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# Bridging the Gap: The Impact of the 'Teaching in the Canadian Classroom' Program on the Teaching Effectiveness of International Teaching Assistants

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## Executive Summary

### Context

The programs featured in this research represent the two main approaches to international teaching assistant (ITA) preparation in Canada. The first is a traditional or general Teaching Assistant Training Program (TATP), in which ITAs participate in twenty hours of preparation for teaching in an interdisciplinary cohort, together with Canadian graduate students. The second program, 'Teaching in the Canadian Classroom' (TCC), is a training program designed especially for ITAs. ITAs participate in twenty hours of preparation for teaching in an interdisciplinary cohort, but only with other ITAs. Both programs include video-recorded microteaching sessions, during which teaching assistants (TAs) receive detailed feedback on a ten-minute lesson that they teach. Both programs also include modules on effective teaching techniques. What makes the 'Teaching in the Canadian Classroom' program unique is that it includes a substantial intercultural communication component. This component addresses cultural differences in the role of instructors and students, expectations for student engagement in Canadian classrooms, and communication strategies that may help ITAs bridge cultural differences in communication styles with their students and their supervisors.

### Research Question

The goal of this study was to examine whether a TA training program with substantial intercultural content (TCC) better facilitates the transition of international graduate students to Canadian academia than a traditional/general TA program with limited intercultural components (TATP). Based on previous research on TA development, it was hypothesized that ITAs would make greater gains in teaching effectiveness in the program that is enhanced with substantial intercultural components than in the general training program. Canadian TAs participating in TATP were included in the research as a comparison group.

### Methods

The differences between the impacts of the two programs were assessed using a combination of self-report surveys, observer ratings of effective teacher behaviours, and focus group interviews. Participants filled out two questionnaires before and after the program. The first questionnaire assessed their teaching self-efficacy and the second measured their level of communication apprehension. In each training program, TAs completed two ten-minute microteaching sessions that were recorded on high definition video. One microteaching session occurred at the beginning of the program and a second session close to the end, which allowed us to compare coders' ratings of participants' teacher behaviours across their two microteaching sessions. Almost 400 microteaching videos were coded by the research team using the Teacher Behaviours Inventory (TBI; Murray, 1983). To our knowledge, this represents the largest set of video-recorded microteaching analyzed in the literature to date. In addition, focus group interviews were conducted with a sub-sample of participants four to eight months after each program to assess the long-term impact of participation in TA training.

### Summary of Findings

The hypotheses were partially supported. As predicted, the group of ITAs who participated in a program enhanced with intercultural components (TCC) made greater gains in their overall teaching effectiveness in a microteaching session, as assessed with the TBI, than the ITAs or Canadian students in TATP. At the same time, there were no significant differences between the three groups in the gains in teacher effectiveness from Time 1 to Time 2 on the two sub-scales of the TBI. Furthermore, we did not find significant differences between the impact of TATP and TCC on Canadian (in TATP) or international teaching assistants' teaching self-efficacy or communication apprehension from Time 1 to Time 2.

In fact, the impact of the two programs was quite similar. It was found that teaching self-efficacy increased and communication apprehension decreased for all three groups from Time 1 to Time 2. Also, from Time 1 to Time 2 the three groups all demonstrated a significant increase in the frequency of effective teacher behaviours on the Interaction and Organization subscales of the TBI. However, focus group interviews with participants (predominantly international TAs) revealed considerable differences between the two programs in terms of long-term impact. ITAs in both TATP and TCC described a shift towards more student-centered approaches to teaching, and demonstrated an increased ability to promote inquiry and facilitate active learning activities in their classrooms. But there was also a notable difference between ITAs in the two programs in terms of the complexity of their examples and the depth of their reflection on teaching. TCC participants were able to provide more nuanced descriptions of teaching situations. They described a high level of reflection in their interpersonal interaction with undergraduate students and demonstrated a more complex understanding of these interactions. They applied intercultural communication concepts that they learned in the class to their analysis of teaching situations. By reflecting on teaching situations using cultural differences in classroom communication, they demonstrated an increased level of intercultural competence.

This study supports the assertion that TA training programs for Canadian and international TAs can be very effective and may make an important contribution to the quality of undergraduate education. The findings also suggest that a program enhanced with intercultural communication components may help ITAs interact effectively, not only in the classroom, but also in other academic settings.



## Background

The goal of this research is to examine whether a TA training program with substantial intercultural content better facilitates the transition of international graduate students to Canadian academia than a general TA training program with limited intercultural components.

In order to accomplish this goal, we compare the impact of two programs offered by the Teaching Support Centre at Western University on the teaching effectiveness of international teaching assistants (ITAs). The two programs represent common approaches to international TA preparation in Canada. The first is a traditional or general Teaching Assistant Training Program (TATP), in which ITAs participate in twenty hours of preparation for teaching in an interdisciplinary cohort, together with Canadian graduate students. The second program, 'Teaching in the Canadian Classroom' (TCC), is a training program designed especially for ITAs. ITAs participate in twenty hours of preparation for teaching in an interdisciplinary cohort, but only with other ITAs. Both programs include video-recorded microteaching sessions, during which participants receive detailed feedback on a ten-minute lesson that they teach. Both programs also include modules on effective teaching techniques. What makes the 'Teaching in the Canadian Classroom' program unique is that it includes a substantial intercultural communication component. This component addresses cultural differences in the role of instructors and students, expectations for student engagement in Canadian classrooms, and communication strategies that may help ITAs bridge cultural differences in communication styles with their students and their supervisors.

