). Bolton, MA: Anker.
- Chism, N. (1998b). Preparing graduate students to teach: Past, present, and future. In M. Marincovich, J. Prostko, & F. Stout (Eds.), *The professional development of graduate teaching assistants* (pp. 1-17). Bolton, MA: Anker.
- Cho, Y., Kim, M., Svinicki, M. D., & Decker, M. L. (2011). Exploring teaching concerns and characteristics of graduate teaching assistants. *Teaching in Higher Education*, 16(3), 267-279. <https://doi.org/10.1080/13562517.2010.524920>
- Colley, H., Hodkinson, P., & Malcom, J. (2003). *Informality and formality in learning: A*

report for the Learning and Skills Research Centre. London, UK: Learning and Skills Research Centre.

- Corbin, J., & Strauss, A. (2008). Introduction to context, process, and theoretical integration. In *Basics of qualitative research (3rd ed.): Techniques and procedures for developing grounded theory* (pp. 87-116). Thousand Oaks, CA: SAGE.
<https://dx.doi.org/10.4135/9781452230153.n1>
- Cosnefroy, L., & Buhot, E. (2013). Workplace learning impact: An analysis of French-secondary-trainee teachers' perception of their professional development. *Teachers and Teaching: theory and practice*, 19(6), 679-694.
<https://doi.org/10.1080/13540602.2013.827456>
- Coy, M. W. (Ed.). (1989). *Apprenticeship: From theory to method and back again*. Albany, NY: State University of New York.
- Creswell, J. W. (2013). *Qualitative inquiry and research design* (3rd ed.). Thousand Oaks, CA: SAGE.
- Criniti Phillips, A., Hansen, S., & Willingham-McLain, L. (2011). Leveraging existing PFF resources to create a certificate of university teaching. *Studies in Graduate and Professional Student Development*, 14, 125-145.
- Cummins, L., & Asempapa, B. (2013). Fostering teacher candidate dispositions in teacher education programs. *Journal of the Scholarship of Teaching and Learning*, 13(3), 99-119.
- Cunningham, J., & Hillier, E. (2013). Informal learning in the workplace: Key activities and processes. *Education + Training*, 55(1), 37-51.
<https://doi.org/10.1108/00400911311294960>
- Dall'Alba, G. (2005). Improving teaching: Enhancing ways of being university teachers. *Higher Education Research & Development*, 24(4), 361-372.
- Dall'Alba, G., & Sandberg, J. (2010). Learning through and about practice: A lifeworld perspective. In S. Billett (Ed.), *Learning through practice: Models, traditions, orientations and approaches* (pp. 104-119). Dordrecht, NL: Springer.
- Darling, A. L., & Dewey, M. L. (1990). Teaching assistant socialization: Communication with peer leaders about teaching and learning. *Teaching & Teacher Education*, 6(4), 315-326. [https://doi.org/10.1016/0742-051X\(90\)90024-Y](https://doi.org/10.1016/0742-051X(90)90024-Y)
- Darrah, C. (1996). *Learning and work: An exploration in industrial ethnography*. New York, NY: Garland.
- Dawe, N., Harris, J., Stevenson, M., Tihanyi, D., Balouchestani Asli, N., Bouchard, J.,

- Busby, C., & Shaayegan, V. (2016). Engineers teaching communication: Evaluating the impact of TA training on graduate student communication, teaching and professional development. *Canadian Engineering Education Association*, 16(062), 1-8.
- Dawson, D. L., Dimitrov, N., Meadows, K. N., & Olsen, K. (2013). *Bridging the gap: The impact of the 'Teaching in the Canadian Classroom' program on the teaching effectiveness of international teaching assistants*. Toronto: Higher Education Quality Council of Ontario. Retrieved from <http://www.heqco.ca/en-ca/Research/ResPub/Pages/Bridging-the-Gap-The-Impact-of-the-Teaching-in-the-Canadian-Classroom-Program.aspx>
- de Boer, H., Timmermans, A. C., van der Werf, M. P. C. (2018). The effects of teacher expectation interventions on teachers' expectations and student achievement: Narrative review and meta-analysis. *Educational Research and Evaluation*, 24(3-5), 180-200. <https://doi.org/10.1080/13803611.2018.1550834>
- DeWalt, K. M., & DeWalt, B. R. (2011). *Participant observation: A guide for fieldworkers* (2nd ed.). Plymouth, UK: Altamira.
- Denzin, N. K., & Lincoln, Y. S. (2005). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (pp. 1-32). Thousand Oaks, CA: SAGE.
- Dewey, J. (1938). *Experience and education*. New York, NY: Collier Books.
- Dimitrov, N., Dawson, D. L., Olsen, K. C., & Meadows, K. N. (2014). Developing the intercultural competence of graduate students. *Canadian Journal of Higher Education*, 44(3), 86-103.
- Dimitrov, N., Meadows, K., Kustra, E., Ackerson, T., Prada, L., Baker, N., Boulos, P., McIntyre, G., Potter, M. K. (2013). *Assessing graduate teaching development programs for impact on future faculty*. Toronto: Higher Education Quality Council of Ontario.
- Edwards, A. (2005). Relational agency: Learning to be a resourceful practitioner. *International Journal of Educational Research*, 43, 168-182. <https://doi.org/10.1016/j.ijer.2006.06.010>
- Ellstrom, P. (2001). Integrating learning and work: Problems and prospects. *Human Resource Development Quarterly*, 12(4), 421-435. <https://doi.org/10.1002/hrdq.1006>
- Ellstrom, P. (2010). Practice-based innovation: A learning perspective. *Journal of Workplace Learning*, 22(1-2), 27-40. <https://dx.doi.org/10.1108/13665621011012834>
- Ellstrom, P. (2011). Informal learning at work: Conditions, processes and logic. In M.

- Malloch, L. Cairns, K. Evans, & B. N. O'Connor (Eds.), *The SAGE handbook of workplace learning: Theories of work, place and learning: New directions* (pp. 105-116). Los Angeles, CA: SAGE. <http://dx.doi.org/10.4135/9781446200940>
- Emmioglu, E., McAlpine, L., & Amundsen, C. (2017). Doctoral students' experiences of feeling (or not) like an academic. *International Journal of Doctoral Studies*, *12*, 73-90. <https://doi.org/10.28945/3727>
- Engeström, Y. (2008). *From teams to knots: Activity-theoretical studies of collaboration and learning at work*. Cambridge, UK: Cambridge University.
- Entwistle, N., & Ramsden, P. (1983). *Understanding student learning*. London, UK: Croom Helm.
- Entwistle, N., & Walker, P. (2000). Strategic alertness and expanded awareness within sophisticated conceptions of teaching. *Instructional Science*, *28*, 335-361. <https://doi.org/10.1023/A:1026579005505>
- Eraut, M. (1994). *Developing professional knowledge and competence*. London, UK: Falmer.
- Eraut, M. (2000). Non-formal learning and tacit knowledge in professional work. *British Journal of Educational Psychology*, *70*, 113-136. <https://doi.org/10.1348/000709900158001>
- Eraut, M. (2004). Informal learning in the workplace. *Studies in Continuing Education*, *26*(2), 247-273.
- Eraut, M. (2007). Learning from other people in the workplace. *Oxford Review of Education*, *33*(4), 403-422. <https://doi.org/10.1080/03054980701425706>
- Eraut, M. (2011). Informal learning in the workplace: Evidence on the real value of work-based learning (WBL). *Development and learning in organizations: An International Journal*, *25*(5), 8-12. doi:10.1108/14777281111159375
- Eraut, M., & Hirsh, W. (2007). *The significance of workplace learning for individuals, groups and organizations*. Oxford, UK: University of Oxford (SKOPE Monograph 6).
- Eraut, M., Steadman, S., Furner, J., Maillardet, F., Miller, C., Ali, A., & Blackman, C. (2004). *Learning in the professional workplace: Relationships between learning factors and contextual factors*. Proceedings from AERA '04: Division 1 Paper Session. San Diego, CA: American Educational Research Association.
- Eteläpelto, A., & Saarinen, J. (2006). Developing subjective identities through collective participation. In S. Billett, T. Fenwick, and M. Somerville (Eds.), *Work, subjectivity and learning: Understanding learning through working life* (pp. 157-77). Dordrecht, NL: Springer.

- Evans, K. (2007). Concepts of bounded agency in education, work, and the personal lives of young adults. *International Journal of Psychology*, 42(2), 85-93.
<https://doi.org/10.1080/00207590600991237>
- Evans, K., Guile, D., & Harris, J. (2011). Rethinking work-based learning: For education professionals and professionals who educate. In M. Malloch, L. Cairns, K. Evans, & B. N. O'Connor (Eds.), *The SAGE Handbook of workplace learning: Theories of work, place and learning: New directions* (pp. 149-160). Los Angeles, CA: SAGE.
<http://dx.doi.org/10.4135/9781446200940>
- Evans, K., Kersh, N., & Sakamoto, A. (2004). Learner biographies: Exploring tacit dimensions of knowledge and skills. In H. Rainbird, A. Fuller, & H. Munro, (Eds.), *Workplace learning in context* (pp. 222-241). London: Routledge.
- Fagen, A. P., & Suedkamp Wells, K. M. (2004). The 2000 national doctoral program survey: An on-line study of students' voices. In A. E. Austin & D. H. Wulff (Eds.), *Paths to the professoriate: Strategies for enriching the preparation of future faculty* (pp. 74-89). San Francisco, CA: Jossey Bass.
- Feeney, E. J. (2016). How an orientation to learning influences the expansive-restrictive nature of teacher learning and change. *Teacher Development*, 20(4), 458-481.
<https://doi.org/10.1080/13664530.2016.1161659>
- Feezel, J.D., & Myers, S. (1997). Assessing graduate assistant teacher communication concerns. *Communication Quarterly*, 45(3), 110-124.
<https://doi.org/10.1080/01463379709370055>
- Fenwick, T., (2001). Tides of change: New themes and questions in workplace learning. *New Directions for Adult and Continuing Education*, 92, 3-17.
<https://doi.org/10.1002/ace.36>
- Fenwick, T. (2003). Professional growth plans: Possibilities and limitations of an organizational employee development strategy. *Human Resource Development Quarterly*, 14(1), 59-77. <https://doi.org/10.1002/hrdq.1050>
- Fenwick, T., (2006). Escaping/becoming subjects: Learning to work the boundaries of boundaryless work. In S. Billett, T. Fenwick, & M. Somerville (Eds.), *Work, subjectivity and learning: Understanding learning through working life* (pp. 21-36). Dordrecht, NL: Springer.
- Fenwick, T. (2008). Workplace learning: Emerging trends and new perspectives. *New Directions for Adult and Continuing Education*, 119, 17-26.
<https://doi.org/10.1002/ace.302>
- Fenwick, T. (2010). Workplace 'learning' and adult education: Messy objects, blurry

- maps and making difference. *European Journal for Research on the Education and Learning of Adults*, 1(1-2), 79-95.
- Fenwick, T., & Somerville, M. (2006). Work, subjectivity and learning: Prospects and issues. In S. Billett, T. Fenwick, & M. Somerville (Eds.), *Work, subjectivity and learning: Understanding learning through working life* (pp. 247-65). Dordrecht, NL: Springer.
- Ferry, N. M., & Ross-Gordon, J. M. (1998). An enquiry into Schön's epistemology of practice: Exploring links between experience and reflective practice. *Adult Education Quarterly*, 48(2), 98-112. <https://doi.org/10.1177/074171369804800205>
- Filstad, C. (2004). How newcomers use role models in organizational socialization. *The Journal of Workplace Learning* 16(7), 396-409. <https://doi.org/10.1108/13665620410558297>
- Fisher, L., Godden, L., Golparian, S., Haque, A., Keating, B., Korpan, C., Sheffield, S. L., Riel, A., Skorobohacz, C., Verwoord, R., & West, K. (Eds.) (2015). Introduction to quality enhancement: Teaching preparation for graduate teaching assistants. *Canadian Journal of Higher Education*, 45(3), i-viii.
- Fitzgerald, W. (1992). Training versus development. *Training & Development*, May, 81-84.
- Fitzmaurice, M. (2010). Considering teaching in higher education as a practice. *Teaching in Higher Education*, 15(1), 45-55. <https://doi.org/10.1080/13562510903487941>
- Fraser, W. J., & Killen, R. (2003). Factors influencing academic success or failure of first-year and senior university students: Do education students and lecturers perceive things differently? *South African Journal of Education*, 23(4) 254-260. <http://hdl.handle.net/2263/4892>
- Fuller, A. (2006). Participative learning through work: Apprenticeship and part-time higher education. *European Journal of Vocational Training*, 37(1), 68-80.
- Fuller, A., & Unwin, L. (2003). Learning as apprentices in the contemporary UK workplace: Creating and managing expansive and restrictive participation. *Journal of Education and Work*, 16(4), 407-426. <https://doi.org/10.1080/1363908032000093012>
- Fuller, A., Hodkinson, H., Hodkinson, P. and Unwin, L. (2005). Learning as peripheral participation in communities of practice: A reassessment of key concepts in workplace learning. *British Educational Research Journal*, 31(1), 49-68. <https://doi.org/10.1080/0141192052000310029>
- Fuller, F. F. (1969). Concerns of teachers: A developmental conceptualization. *American Educational Research Journal*, 6(2), 207-226.

<https://doi.org/10.3102/00028312006002207>

- Gaff, J., Pruitt-Logan, A., Sims, L. Denecke, D., & PFF participants. (2003). *Preparing future faculty in the humanities and social sciences: A guide for change*. Washington, D.C.: CGS.
- Gallego, M. (2014). Professional development of graduate teaching assistants in faculty-like positions: Fostering reflective practices through reflective teaching journals. *Journal of the Scholarship of Teaching and Learning*, 14(2), 96-110.
- Gardner, G. E., & Jones, M. G. (2011). Pedagogical preparation of the science graduate teaching assistant: Challenges and implications. *Science Educator*, 20(2), 31-41.
- Garland, T. N. (1983). A training program for graduate teaching assistants: The experiences of one department. *Teaching Sociology*, 10(4), 487-503.
DOI: 10.2307/1317297
- Gibbs, G., & Coffey, M. (2000). Training to teach in higher education: A research agenda. *Teacher Development*, 4(1), 31-44.
<https://doi.org/10.1080/13664530000200103>
- Goertzen, R. M., Scherr, R. E., & Elby, A. (2010). Respecting tutorial instructors' beliefs and experiences: A case study of a physics teaching assistant. *Physical Education Research*, 6, 020125, 1-11. <https://doi.org/10.1103/PhysRevSTPER.6.020125>
- Golde, C. M., & Dore, T. M. (2001). *At cross purposes: What the experiences of today's doctoral students reveal about doctoral education*. Philadelphia, PA: Pew Charitable Trusts.
- Golde, C. M., & Dore, T. M. (2004). The survey of doctoral education and career preparation: The importance of disciplinary contexts. In D. H. Wulff & A. E. Austin (Eds.), *Paths to the professoriate: Strategies for enriching the preparation of future Faculty* (pp. 19-45). San Francisco, CA: Jossey Bass.
- Gorsuch, G. (Ed.) (2012). *Working theories for teaching assistant development: Time-tested & robust theories, frameworks, & models for TA & ITA learning*. Stillwater, OK: New Forums.
- Gourlay, G., & Korpan, C. (2018). Genuine students as partners: How a teaching assistant consultant program put students as partners into practice. *International Journal for Students as Partners*, 2(2), 106-114.
<https://doi.org/10.15173/ij sap.v2i2.3567>
- Green, J. L. (2010). Teaching highs and lows: Exploring university teaching assistants' experiences. *Statistics Education Research Journal*, 9(2), 108-122.

- Gretton, A. L., Bridges, T., & Fraser, J. M. (2017). Transforming physics educator identities: TAs help TAs become teaching professionals. *American Journal of Physics*, 85(5), 381-391. <https://doi.org/10.1119/1.4978035>
- Grose, J. D. (2011). *TA tales: [Re]storying the teaching and learning experiences of university teaching assistants* (Unpublished doctoral dissertation). Brock University, Canada.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: SAGE.
- Guba, E. G., & Lincoln, Y. S. (2005). Paradigmatic controversies, contradictions, and emerging influences. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed.) (pp. 191-215). Thousand Oaks, CA: SAGE.
- Gunn, V. (2007). What do graduate teaching assistants' perceptions of pedagogy suggest about current approaches to their vocational development? *Journal of Vocational Education and Training*, 59(4), 535-549. <https://doi.org/10.1080/13636820701650992>
- Gunn, V., & Fisk, A. (2013). *Considering teaching excellence in higher education: 2007-2013: A literature review since the CHERI Report 2007*. York. Retrieved from https://www.heacademy.ac.uk/system/files/resources/TELR_final_acknowledgements.pdf
- Hager, P. (2004). The conceptualization and measurement of learning at work. In H. Rainbird, A. Fuller, A. Munro (Eds.), *Workplace learning in context* (pp. 242-258). London, UK: Routledge.
- Hager, P. (2005). Current theories of workplace learning: A critical assessment. In N. Bascia, A. Cumming, A. Datnow, K. Leithwood, D. Livingstone, (Eds.), *International handbook of educational policy* (pp. 829-846). Springer International Handbooks of Education, 13. Dordrecht, NL: Springer.
- Hager, P. (2008). Learning and metaphors. *Medical Teacher*, 30(7), 679-686. <https://doi.org/10.1080/01421590802148899>
- Hager, P. (2011). Theories of workplace learning. In M. Malloch, L. Cairns, K. Evans, & B. N. O'Connor (Eds.), *The SAGE handbook of workplace learning: Theories of work, place and learning: New directions* (pp. 17-29). Los Angeles, CA: SAGE. <http://dx.doi.org/10.4135/9781446200940>
- Hager, P., & Halliday, J. (2006). *Recovering informal learning: Wisdom, judgement and community*. Dordrecht, NL: Springer.
- Hager, P., & Hodkinson, P. (2009). Moving beyond the metaphor of transfer of learning. *British Educational Research Journal*, 35(4), 619-638.

<https://doi.org/10.1080/01411920802642371>

- Hainline, L. (2001). Teaching in the university setting: A course for teaching assistants. In L. R. Prieto & S. A. Meyers (Eds.), *The teaching assistant training handbook: How to prepare TAs for their responsibilities* (pp. 51-69). Stillwater, OK: New Forums.
- Harrison, J. K., Lawson, T., & Wortley, A. (2005). Mentoring the beginning teacher: Developing professional autonomy through critical reflection on practice. *Reflective Practice: International and Multidisciplinary Perspectives*, 6(3), 419-441. <https://doi.org/10.1080/14623940500220277>
- Harteis, C., Gruber, H., & Lehner, F. (2006). Epistemological beliefs and their impact on work, subjectivity and learning. In Billet, S., T. Fenwick, & M. Sommerville, *Work, subjectivity and learning: Understanding learning through working life* (pp. 123-140). Dordrecht, NL: Springer. <https://doi.org/10.1007/1-4020-5360-6>
- Hashweh, M. Z. (2003). Teacher accommodative change. *Teaching and Teacher Education*, 19, 421-434. [https://doi.org/10.1016/S0742-051X\(03\)00026-X](https://doi.org/10.1016/S0742-051X(03)00026-X)
- Hatch, J. A. (2002). *Doing qualitative research in education settings*. New York, NY: State University of New York.
- Hill, L. H. (2014). Graduate students' perspectives on effective teaching. *Adult Learning*, 25(2), 57-65. <https://doi.org/10.1177/1045159514522433>
- Ho, A. S. P. (2000). A conceptual change approach to staff development: A model for programme design. *International Journal of Academic Development*, 5(1), 30-41. <https://doi.org/10.1080/136014400410088>
- Hoessler, C. (2012). *A contextual view of support for graduate students' scholarly teaching* (Unpublished doctoral dissertation). Queen's University, Canada.
- Hodkinson, H., & Hodkinson, P. (2005). Improving schoolteachers' workplace learning. *Research Papers in Education*, 20(2), 109-131. <https://doi.org/10.1080/02671520500077921>
- Hodkinson, P., & Hodkinson, H. (2004). The significance of individuals' dispositions in workplace learning: A case study of two teachers. *Journal of Education and Work*, 17(2), 167-182. <https://doi.org/10.1080/13639080410001677383>
- Hodkinson, P., Hodkinson, H., Evans, K., Kersh, N., Fuller, A., Unwin, L. & Senker, P. (2004). The significance of individual biography in workplace learning. *Studies in the Education of Adults*, 36(1), 6-24. <https://doi.org/10.1080/02660830.2004.11661484>
- Hoekstra, A., Beijaard, D., Brekelmans, M., & Korthagen, F. (2007). Experienced teachers' informal learning from classroom teaching. *Teachers and Teaching: Theory*

- and Practice*, 13(2), 191-208. <https://doi.org/10.1080/13540600601152546>
- Hutchings, P. (1993). Preparing the professoriate: Next steps and what we need to do to take them. In L.M. Lambert & S.L. Tice (Eds.), *Preparing graduate students to teach: A guide to programs that improve undergraduate education and develop tomorrow's Faculty* (pp. 127-133). Washington, DC: American Association for Higher Education.
- Illeris, K. (2009). Transfer of learning in the learning society: How can the barriers between different learning spaces be surmounted, and how can the gap between learning inside and outside schools be bridged? *International Journal of Lifelong Education*, 28(2), 137-148. <https://doi.org/10.1080/02601370902756986>
- Illeris, K. (2011). Workplaces and learning. In M. Malloch, L. Cairns, K. Evans, and B. N. O'Connor (Eds.), *The SAGE handbook of workplace learning: Theories of work, place and learning: New directions* (pp. 32-43). Los Angeles, CA: SAGE. <http://dx.doi.org/10.4135/9781446200940>
- Illeris, K. (2015). The development of a comprehensive and coherent theory of learning. *European Journal of Education*, 50(1), 29-40. <https://doi.org/10.1111/ejed.12103>
- Jones, J. L. (1993). TA training: From the TA's point of view. *Innovative Higher Education* 18(2), 147-161. <https://doi.org/10.1007/BF01191892>
- Kagan, D. M. (1992). Professional growth among preservice and beginning teachers. *Review of Educational Research*, 62(2), 129-169. DOI: 10.2307/1170578
- Kaila, V., & Border, L. L. B. (2011). Rethinking courses on college pedagogy for the sciences: An analysis and subsequent model. *Studies in Graduate and Professional Student Development*, 14, 87-100.
- Kajfez, R. L., & Matusovich, H. M. (2017). Competence, autonomy, and relatedness as motivators of graduate teaching assistants. *Journal of Engineering Education*, 106(2), 245-272. <https://doi.org/10.1002/jee.20167>
- Kalish, A., & Robinson, S. (2011). Introduction: Mapping the range of graduate student professional development. *Studies in Graduate and Professional Student Development*, 14, xi-xviii.
- Kalish, A., Robinson, S. S., Border, L., Chandler, E., Griffith, L., Hanson, St., Pinder-Grover, T., Rando, W., & von Hoene, L. (2011). Steps toward a framework for an intended curriculum for graduate and professional students: How we talk about what we do. *Studies in Graduate and Professional Student Development*, 14, 163-173.
- Kane, R., Sandretto, S., & Heath, C. (2002). Telling half the story: A critical review of research on the teaching beliefs and practices of university academics. *Review of Educational Research*, 72, 177-228.

- Katz, L. G., & Raths, J. D. (1985). Dispositions as goals for teacher education. *Teaching & Teacher Education, 1*(4), 301-307. [https://doi.org/10.1016/0742-051X\(85\)90018-6](https://doi.org/10.1016/0742-051X(85)90018-6)
- Keith-Spiegel, P., Whitley, B. E., Perkins, D. V., Balogh, E. W., & Wittig, A. F. (2001). Ethical dilemmas confronting graduate teaching assistants: Issues and cases. In L. R. Prieto & S. A. Meyers (Eds.), *The teaching assistant training handbook: How to prepare TAs for their responsibilities* (pp. 133-155). Stillwater, OK: New Forums.
- Kember, D. (1997). A reconceptualization of the research into university academics' conceptions of teaching. *Learning and Instruction, 7*(3), 255-275.
- Kenny, N., Watson, G. P. L., & Watton, C. (2014). Exploring the context of Canadian graduate student teaching certificates in university teaching. *Canadian Journal of Higher Education, 44*(3), 1-19.
- Kinchin, I. M., Hatzipanagos, S., & Turner, N. (2009). Epistemological separation of research and teaching among graduate teaching assistants. *Journal of Further and Higher Education, 33*(1), 45-55. <https://doi.org/10.1080/03098770802638267>
- Kinsella, E. A. (2007). Embodied reflection and the epistemology of reflective practice. *Journal of Philosophy of Education, 41*(3), 395-409. <https://doi.org/10.1111/j.1467-9752.2007.00574.x>
- Kira, N. (2011). A comparative study of GTA development in Japan and the U.S. *Studies in Graduate and Professional Student Development, 14*, 147-161.
- Kirby, J. R., Knapper, C. K., Evans, C. J., Carty, A. E., & Gadula, C. (2003). Approaches to learning at work and workplace climate. *International Journal of Training and Development, 7*(1), 31-52. <https://doi.org/10.1111/1468-2419.00169>
- Kolb, D.A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.
- Korpan, C. (2010). Conversations and collaborations. *Collected Essays in Learning & Teaching, 4*, Society for Teaching and Learning in Higher Education.
- Korpan, C. (2014a). *Preparing teaching assistants (TAs): A national survey of Canadian post-secondary institutions' TA orientations*. Educational Developers' Caucus.
- Korpan, C. (2014b). From teaching assistant (TA) training to workplace learning. *Collected Essays in Learning & Teaching, 7*(2), Society for Teaching and Learning in Higher Education.
- Korpan, C. (2014c). The apprenticeship of teaching assistants: Time to change? *Transformative Dialogues, 7*(3). Retrieved from <http://www.kpu.ca/td/current-issue>

- Korpan, C., Le-May Sheffield, S., & Verwoord, R. (2015). Teaching assistant competencies in Canada: Building a framework for practice together. *Collected Essays in Learning & Teaching*, 8, Society for Teaching and Learning in Higher Education.
- Knight, P., Tait, J., & Yorke, M. (2006). The professional learning of teachers in higher education. *Studies in Higher Education*, 31(3), 319-339.
<https://doi.org/10.1080/03075070600680786>
- Kreber, C. (2010). Academics' teacher identities, authenticity and pedagogy. *Studies in Higher Education*, 35(2), 171-194. <https://doi.org/10.1080/03075070902953048>
- Kuther, T. L. (2003). Teaching the teacher: Ethical issues in graduate student teaching. *College Student Journal*, 37(2), 219-23.
- Lambert, L. M., & Tice, S. L. (1993). *Preparing graduate students to teach: A guide to programs that improve undergraduate education and develop tomorrow's faculty*. Washington, DC: American Association for Higher Education.
- Lavé, J. (1982). A comparative approach to educational forms and learning processes. *Anthropology and Education Quarterly*, 13, 181-187.
- Lavé, J. (1996). Teaching, as learning, in practice. *Mind, Culture and Society*, 3(3), 149-164. https://doi.org/10.1207/s15327884mca0303_2
- Lavé, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University.
- Lee, S.S. (2001). "A Root out of dry ground": Resolving the researcher/researched dilemma. In J. Zeni (Ed.), *Ethical issues in practitioner research* (pp. 61-71). New York, NY: Teachers College, Columbia University.
- Lee, T., Fuller, A., Ashton, D., Butler, P., Felstead, A., Unwin, L., & Walters, S. (2004). Workplace learning: Main themes & perspectives. *Learning as Work Research Paper*, 2. Leicester, UK: Centre for Labour Market Studies, University of Leicester. Retrieved from <http://orca.cf.ac.uk/id/eprint/68492>
- Lee, A. M., Pettigrove, M., & Fuller, M. P. (2010). *Preparing to teach in higher education*. Lichfield, UK: UK Council for Graduate Education.
- LeFebvre, L. & Allen, M. (2014). Teacher immediacy and student learning: An examination of lecture/laboratory and self-contained course sections. *Journal of the Scholarship of Teaching and Learning*, 14(2), 29-45.
<https://doi.org/10.14434/josotl.v14i2.4002>
- Leger, A. B., & Fostaty Young, S. (2014). A graduate course on teaching and learning in

- higher education: Influences on conceptions of teaching and learning. *The Canadian Journal for the Scholarship of Teaching and Learning*, 5(1), article 3.
<https://doi.org/10.5206/cjsotl-rcacea.2014.1.3>
- Lejeune, M. (2011). Tacit knowledge: Revisiting the epistemology of knowledge. *McGill Journal of Education*, 46(1), 91-105. <https://doi.org/10.7202/1005671ar>
- Lester, S., & Costley, C. (2010). Work-based learning at higher education level: value, practice and critique. *Studies in Higher Education*, 35(5), 561-575.
<http://dx.doi.org/10.1080/03075070903216635>
- Lewis, K. G. (Ed.). (1993). *The TA experience: Preparing for multiple roles*. Stillwater, OK: New Forums.
- Light, G., & Calkins, S. (2015). The experience of academic learning: Uneven conceptions of learning across research and teaching. *Higher Education*, 69, 345-359.
<https://doi.org/10.1007/s10734-014-9779-0>
- Little, D., & Palmer, M. (2012). Training instructional consultants to use a coaching framework. In K. Brinko (Ed.), *Practically speaking: A sourcebook for instruction consultants in higher education* (pp. 208-216). Stillwater, OK: New Forums.
- Lueddke, G. R. (1997). Training postgraduates for teaching: Considerations for programme planning and development. *Teaching in Higher Education*, 2(2), 141-151.
<https://doi.org/10.1080/1356251970020204>
- Luft, J. A., Kurdziel, J. P., Roehrig, G. G., & Turner, J. (2004). Growing a garden without water: Graduate teaching assistants in introductory science laboratories at a doctoral/research university. *Journal of Research in Science Teaching*, 41(3), 211-233. <https://doi.org/10.1002/tea.20004>
- Malloch, M., & Cairns, L. (2011). Theories of work, place and learning: New directions. In M. Malloch, L. Cairns, K. Evans, & B. N. O'Connor, *The SAGE handbook of workplace learning: Theories of work, place and learning: New directions* (pp. 3-14). Los Angeles, CA: SAGE. <http://dx.doi.org/10.4135/9781446200940>
- Marincovich, M., Prostko, J., & Stout, F. (Eds.). (1998). *The professional development of graduate teaching assistants*. Bolton, MA: Anker.
- Marsick, V. J. (1988). Learning in the workplace: The case of reflectivity and critical reflectivity. *Adult Education Quarterly*, 38(4), 187-198.
<https://doi.org/10.1177/0001848188038004001>
- Marsick, V. J., & Watkins, K. (1990). *Informal and incidental learning in the workplace*. London, UK: Routledge. <https://doi.org/10.4324/9781315715926>

- Marsick, V., & Watkins, K., & O'Connor, B. (2011). Researching workplace learning in the United States. In M. Malloch, L. Cairns, K. Evans, & B. N. O'Connor (Eds.), *The SAGE handbook of workplace learning: Theories of work, place and learning: New directions* (pp. 198-209). Los Angeles, CA: SAGE. <http://dx.doi.org/10.4135/9781446200940>
- Marton, F., & Säljö, R. (1976). On qualitative differences in learning: I. Outcome and process. *British Journal of Educational Psychology*, *46*(1), 4-11. <https://doi.org/10.1111/j.2044-8279.1976.tb02980.x>
- Mason, J. (2002). *Qualitative researching* (2nd ed.). London, UK: SAGE.
- Matthews, P. (1999). Workplace learning: Developing an holistic model. *The Learning Organization*, *6*(1), 18-29. <https://doi.org/10.1108/09696479910255684>
- McAlpine, L., & Amundsen, C. (2016). Identity-trajectory and career development. In *Post-PhD career trajectories* (pp. 17-26), London, UK: Palgrave Macmillan. <https://doi.org/10.1002/berj.3123>
- McAlpine, L., Amundsen, C., & Turner, G. (2014). Identity-trajectory: Reframing early career academic experience. *British Educational Research Journal*, *40*(6), 952-969. <https://doi.org/10.1002/berj.3123>
- McAlpine, L., & Weston, C. (2000). Reflection: Issues related to improving professors' teaching and students' learning. *Instructional Science*, *28*, 363-385. <https://doi.org/10.1023/A:1026583208230>
- McAlpine, L., Weston, C., Beauchamp, C., Wiseman, C., & Beauchamp, J. (1999). Monitoring student cues: Tracking student behaviour in order to improve instruction in higher education. *The Canadian Journal of Higher Education*, *29*(2), 113-144.
- McAlpine, L., Weston, C., Timmermans, J., Berthiaume, D., & Fairbank-Roch, G. (2006). Zones: Reconceptualizing teacher thinking in relation to action. *Studies in Higher Education*, *31*(5), 601-615. <https://doi.org/10.1080/03075070600923426>
- McGivney-Burelle, J., DeFranco, T. C., Vinsonhaler, C. I., & Santucci, K. B. (2001). Building bridges: Improving the teaching practices of TAs in the mathematics department. *The Journal of Graduate Teaching Assistant Development*, *8*(2), 55-63.
- McKeachie, W. J. (1994). *Teaching tips* (9th ed.). Lexington, MA: D.C. Heath and Co.
- Meanwell, E., & Kleiner, S. (2014). The emotional experience of first-time teaching: Reflections from graduate instructors, 1997-2006. *Teaching Sociology*, *42*(1), 17-27. <https://doi.org/10.1177/0092055X13508377>
- Merriam, S. B. (1998). *Qualitative research and case study applications in education*.

San Francisco, CA: Jossey-Bass.

- Meyer, J., & Land, R. (2003). Threshold concepts and troublesome knowledge: Linkages to ways of thinking and practising within the disciplines. *Occasional Report 4*, ETL Project, University of Edinburgh. Retrieved from <https://www.etl.tla.ed.ac.uk/publications.html>
- Meyers, S. A. (2001). Conceptualizing and promoting effective TA training. In L. R. Prieto & S. A. Meyers (Eds.), *The teaching assistant training handbook: How to prepare TAs for their responsibilities* (pp. 3-23). Stillwater, OK: New Forums.
- Miller, C., & Blackman, C. (2005). *The shape of the learning curve: Trajectories of workplace learning*. Retrieved from http://conferencereview.com/1192005_8178.doc
- Miller, K., Brickman, P., & Oliver, J. S. (2014). Enhancing teaching assistants' (TAs') inquiry teaching by means of teaching observations and reflective discourse. *School Science and Mathematics, 114*(4), 178-190. <https://doi.org/10.1111/ssm.12065>
- Mintz, J. A. (1998). The role of centralized programs in preparing graduate students to teach. In M. Marincovich, J. Prostko, & F. Stout (Eds.), *The professional development of graduate teaching assistants* (pp. 19-40). Bolton, MA: Anker.
- Moon, J. A. (2006). *Learning journals: A handbook for reflective practice and professional development* (2nd ed.). New York, NY: Routledge.
- Morris, M. (2001). Factors affecting the congruence of beliefs about teaching and classroom practices of GTAs in elementary foreign language courses. *The Journal of Graduate Teaching Assistant Development, 8*(2), 45-51.
- Mueller, A., Perlman, B., McCann, L., & McFadden, S. H. (1997). A faculty perspective on teaching assistant training. *Teaching of Psychology, 24*(3), 167-171. https://doi.org/10.1207/s15328023top2403_3
- Murphy, C. A., & Jensen, T. D. (2016). Faculty teaching development: Using the Multidimensional matrix of teaching development to guide teaching improvement activities. *The Journal of Effective Teaching, 16*(2), 61-75.
- Muzaka, V. (2009). The niche of graduate teaching assistants (GTAs): Perceptions and reflections. *Teaching in Higher Education, 14*(1), 1-12. <https://doi.org/10.1080/13562510802602400>
- Norton, L., Richardson, J. T. E., Hartley, J., Newstead, S., & Mayes, J. (2005). Teachers' beliefs and intentions concerning teaching in higher education. *Higher Education, 50*, 537-571. <https://doi.org/10.1007/s10734-004-6363-z>
- Nyquist, J. D., Abbott, R. D., Wulff, D. H., & Sprague, J. (1991). *Preparing the*

professoriate of tomorrow to teaching: Selected readings in TA training. Dubuque, IA: Kendall/Hunt.

- Nyquist, J. D., Manning, L., Wulff, D. H., Austin, A. E., Sprague, J., Fraser, P. K., Calcagno, C. & Woodford, B. (1999). On the road to becoming a professor: The graduate student experience. *Change*, 18-27. <https://doi.org/10.1080/00091389909602686>
- Nyquist, J. D., & Sprague, J. (1998). Thinking developmentally about TAs. In M. Marincovich, J. Prostko, & F. Stout (Eds.), *The professional development of graduate teaching assistants* (pp. 61-88). Bolton, MA: Anker.
- Palmer, M. S. (2011). Graduate student professional development: A decade after calls for national reform. *Studies in Graduate and Professional Student Development*, 14, 1-17.
- Palmer, P. J. (1998). *The courage to teach: Exploring the inner landscape of a teacher's life*. San Francisco, CA: Jossey-Bass.
- Park, C. (2002). Neither fish nor fowl? The perceived benefits and problems of using graduate teaching assistants (GTAs) to teach undergraduate students. *Higher Education Review*, 35(1), 50-62.
- Pataraiia, N., Margaryan, A., Falconer, I., & Littlejohn, A. (2014). Discovering academics' key learning connections: An ego-centric network approach to analysing learning about teaching. *Journal of Workplace Learning*, 26(1), 56-72. <https://doi.org/10.1108/JWL-03-2013-0012>
- Piccinin, S. J., Farquharson, A., & Mihu, E. (1993). Teaching assistants in Canadian universities: An unknown resource. *The Canadian Journal of Higher Education*, 23, 140-117.
- Polanyi, M. (1967). *The tacit knowledge dimension*. London, UK: Routledge & Kegan Paul.
- Post, P. A. (2011). Trial by hire: The seven stages of learning to teach in higher education. *Contemporary Issues in Education Research*, 4(12), 25-34.
- Pratasavitskaya, H., & Stensaker, B. (2010). Quality management in higher education: Towards a better understanding of an emerging field. *Quality in Higher Education*, 16(1), 37-50. <https://doi.org/10.1080/13538321003679465>
- Prieto, L. R. (2001). The supervision of teaching assistants: Theory, evidence and practice. In L. R. Prieto & S. A. Meyers (Eds.), *The teaching assistant training handbook: How to prepare TAs for their responsibilities* (pp. 103-129). Stillwater, OK: New Forums.
- Prieto, L. R., & Altmaier, E. M. (1994). The relationship of prior training and previous

- teaching experience to self-efficacy among graduate teaching assistants. *Research in Higher Education*, 32(4), 481-497. <https://doi.org/10.1007/BF02496384>
- Prieto, L. R., & Yamokoski, C. A. (2007). Teaching assistant training and supervision: An examination of optimal delivery modes and skill emphases. *The Journal of Faculty Development*, 21(1), 33-43.
- Prosser, M., Trigwell, K., & Taylor, P. (1994). A phenomenographic study of academics' conceptions of science learning and teaching. *Learning and Instruction*, 4, 217-231. [https://doi.org/10.1016/0959-4752\(94\)90024-8](https://doi.org/10.1016/0959-4752(94)90024-8)
- Pytlak, M. A., & Houser, M. L. (2014). Because I'm the teacher and I said so: GTA use of behavior alteration techniques to establish power and credibility in the college classroom. *Western Journal of Communication*, 78(3), 287-309. <https://doi.org/10.1080/10570314.2014.893010>
- Raelin, J. A. (2007). Towards an epistemology of practice. *Academy of Management Learning & Education*, 8(4), 495-519. <https://www.jstor.org/stable/40214479>
- Ramsden, P. (2003). *Learning to teach in higher education* (2nd ed.). London: Routledge.
- Rausch, A. (2013). Task characteristics and learning potentials-empirical results of three diary studies on workplace learning. *Vocations and Learning*, 6, 55-79. <https://doi.org/10.1007/s12186-012-9086-9>
- Richards, L. (2005). *Handling qualitative data: A practical guide*. Thousand Oaks, CA: SAGE.
- Robinson, S. S. (2011). An introductory classification of graduate teaching assistant orientations. *Studies in Graduate and Professional Student Development*, 14, 19-35.
- Rolheiser, C., Seifert, T., McCloy, C., Gravestock, P., Stewart, G., Greenleaf, E., Burnett, M., Carpenter, S., Pottruff, B., & McKean, S. (2013). *Developing teaching assistants as members of the university teaching team*. Toronto: Higher Education Quality Council of Ontario. Retrieved from <http://www.heqco.ca/en-ca/Research/ResPub/Pages/Developing-Teaching-Assistants-as-Members-of-the-University-Teaching-Team.aspx>
- Roth, W. M., & Tobin, K. (2001). *Toward an epistemology of teaching as practice*. Retrieved from web.uvic.ca/~mroth/teaching/591EDB/ROTHTOB.pdf
- Russell, J. A. (2008). Examining kinesiology GTA's perceptions of a videotape instructional analysis and consultation process. *Studies in Graduate & Professional Student Development*, 11, 138-152.

- Russell, J. A. (2010). Instructional concerns of kinesiology basic instruction program graduate teaching assistants. *Studies in Graduate and Professional Student Development, 13*, 23-42.
- Ryan, M. (2013). The pedagogical balancing act: Teaching reflection in higher education. *Teaching in Higher Education, 18*(2), 144-155, <http://dx.doi.org/10.1080/13562517.2012.694104>
- Sadler, I. (2009). *Development of new teachers in higher education: Interactions with students and other influences upon approach to teaching*. Retrieved from <http://hdl.handle.net/1842/3388>
- Saldana, J. (2013). *The coding manual for qualitative researchers*. London, UK: SAGE.
- Samuelowicz, K., & Bain, J. D. (1992). Conceptions of teaching held by academic teachers. *Higher Education, 24*(1), 93-111. <https://doi.org/10.1007/BF00138620>
- Sanford, N. (1968). *Where colleges fail: A study of student as person*. San Francisco, CA: Jossey-Bass.
- Sarkisian, D., & Maurer, V. (1998). International TA training and beyond: Out of the program and into the classroom. In M. Marinovich, J. Prostko, & F. Stout (Eds.), *The professional development of graduate teaching assistants* (pp. 163-180). Bolton, MA: Anker.
- Saroyan, A., Dagenais, J., & Zhou, Y. (2009). Graduate students' conceptions of university teaching and learning: Formation for change. *Instructional Science, 37*, 579-600. <https://doi.org/10.1007/s11251-008-9071-8>
- Sawchuk, P. H. (2011). Researching workplace learning: An overview and critique. In M. Malloch, L. Cairns, K. Evans, & B. N. O'Connor (Eds.), *The SAGE handbook of workplace learning: Theories of work, place and learning: New Directions* (pp. 165-177). Los Angeles, CA: SAGE. <http://dx.doi.org/10.4135/9781446200940>
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York, NY: Basic Books.
- Schön, D. A. (1987). *Educating the reflective practitioner: Towards a new design for teaching and learning in the professions*. San Francisco, CA: Jossey-Bass.
- Schönwetter, D. J., & Ellis, D. (2007). *Sharing competency commonalities and uniqueness across Canadian TA programs*. Paper presented at EDC '07: Educational Developers Caucus Conference. Guelph, ON: University of Guelph.
- Schönwetter, D. J., Ellis, D.E., Nazarko, O., & Taylor, K. L. (2004). *North of the 49th parallel: Diverse (Canadian) approaches to graduate student professional*

development programs for teaching. Paper presented at POD '04: *Professional and Organizational Development Network in Higher Education*, Montreal, QC: POD.

Shulman, L. S. (2005). Signature pedagogies in the professions. *Daedalus*, 134(3), 52-59. doi:10.1162/0011526054622015

Schussler, D. L., Stooksberry, L. M., & Bercaw, L. A. (2010). Understanding teacher candidate dispositions: Reflecting to build self-awareness. *Journal of Teacher Education*, 61(4), 350-363. <https://doi.org/10.1177/0022487110371377>

Schutz, P. A., & Pekrun, R. (2007). Introduction to emotion in education. In P. A. Schutz, & R. Pekrun (Eds.), *Emotion in education: A volume in educational psychology* (pp. 3-10). Cambridge, MA: Academic Press, Elsevier. <https://doi.org/10.1016/B978-012372545-5/50002-2>

Sfard, A. (1998). On two metaphors for learning and the dangers of choosing just one. *Educational Researcher*, 27(2), 4-13. DOI: 10.2307/1176193

Shannon, D. M., Twale, D. J., & Moore, M. S. (1998). TA teaching effectiveness: The impact of training and teaching experience. *The Journal of Higher Education*, 69(4), 440-466. DOI: 10.2307/2649274

Shanks, R., Robson, D., & Gray, D. (2012). New teachers' individual learning dispositions: A Scottish case study. *International Journal of Training and Development*, 16(3), 183-199. <https://doi.org/10.1111/j.1468-2419.2012.00403.x>

Simpson, R. D., & Smith, K. S. (1993). Validating teaching competencies for graduate teaching assistants: A national study using the Delphi Method. *Innovative Higher Education*, 18(2), 133-146. <https://doi.org/10.1007/BF01191891>

Smith, V. (2001). Ethnographies of work and the work of ethnographers. In P. Atkinson, Coffey, S. Delamont, J. Lofland, and L. Lofland (Eds.), *Handbook of Ethnography* (pp. 220-233). Thousand Oaks, CA: SAGE. <https://dx.doi.org/10.4135/9781848608337.n15>

Smith, G. (2017). *Where do faculty experience professional learning and development as teachers?* Proceedings from POD '17: Professional and Organizational Development Network in Higher Education Conference. Montreal, QC: POD.

Smollin, L. M., & Arluke, A. (2014). Rites of pedagogical passage: How graduate student instructors negotiate the challenges of first-time teaching. *Teaching Sociology*, 42(1), 28-39. <https://doi.org/10.1177/0092055X13502181>

Spindler, G. (2002). The collusion of illusions and how to get people to tell you what they don't know. In Y. Zou & E. T. Trueba (Eds.), *Ethnography and schools: Qualitative approaches to the study of education* (pp. 13-26). Oxford, UK: Rowman & Littlefield.

- Spradley, J. P. (1980). *Participant observation*. New York, NY: Holt, Rinehart, and Winston.
- Sprague, J., & Nyquist, J. D. (1989). TA supervision. Teaching assistant training in the 1990s, *New Directions in Teaching and Learning*, 39, 37-53.
- Sprague, J., & Nyquist, J.D. (1991) A developmental perspective on the TA role. In J. D. Nyquist, R. D. Abbott, D. H. Wulff & J. Sprague (Eds.), *Preparing the professoriate of tomorrow to teach: Selected readings in TA training* (pp. 295-312). Dubuque, IA: Kendall-Hunt.
- Staton, A. Q., & Darling, A. L. (1989). Socialization of teaching assistants. Teaching assistant training in the 1990s, *New Directions in Teaching and Learning*, 39, 15-22.
- Svinicki, M. D. (1998). Creating a foundation for instructional decisions. In M. Marincovich, J. Prostko, & F. Stout (Eds.), *The professional development of graduate teaching assistants* (pp. 89-104). Bolton, MA: Anker.
- Thrift, N., & Pile, S. (1995). *Mapping the subject: Geographies of cultural transformation*. London: Routledge.
- Tice, S. L., Gaff, J. G., & Pruitt-Logan, A. S. (1998). Preparing future faculty programs: Beyond TA development. In M. Marincovich, J. Prostko, & F. Stout (Eds.), *The professional development of graduate teaching assistants* (pp. 275-292). Bolton, MA: Anker.
- Tulane, S., & Beckert, T. E. (2011). Perceived utility and knowledge of graduate teaching assistants. *Journal of the Scholarship of Teaching and Learning*, 11(4), 44-55.
- Turner, D. A. (2011). *Quality in higher education*. Comparative and international education: A diversity of voices, 10. Boston: Sense.
- Tynjala, P. (2008). Perspectives into learning at the workplace. *Educational Research Review*, 3, 130-154. <https://doi.org/10.1016/j.edurev.2007.12.001>
- Vahey, K., Witkowsky, P., Rehling, J., & Saifah, S. (2010). Doctoral students make meaning of their experience: A constructivist inquiry. *Studies in Graduate and Professional Student Development*, 13, 2-22.
- van Lankveld, T., Schoonenboom, J., Volman, M., Croiset, G., & Beishuizen, J. (2017). Developing a teacher identity in the university context: A systematic review of the literature. *Higher Education Research & Development*, 36(2), 325-342. <https://doi.org/10.1080/07294360.2016.1208154>
- Van Waes, S., Van den Bossche, P., Moolenaar, N. M., Stes, A., & Van Petegem, P.

- (2015). Uncovering changes in university teachers' professional networks during an instructional development program. *Studies in Educational Evaluation*, 46, 11-28. <https://doi.org/10.1016/j.stueduc.2015.02.003>
- Vick, M. J., & Martinez, C. (2011). Teachers and teaching: Subjectivity, performativity and the body. *Educational Philosophy and Theory*, 43(2), 178-192. Doi: 10.1111/j.1469-5812.2009.00552.x
- Volkman, M. J., & Zgagacz, M. (2004). Learning to teach physics through inquiry: The lived experience of a graduate teaching assistant. *Journal of Research in Science Teaching*, 41(6), 584-602. <https://doi.org/10.1002/tea.20017>
- von Hoene, L. (2011). Graduate student teaching certificates: Survey of current programs. *Studies in Graduate and Professional Student Development*, 14, 101-123.
- Walker, C., & Gleaves, A. (2016). Constructing the caring higher education teacher: A theoretical framework. *Teaching and teacher education*, 54, 65-76. <https://doi.org/10.1016/j.tate.2015.11.013>
- Warhurst, R. P. (2008). 'Cigars on the flight-deck': new lecturers' participatory learning within workplace communities of practice. *Studies in Higher Education*, 33(4), 453-467. <https://doi.org/10.1080/03075070802211828>
- Weber, R. J., Gabbert, A., Kropp, J. & Pynes, P. (2007). Creating the teaching professor: Guiding graduate students to become effective teachers. *The Journal of Scholarship of Teaching and Learning*, 7(1), 45-63. Retrieved from <https://scholarworks.iu.edu/journals/index.php/josotl/article/view/1678>
- Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. New York, NY: Cambridge University. <https://doi.org/10.1017/CBO9780511803932>
- Weston, C., & McAlpine, L. (1998). How six outstanding math professors view teaching and learning: The importance of caring. *The International Journal for Academic development*, 3(2), 146-155. <https://doi.org/10.1080/1360144980030207>
- Wideen, M., Mayer-Smith, J., & Moon, B. (1998). A critical analysis of the research on learning to teach: Making the case for an ecological perspective on inquiry. *Review of Educational Research* 68(2), 130-178. DOI: 10.2307/1170752
- Wilcox, S., & Leger, A. (2013). Crossing thresholds: Identifying conceptual transitions in postsecondary teaching. *The Canadian Journal for the Scholarship of Teaching and Learning*, 4(2), article 7. <http://dx.doi.org/10.5206/cjsotl-rcacea.2013.2.7>
- Williams, L. S. (1991). The effects of a comprehensive teaching assistant program on teaching anxiety and effectiveness. *Research in Higher Education*, 32(5), 585-598. <https://doi.org/10.1007/BF00992630>

- Winstone, N., & Moore, D. (2017). Sometimes fish, sometimes fowl? Liminality, identity work and identity malleability in graduate teaching assistants. *Innovations in Education and Teaching International*, 54(5), 494-502. <https://doi.org/10.1080/14703297.2016.1194769>
- Wise, A. (2011). Supporting future faculty in developing their teaching practices: An exploration of communication networks among graduate teaching assistants. *International Journal of Teaching and Learning in Higher Education*, 23(2), 135-149.
- Wright, M. C., Bergom, I., & Brooks, M. (2011). The role of teaching assistants in student-centered learning: Benefits, costs, and negotiations. *Innovative Higher Education*, 36, 331-342. <https://doi.org/10.1007/s10755-011-9197-5>
- Wright, M. C., Purkiss, J., O'Neal, C., & Cook, C. E. (2008). International teaching assistants and student retention in the sciences. *Studies in Graduate & Professional Student Development*, 11, 109-120.
- Wulff, D. H., & Austin, A. E. (2004). The challenge to prepare the next generation of faculty. In D. H. Wulff & A. E. Austin (Eds.), *Paths to the professoriate: Strategies for enriching the preparation of future faculty* (pp. 3-16). San Francisco, CA: Jossey Bass.
- Wulff, D. H., Austin, A. E., Nyquist, J. D., & Sprague, J. (2004). The development of graduate students as teaching scholars: A four-year longitudinal study. In D. H. Wulff & A. E. Austin (Eds.), *Paths to the professoriate: Strategies for enriching the preparation of future faculty* (pp. 46-73). San Francisco, CA: Jossey Bass.

Appendix A: CUPE 4163 TA Checklist of Assigned Duties and Approved Work Schedule



Economics

CUPE 4163 TA Checklist of Assigned Duties and Approved Work Schedule

The work schedule must be defined in writing at the beginning of the term and reviewed and adjusted if necessary at the mid-term to ensure the required duties are consistent with, and will be completed within, the defined schedule.

DEPARTMENT/SCHOOL:	DATE:
POSITION:	COURSE/PROJECT:
APPOINTMENT, From:	To: TOTAL HOURS:

WORK SCHEDULE

ASSIGNED RESPONSIBILITY (CHECK THOSE APPLICABLE)	HOURS ¹ (per week or per term)		DAYS/DATES ⁵
	Initial Hrs expected	Mid-Term Review ^{2,3,4}	
Establish Grading Criteria			
Grade Papers/Lab/Studio Assignments			
Lead Seminars/Tutorials, Laboratory/Studio Sessions			
Prepare Teaching Materials			
Teach Courses in the Absence of the Lecturer			
Student Consultation, Deal with Grade Complaints			
Assist to Design Laboratory/Studio Activities			
Prepare Laboratory/Studio Materials			
Attend Supervising Faculty Member's Lectures			
Attend Orientation/Information/Training Sessions			
Assist in Developing Course Outline			
Supervise Mid-Term(s) and/or Final Exam			
Mark Mid-Term(s) and/or Final Exam			
Prepare Tests and other Assessment Instruments			
Keep Records			
Lead Field Trips			
OTHER:			
OTHER: ⁶			

EMPLOYEE

Name - PRINT_____
Signature

SUPERVISOR

Name - PRINT_____
Signature

CHAIR/DIRECTOR/DESIGNATE

Name - PRINT_____
Signature

Mid-Term

Review

Employee's Signature_____
Supervisor's Signature_____
Date

1. Article 14.01 of the TA Appendix dictates the weekly limit for hours of work. The supervisor enters the expected values in the Initial Hours and Days/Dates columns at the onset of employment. The actual hours as of the mid-term are entered at the mid-term review.
2. This LOU does appear in the CA after 2003. (obligations regarding the mid-term review- see 14.03 in TA Appendix)
3. If any problem arises that cannot be resolved by the supervisor and employee, it should be referred to the Chair and Union.
4. A performance review may be completed in accordance with Article 22.02 (Performance Review). A copy will be provided to the employee.
5. List the day or days (e.g., M,T,W,R,F) that the duties are to be performed or the anticipated dates of concentrated work (e.g., marking). For self-scheduled work, use SS.
6. Attach additional sheet(s) if required.

COPY TO SUPERVISOR, EMPLOYEE, AND ACADEMIC DEPARTMENT FILE

Appendix B: University of Victoria Human Ethics Review Certificate



Human Research Ethics Board
 Office of Research Services
 Administrative Services Building
 PO Box 1700 STN CSC
 Victoria British Columbia V8W 2Y2 Canada
 Tel 250-472-4545, Fax 250-721-8960
 ethics@uvic.ca www.research.uvic.ca

Certificate of Approval

PRINCIPAL INVESTIGATOR: Cynthia Korpan	ETHICS PROTOCOL NUMBER 14-239
UVic STATUS: Ph.D. Student	Minimal Risk - Delegated
UVic DEPARTMENT: ANTH	ORIGINAL APPROVAL DATE: 09-Sep-14
SUPERVISOR: Dr. Margot Wilson	APPROVED ON: 09-Sep-14
	APPROVAL EXPIRY DATE: 08-Sep-15
PROJECT TITLE: Teaching Assistants' (Tas) Learning in the Workplace	
RESEARCH TEAM MEMBER None	
DECLARED PROJECT FUNDING: None	
CONDITIONS OF APPROVAL	
This Certificate of Approval is valid for the above term provided there is no change in the protocol.	
<p>Modifications To make any changes to the approved research procedures in your study, please submit a "Request for Modification" form. You must receive ethics approval before proceeding with your modified protocol.</p> <p>Renewals Your ethics approval must be current for the period during which you are recruiting participants or collecting data. To renew your protocol, please submit a "Request for Renewal" form before the expiry date on your certificate. You will be sent an emailed reminder prompting you to renew your protocol about six weeks before your expiry date.</p> <p>Project Closures When you have completed all data collection activities and will have no further contact with participants, please notify the Human Research Ethics Board by submitting a "Notice of Project Completion" form.</p>	
Certification	
This certifies that the UVic Human Research Ethics Board has examined this research protocol and concluded that, in all respects, the proposed research meets the appropriate standards of ethics as outlined by the University of Victoria Research Regulations Involving Human Participants.	
 Dr. Rachael Scarth Associate Vice-President Research Operations	

14-239 Korpan, Cynthia

Certificate Issued On: 09-Sep-14

Appendix C: Email script for contacting prospective participants (sent to graduate secretaries)

Dear Graduate Secretary,

Please find below a research participation request that I kindly ask you to forward via email to your new TAs. As you will see by the information below, I am conducting research to satisfy requirements for by doctoral degree. Feel free to contact me if you have any questions or reservations in forwarding this email.

Regards,
Cynthia Korpan

Hello,

I am writing to request your participation in a research project titled, *Teaching Assistants' (TAs) Learning in the Workplace*. Participation in this research project is voluntary and there are no repercussions if participation is declined.

The principal investigator in this research project is Cynthia Korpan, PhD doctoral candidate at the University of Victoria in the Interdisciplinary department (home department is anthropology). This research is to satisfy requirements to complete my doctoral degree.

At UVic, I also hold the position of Manager of LTC Professional Development Programs and TA Training. Please be advised that in my role at the Learning and Teaching Centre, I do not have any influence on your appointment as a TA. My role at the LTC is strictly to provide support for TAs and graduate students about learning and teaching in higher education, while working on campus and for their future careers. Because of my interest in supporting TAs and graduate students with their teaching, I am conducting this research in order to hopefully find out how TAs and graduate students can be further supported in their teaching role on campus.

The overarching goal of the research is to investigate, through the conceptual lens of workplace learning theories, the learning process that first time teaching assistants (TAs) undergo as they prepare to teach in the university setting. The purpose is to ensure that TAs are supported in their learning in the workplace.

My research questions are:

As teaching assistants (TAs) begin their first TA teaching assignment, what are their experiences with learning how to teach? Specifically, what elements (learning factors and context factors) contribute to their learning process as they construct knowledge about aspects of teaching in

higher education, and how do these elements relate to the structural, socio-cultural, and personal domains present in the workplace?

I invite graduate students who have **no prior teaching experience** (whether in higher education or the K to 12 education system, either as a TA or other instructional position, in Canada or another country), and **will be teaching a lab, tutorial, or discussion-based** class during the Fall term of 2014 and/or Winter term of 2015 in any discipline at the University of Victoria, to take part in this important research.

If you decide to participate, I will first request permission from your departmental graduate advisor and the course supervisor for the course that you are assigned. Your participation will require you to maintain a learning journal (provided with guiding questions), and interviews with the researcher for half an hour before the research begins and for one hour after the researcher video-records you teaching (two to three times as agreed). The learning journal time commitment will vary depending on the time you decide to devote to writing and responding to learning situations. The researcher will observe additional teaching sessions if you agree but these will not be video-recorded or be followed by an interview. All interviews will take place in the researcher's office located at Harry Hickman Building, Room 126, University of Victoria. Audio-tapes/and-written notes will be taken and a transcription will be made of all data for analysis only. Video tapes of your teaching will be taken with your permission and will be used during post-teaching interviews only to elicit memory and for no other purpose. The researcher will keep your learning journals for analysis and video-tapes will be destroyed when the research is complete.

Sincerely,

Cynthia Korpan
Principal Investigator

Appendix D: In-person script for recruiting prospective participants (for graduate/TA orientations)

Hello,

I am here today to request your participation in a research project titled, *Teaching Assistants' (TAs) Learning in the Workplace*. Participation in this research project is voluntary and there are no repercussions if participation is declined.

The principal investigator in this research project is myself, Cynthia Korpan, a PhD doctoral candidate at the University of Victoria in the Interdisciplinary department (my home department is anthropology). This research is to satisfy requirements to complete my doctoral degree.

At UVic, I also hold the position of Manager of LTC Professional Development Programs and TA Training. Please be advised that in my role at the Learning and Teaching Centre, I do not have any influence on your appointment as a TA. My role at the LTC is strictly to provide support for TAs and graduate students about learning and teaching in higher education, while working on campus and for their future careers. Because of my interest in supporting TAs and graduate students with their teaching, I am conducting this research in order to hopefully find out how TAs and graduate students can be further supported in their teaching role on campus.

The overarching goal of the research is to investigate, through the conceptual lens of workplace learning theories, the learning process that first time teaching assistants (TAs) undergo as they prepare to teach in the university setting. The purpose is to ensure that TAs are supported in their learning in the workplace.

My research questions are:

As teaching assistants (TAs) begin their first TA teaching assignment, what are their experiences with learning how to teach? Specifically, what elements (learning factors and context factors) contribute to their learning process as they construct knowledge about aspects of teaching in higher education, and how do these elements relate to the structural, socio-cultural, and personal domains present in the workplace?

I invite graduate students who have **no prior teaching experience** (whether in higher education or the K to 12 education system, either as a TA or other instructional position, in Canada or another country), and **will be teaching a lab, tutorial, or discussion-based** class during the Fall term of 2014 and/or Winter term of 2015 in any discipline at the University of Victoria, to take part in this important research.

If you decide to participate, I will first request permission from your departmental graduate advisor and the course supervisor for the course that you are assigned. Your participation will require you to maintain a learning journal, (*provided with guiding questions*), and interviews

with the researcher for half an hour before the research begins and for one hour after the researcher video-records you teaching (two to three times as agreed). The learning journal time commitment will vary depending on the time you decide to devote to writing and responding to learning situations. The researcher will observe additional teaching sessions if you agree but these will not be video-recorded or be followed by an interview. All interviews will take place in the researcher's office located at Harry Hickman Building, Room 126, University of Victoria. Audio-tapes/and-written notes will be taken and a transcription will be made of all data for analysis only. Video tapes of your teaching will be taken with your permission and will be used during post-teaching interviews only to elicit memory and for no other purpose. ***The researcher will keep your learning journals for analysis and*** video-tapes will be destroyed when the research is complete.

Thank you.

Appendix E: Recruitment Flyer

ARE YOU A TEACHING ASSISTANT (TA)?

ARE YOU COMPLETELY **NEW TO TEACHING** (NEVER TAUGHT IN K TO 12 OR IN COLLEGE OR UNIVERSITY BEFORE)?

AND

ARE YOU TEACHING A **TUTORIAL, LAB, OR DISCUSSION-BASED** TUTORIAL DURING THE FALL 2014 or SPRING 2015 TERM?

If so, please consider participating in a doctoral research project titled, *Teaching Assistants' (TAs') Learning in the Workplace*. The overarching goal of the research is to investigate, through the conceptual lens of workplace learning theories, the learning process that teaching assistants (TAs) undergo as they prepare to teach in the university setting. The purpose is to ensure that TAs are supported in their learning in the workplace.

If interested, please contact the principal investigator, Cynthia Korpan.

Appendix F: Guiding Interview Questions

First Interview:

1. How do you think your past experience (as a student, tutor, and/or other type of instructor, for example a swimming instructor) informs your approach to your work as a TA?
2. How did you first feel when you found out you were going to be teaching?
3. Describe your interest in teaching and student learning? Where does this stem from?
4. What do you think represents “good” teaching?
5. What is the responsibility of students for their own learning?
6. What do you expect to get out of teaching?
7. How would you rank your confidence in teaching?
8. What personal knowledge do you bring to the duties assigned and the skills you bring to the role?
9. What are the specific duties that you are required to do in your teaching assignment?
10. What background knowledge do you have about these specific duties? Related to content? Pedagogical? Pedagogical content? Learners? Academic life (research influencing teaching)?

Pre-observation of teaching:

1. When preparing for each class, what learning actions (asking questions, getting information, reflecting, getting feedback, on-line resources, and departmental resources) did you pursue? Why? How? When?

2. What challenges did you encounter?
3. What are some of the things you have learned? New vocabulary?
4. If you did not pursue any learning actions on how to perform a particular responsibility, how did you know what to do?
5. What if you had no idea what to do before class about a certain situation, how did you solve the problem?
6. Where did you seek assistance and why from that source?
7. What were the interpersonal and social factors that contributed or hindered your learning? From colleagues? Course supervisor? Department?
8. Describe the social relationships that developed based on learning how to do your TA job.
9. How was the work allocated and structured?
10. Were the expectations made clear?
11. Has your performance and progress been monitored?
12. Do you feel that learning opportunities were provided?
13. Was there an underlying environment of learning created and where did this exist?

Post Teaching Interviews:

1. What if you had no idea what to do during class about a certain situation, how did you solve the problem?
2. What was your thinking in action, thinking in the moment and how did that affect what you did?
3. Did you reject any ideas that you had during the class?

4. What will you do differently?
5. What connections can you make between knowledge that you sought out and what actually happened in the class?

Exit Interview:

1. What do you think you have learned about teaching?
2. Did you find it rewarding? Challenging?
3. Did you receive any feedback from professor, colleagues, or students?
4. What questions do you have about teaching now?
5. What do you think you need to learn more about?
6. Have any of your ideas about teaching changed?
7. Did you do something differently from other TAs teaching?
8. What will you change or do more of?
9. What restrictions to your learning occurred?
10. Do you feel like you were mentored or coached well?
11. Did you attend any courses, workshops, or independently access any learning materials about teaching?
12. What recommendations do you have to help TAs learning to teach?
13. What if you had to figure out how to teach this course? How would that have been different? What would you have done?

Appendix G: In Classroom Script for Students

Appendix 7: In-person script to inform students in classroom

Hello,

My name is Cynthia Korpan, a PhD doctoral candidate at the University of Victoria in the Interdisciplinary department (my home department is anthropology). I will be in the classroom today because of my doctoral research project titled, *Teaching Assistants' (TAs) Learning in the Workplace*.

This research is to satisfy requirements to complete my doctoral degree.

My research is investigating the learning process that teaching assistants (TAs) undergo as they learn how to teach in the university setting. The purpose is to ensure that TAs are supported in their learning in the workplace.

I will be video-recording the TA today but only for the purpose for this research. Students will not be the focus of the video-recording. The focus will be strictly on the TA. The video-recording will be used only for the TA and me to review when discussing the learning process of the TA. The video-recording will be stored in a locked cabinet on campus and at completion of this research, the video-recording will be destroyed.

During my time here today, I will also be taking notes, which again are strictly focused on the TA's teaching.

Thank you.

Appendix H: Framework for Teaching Assistant (TA) Competency Development

Developed by the Teaching Assistant Graduate Student Advancement (TAGSA) SIG of the Society of Teaching and Learning in Higher Education (STLHE)

Goal:

The goal of developing this framework is to encourage dialogue within and across institutions about providing standards to assist the support and improvement of teaching assistant (TA) knowledge, skills, and abilities. The framework is broad and general so that it is suitable within the whole institution.

The hope is that this framework will help set the foundation for TAs to strive for continuous teaching development that will add breadth to their experience. The contention is that if the foundation is strong, TAs will naturally engage in development throughout their work as a TA. The framework is applicable at every stage of a TAs' professional development.

Background:

The Teaching Assistant Graduate Student Advancement (TAGSA) special interest group of the Society of Teaching and Learning in Higher Education (STLHE) has been working on this framework for TA competency development since the fall of 2012. At this time, the executive committee is releasing the framework so that individuals/units at institutions can try it out, work with part or all of it, and/or expand it to suit TA programming and work. It is intended to be a starting point to provoke conversations about the knowledge, skills, and abilities that TAs require within your respective units or broadly within the institution. It is not meant to be prescriptive but to be an ever-changing organic framework that can adapt to the specific needs of the intended audience.

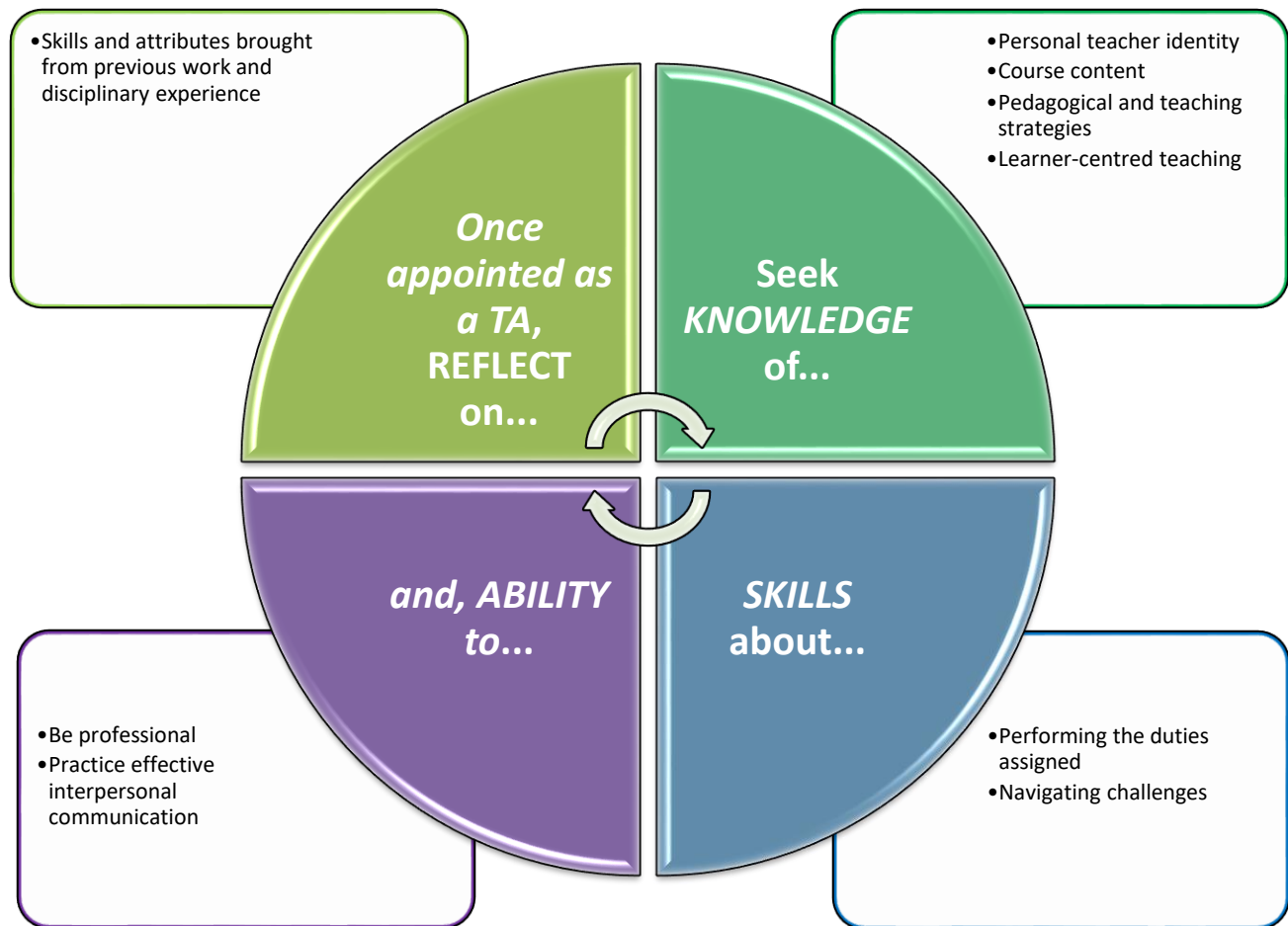
Audience:

The framework is meant to assist institutions, departments or schools, faculty, educational developers, teaching assistants, and anyone else responsible or interested in the teaching preparation of TAs.

For those responsible for providing guidance to TAs, the framework is a beginning point to help guide the development of competencies suitable for your respective unit(s). Use part or the entire framework, and clearly define terms used (such as *professionalism*). TAs, please use the framework as a guide to the knowledge, skills, and abilities that you will seek to attain and continually develop in your role as a TA.

Feedback is encouraged at any time.
Cynthia Korpan, TAGSA Chair

Framework for Teaching Assistant Competency Development



Once appointed as a TA, REFLECT on:

1. The skills and attributes brought from previous work and disciplinary experience

Possible learning activities/goals/outcomes:

- Define the values and goals of your discipline and describe how these will inform your approach to TA work.
- List your teaching related experience and the associated skills that you bring to the teaching assistant role (for example, from being a swimming instructor or tutor).
- Recall successful teaching strategies that you encountered during your undergraduate degree and previous TA experience (if applicable).

Seek the following:

KNOWLEDGE of...

2. How to develop a personal teaching identity

Possible learning activities/goals/outcomes:

- Investigate teaching philosophy statements or revisit your own, so that you can think about the values and goals you deem important in a teaching role.

- Search out the rights and responsibilities associated with your TA role and reflect on your approach to fulfilling these duties.
- Seek feedback early, mid- and end-of term through a combination of observation and/or written responses by professionals, peers, and students, about your teaching, facilitating, or other duties performed.
- Be critically self-reflective about the strategies and methods you employ in your TA work in order to continually improve your ability to provide the best conditions for students' learning.

3. *Discipline specific content knowledge related to the course assigned*

Possible learning activities/goals/outcomes:

- Seek to be familiar with the content that is directly pertinent to the duties you will be performing.

4. *Pedagogical knowledge and teaching strategies suitable to duties assigned*

Possible learning activities/goals/outcomes:

- Find out the most appropriate pedagogical methods to successfully fulfill those duties. For example, if you have been assigned to lead discussion in tutorials, seek out strategies that you can use to encourage discussion, how to develop questions suitable for the content, and how to work with students of differing abilities and engagement. Through professional development opportunities, you will seek out knowledge about pedagogy and teaching strategies to enhance your TA work.

5. *What is meant by learning-centeredness*

Possible learning activities/goals/outcomes:

- Understand that your work is about the learner and find information about ways to accommodate the learning needs of students.

SKILLS about...

1. *What is required to perform duties assigned*

Possible learning activities/goals/outcomes:

- Learn the skills required to fulfill those duties. These skills may include, but are not limited to: learning how to prepare lesson plans, rubrics, class outlines, or student feedback forms; use classroom and online technology; work with a diverse student population; give clear, concise, and stimulating presentations; keep a focus on learner centered teaching; mentor students; actively listen; give and receive feedback; help students work effectively in groups; engage in effective communication; and ask effective questions.

2. *How to navigate challenges*

Possible learning activities/goals/outcomes:

- Manage your time efficiently, set priorities, manage the classroom, resolve conflict, and manage student expectations so that you do not encounter adverse challenges in your work.

ABILITY to...

1. *Demonstrate professionalism*

Possible learning activities/goals/outcomes:

- Aim to be professional, confident, sensitive, and resilient with your interactions with everyone you work with.
- Ensure that you maintain integrity and confidentiality of student work at all times.
- Actively balance your time between work and life, and plan future goals.
- Develop lifelong learning habits and engage in reflective practice about your work and teaching.

2. *Develop strategies for effective interpersonal communication*

Possible learning activities/goals/outcomes:

- Actively seek answers from the course supervisor through appropriate communication channels about the questions you have about your TA role, while establishing and maintaining a professional relationship.
- With colleagues, you will seek out support, resources, and engage in a collegial collaborative relationship by participating in professional development provided by your department and other units on campus.
- With students, you will be available, approachable, inclusive, fair, and enthusiastic in all communication while maintaining professional boundaries.

Appendix I: Participant Consent Form

Interdisciplinary Department
Home Department is Anthropology

Participant Consent Form

Teaching Assistants' (TAs) Learning in the Workplace

You are invited to participate in a study entitled *Teaching Assistants' (TAs) Learning in the Workplace* that is being conducted by Cynthia Korpan.

Cynthia Korpan is a graduate student in the Interdisciplinary department (home department is anthropology) pursuing a doctoral degree at the University of Victoria.

As a graduate student, I am required to conduct research as part of the requirements for a degree in interdisciplinary doctorate. It is being conducted under the supervision of Dr. Margot Wilson and Dr. Gweneth Doane.

Purpose and Objectives

The purpose of this research project is to investigate the learning process that first time teaching assistants (TAs) undergo as they prepare to teach in the university setting. The research will be informed by theories related to workplace learning.

Importance of this Research

Research of this type is important because the workplace learning process that TAs undergo has never been researched and in order to ensure that TAs are supported in their learning in the workplace.

Research in workplace learning has shown that if the learning process of a work assignment is not understood, too many factors can undermine the process (Cosnefroy & Buhot, 2013; Eraut, 2007). Eraut (2007) states that in order to enhance learning in the workplace, it is essential that there is clear understanding of the range of ways that people learn in the job. Once this is determined, it is then possible to identify the learning needs in the context and attend to the "factors which enhance or hinder individual or group learning" (Eraut, 2007, p. 420). Since the outcome of this research is to ensure that new TAs are supported for their learning in the workplace, this research will help determine the factors that enhance and hinder that learning in order to inform TA teaching preparation programming. This research will not only inform how to best prepare new TAs for their new role of teaching in higher education but can then be used to further research the continuing process of supporting TAs beyond their first term teaching.

Participants Selection

You are being asked to participate in this study because you have never held a teaching position either in the K to 12 educational system, or in a post-secondary situation, in Canada or abroad, and your

departmental graduate advisor and course supervisor of the course that you are assigned to have consented to this research.

What is involved?

If you consent to voluntarily participate in this research, your participation will include agreement to maintaining a learning journal, and interviews with the researcher before the research begins and after each time the researcher video-records you teaching (two to three times as agreed). You will be provided with a learning journal that includes guiding questions. You will respond to the questions and provide other details that you deem important to the research about your learning process in learning how to teach. The learning journal time commitment will vary depending on the time you decide to devote to writing and responding to learning situations. The interviews will be approximately half an hour prior to your first teaching day and then approximately one hour the video-recorded teaching session that the researcher observes. The researcher will observe additional teaching sessions if you agree but these will not be video-recorded or be followed by an interview. All interviews will take place in the researcher's office located at Harry Hickman Building, Room 126, University of Victoria. Audio-tapes/and-written notes will be taken and a transcription will be made of all data for analysis only. Video tapes of your teaching will be taken with your permission and will be used during post-teaching interviews only to elicit memory and for no other purpose. Video-tapes will be destroyed when the research is complete. The learning journals will be kept by the researcher for analysis.

Inconvenience

Participation in this study may cause some inconvenience to you, including the amount of time required to think and reflect about your learning process as you learn how to teach in higher education and record this in your learning journal, as well as the time required for the one pre-teaching interview and the post-teaching interviews.

Risks

There are no known or anticipated risks to you by participating in this research. This research is not about judging what you do as a TA but rather is about researching the learning process that you are going through as you begin to teach in higher education.

Benefits

The potential benefits of your participation in this research include the following: Participants will undoubtedly gain significant professional development and knowledge of themselves as teachers and about student learning through reflecting on their learning process. Since the learning process that TAs undergo has not been researched before and particularly through the workplace learning lens, this research will contribute to the body of knowledge around TA teaching preparation, workplace learning, and the learning process of novice teachers. This research will then be available to all post-secondary institutions in Canada and abroad to help inform TA professional development and teaching preparation in order to enhance the quality of undergraduate teaching that benefits both society and the institutions. As an acknowledgement of your time and effort in participating in this research and the professional development that you will experience, I will provide a letter that clearly indicates this effort to engage in professional development. This letter will be useful for your future career, whether in the private or public sector.

Voluntary Participation

Your participation in this research must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. If you do withdraw from the study your data will be removed from the data base and destroyed.

On-going Consent

To make sure that you continue to consent to participate in this research, before each teaching observation or interview, you will be asked if you want to continue in the research, including writing in your learning journal and sharing the contents with the researcher, you will be required to sign below to indicate your agreement to continue in the research. If you withdraw all of your data will be removed and destroyed from the data base.

Anonymity

In terms of protecting your anonymity, the use of pseudonyms during data collection, in the analysis, and through dissemination of research will be used.

Confidentiality

Your confidentiality and the confidentiality of the data will be protected by being secured in locked file cabinets and electronically at the Learning and Teaching Centre. Raw data will be kept until completion of the research and only anonymized data will be stored indefinitely for consideration for future work that may relate to this research.

Dissemination of Results

It is anticipated that the results of this study will be shared with others in the following ways: directly to participants, published articles, dissertation, and scholarly presentations.

Disposal of Data

Data from this study will be stored indefinitely electronically and in locked cabinets at the Learning and Teaching Centre for potential use in future work that will reference this research.

Contacts

Individuals that may be contacted regarding this study include the researcher Cynthia Korpan and my supervisors, Dr. Margot Wilson or Dr. Gweneth Doane.

In addition, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office at the University of Victoria.

Your signature below indicates that you understand the above conditions of participation in this study, that you have had the opportunity to have your questions answered by the researchers, and that you consent to participate in this research project.

Name of Participant

Signature

Date

Ongoing consent to being observed in the classroom, keeping the learning journal, and participating in interviews:

Name of Participant _____
Signature _____
Date

Name of Participant _____
Signature _____
Date

Name of Participant _____
Signature _____
Date

Visually Recorded Images/Data Participant to provide initials, *only if you consent*:

- Videos may be taken of me for: Analysis _____

Future Use of Data *PLEASE SELECT STATEMENT*:

I consent to the use of my data in future research: _____ (Participant to provide initials)

I **do not** consent to the use of my data in future research: _____ (Participant to provide initials)

I consent to be contacted in the event my data is requested for future research: _____
(Participant to provide initials)

A copy of this consent will be left with you, and a copy will be taken by the researcher.

Appendix J: Keywords for Coding

Learning Synonyms	Antonyms	Reflection Synonyms
Absorb	Decline	Think
Ascertain	Discard	Contemplate
Acquire	Discount	Reflect
Aware	Disregard	Reason
Become	Eliminate	Ponder
Come across	Ignore	Consider
Comprehend	Miss	Ruminate
Culture	Neglect	Recall
Detect	Overlook	
Determine	Pass	
Digest	Refuse	
Discern	Reject	
Discover	Scrap	
Education		
Encounter		
Experience		
Find out		
Follow		
Gain		
Gather		
Grasp		
Know		
Inform		
Locate		
Master		
Notice		
Pick up		
Practice		
Prepare		
Proficiency		
Realize		
See		
Sense		
Skill		
Study		
Train		
Uncover		
Understand		
Learn		

Feel		
Evolve		

Appendix K: Coding Manual

Theme 1.0 Disposition (conceptions): values related to teaching and learning				
Definition: Beliefs, attitudes, qualities, and behaviour related to teaching and learning. Related to learning and teaching, this is often based on experience and what has worked regarding their learning and relationships to former or current teachers. This background will inform actions related to values about the position and work. These values can often be implicit and tacit knowledge and includes any judgement about expectations, assumptions, or qualities of students, teachers, TAs, and anything related to TA work. Dispositions and conceptions are composed from a learner's biography that is based on his or her learning experience and directs an individual's agency.				
Sub-themes	1.1 Caring (whole person, personal connections, and listening)	1.2 Sharing (approachable and knowledge)	1.3 Authority and control (power, organization, and value own experience)	1.4 Students work hard/TAs maintain high expectations (go beyond, challenge students, and judgement)
Theme 2.0 Preparing to teach: Self-directed learning process				
Definition: Accessing resources, making materials ready to use, and learning actions taken by TAs. Any learning action taken by the TA to prepare to teach that includes professional development, learning about pedagogy, seeking out information, and drawing on prior experience.				
Sub-themes	2.1 Access to resources (prior experience, professional development, colleagues, and course supervisor)		2.2 Learning actions (go over content, seek additional resources, refine delivery systems, think, and unprepared)	
Theme 3.0 Student subject position: Identity and its impact on the teaching role				
Definition: Positioning is about the explicit and implicit ways that people decide to act in context. Graduate students have been trained for years at being a student and in particular to be or act as a 'good student'. This is evident in how TAs approach their role that can be seen as taking actions similar to how a student has been trained to prepare for interactions in the classroom. Such as reading articles, reading professor notes, going online to prepare for presentations, etc. Through their student subject position, their experience in the classroom as led them to think that reading and taking notes is the way you prepare for the classroom.				
Sub-theme	3.1 Shifting identity or role transition (lack of confidence, vulnerability, and avoidance)			
Theme 4.0 Making teaching judgements: Prior to and during teaching				

Definition: The ability to make considered decisions or come to sensible conclusions based on the context during the teaching session. Any evidence showing that the TA is actively thinking, knowing-in-action, reflecting-in-action, using knowledge, and learning on the job that is evidenced by their actions not remaining stable but leads to change in planned activities or reaction to situations in the classroom.

Sub-themes	4.1 Unanticipated decision-making (students' action and classroom situations)	4.2 Deliberate decision-making (inaction, and transfer and knowledge development)
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Theme 5.0 Affordances associated with the position: Frequency and quality of support

Definition: Workplace affordances (opportunities) are the degree to which a person is invited in the workplace to access work practices. Looking for evidence of the frequency and quality of support offered that may include learning conversations, provisions, and resources from course supervisor that go beyond PowerPoint slides or texts, other mentors, colleagues, and whether they were restricted or encouraged to learn (structural dimension), and if encouraged were the opportunities in the subjective or social dimension.

Sub-themes	5.1 Self-directed (online, peers, and formal programs)	5.2 Minimal to no support (minimal contact with prof and department and no feedback)	5.3 Some support (hands-off coaching)	5.4 Significant support (teaching conversations)	5.5 Barriers (no pedagogical support, no student contact and support, and cannot contribute to improving course)
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Theme 6.0 Reflective practice: To impact future teaching

Definition: The ability to reflect on actions so as to engage in a process of continuous learning. May not be able to transfer to a new teaching situation but the intention is there to do so. Any evidence that the TA is thinking about what happened prior, during, or after teaching that will inform future teaching related actions indicates a learning process and the process of building knowledge. Using Schon's (1987) ladder of reflection; looking for evidence that TAs are: questioning, answering; advising, listening; demonstrating, observing; imitating, and criticizing their actions. After finding evidence of any part of this sequencing, then looking at the level of reflection applied to the reflective process; is it simply descriptive, or does the individual take the reflections further by analyzing themselves or others, and lastly do are they able to reflect from different perspectives as to what was going on. Additionally, the content of reflection; is the content about themselves or about students, or some other aspect. What is the type of reflection that TAs are reflecting about? What did they learn about teaching and student learning?

Sub-themes	6.1	6.2	6.3	6.4
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	Self (content knowledge, teaching approach, and skills)	Learning about (factors that affect teaching)	Questioning (signature pedagogies, structural factors, subjective factors, social factors, and teaching)	Lacking (non-existent reflection and restrictive reflection)
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