### ITAs at Canadian Universities

Graduate teaching assistants (TAs) play an important role in undergraduate education in Ontario and throughout Canada. At many universities, the majority of tutorials and labs are taught by TAs and much of the marking is performed by them, particularly in the lab-based sciences, language programs, and in disciplines where large classes with over 200 or 300 undergraduate students dominate. These TAs are therefore in a position to make a substantial contribution to the quality of undergraduate education at Ontario universities, and their impact is dependent on the caliber of their teaching abilities.

Many of these TAs are international students, especially in areas such as the sciences, Engineering, and math-based disciplines like Economics, Biostatistics, and Accounting. At Western University, a large university with an undergraduate student population of 30,000 and a graduate student population of 5500, 26 per cent of graduate students and approximately 38 per cent of teaching assistants are international or new Canadians (i.e., having spent less than four years in Canada). In some STEM disciplines, the proportion of international students among TAs is as high as 83 per cent (Le Gros, 2010).

The Teaching Support Centre at Western University offers a wide selection of programs to prepare international graduate students for their role as teaching assistants and as future faculty. All of Western's programs for international graduate students include significant intercultural communication components, designed to enhance international students' teaching effectiveness, communication skills, and ability to establish productive working relationships with faculty mentors.

International graduate students acknowledge that they need to prepare for their new teaching role. The rate of international doctoral student participation in teaching development programs at Western is high. Although ITAs form only 38 per cent of the TA population, 50 per cent of TATP participants are ITAs. The work of Laroche (2003) has shown that international graduate students and other highly qualified personnel arrive in Canada with very high "technical skills" but less developed "soft skills." International graduate students' chances of succeeding in their discipline and of securing employment after graduation has been found to increase significantly as a result of both communication training and intercultural training (Laroche & Rutherford, 2007). The competencies that ITAs learn in TA training programs, when enhanced with cross-cultural components, not only increase students' intercultural competence in the classroom while teaching,

but also contribute to students' development of several skills listed among the Ontario Graduate Degree Level Expectations, as identified in the Council of Ontario Universities (COU) Quality Assurance Framework (2012), as well as the acquisition of key professional skills identified as critical in the development of new researchers by the Canadian Association of Graduate Studies (CAGS, 2008).

## Training Needs of ITAs

ITAs need support and training in two main areas in order to provide high quality instruction to undergraduates at Ontario universities. First, as with all TAs, they need general preparation for effective university teaching. Second, they need support and training specifically for teaching in Canada; this includes cross-cultural communication training, and support during their gradual adaptation to Canadian academic culture.

### *General Preparation for University Teaching*

The vast majority of new graduate students arrive at Ontario universities with little or no teaching experience at the university level. To prepare these students for their roles as teaching assistants, institutions often offer early semester training programs that range in length from two to 20 hours and focus on TA "survival skills" for the classroom (Palmer, 2012; Shannon, Twale, & Moore, 1998). The majority of these TA programs take a behavioural approach to enhancing teaching skills by having participants observe and model excellent teacher behaviours (Boman, 2008). The most common outcomes of this programming include knowledge of and ability to use teaching techniques (e.g., lecturing, discussion, group work), the ability to mark assignments and provide effective feedback, familiarity with educational technologies, and familiarity with classroom management techniques (Robinson, 2012; Taylor, Schnöwetter, Ellis, & Roberts, 2008). It is important to distinguish "orientation" TA training programs, attended by large numbers of entering graduate students, from extended, semester-long courses on teaching (Schnöwetter, Ellis, Taylor, & Koop, 2008), and from teaching certificate programs that promote the development of graduate students as future faculty and are attended by a much smaller number of students each year (Taylor et al., 2008).

General TA training programs provide ITAs with valuable opportunities for teaching practice and feedback but they do not address the ways in which ITAs may need to adapt their communication style to communicate effectively with undergraduates. Nor do they address the potential misunderstandings that may take place in the classroom as a result of cultural differences in expectations for the instructor and student roles (McCalman, 2007). Training designed specifically to develop ITAs' intercultural communication competence in the teaching context (e.g., *Teaching in the Canadian Classroom*) addresses these gaps (Bauer, 1996; Hoekje & Williams, 1994; Le Gros & Faez, 2012).

### *Specific Preparation for Teaching in Canada*

International graduate students preparing to teach at Canadian universities face a challenging task. They are preparing to teach in a second language and in an academic environment where norms and expectations for teacher behaviour and communication style may differ significantly from expectations in their home culture (Biggs & Watkins, 1999; Brown, 2008; Crabtree & Sapp, 2004; Eland, 2001; Gorsuch, 2003; Hoekje & Williams, 1992; McCalman, 2007). During the first few months of their TA assignment, ITAs need to discover and understand key cultural differences in teaching communication that influence their interactions with students.

The cultural dimension that has the greatest impact on the teaching style of ITAs is power distance (Hofstede, 1991). The majority of international graduate students at Ontario universities come to Canada from high power distance cultures such as Iran, India or China – cultures in which higher education is primarily teacher-centered and relies heavily on the lecture method (Bauer, 1996; Blunt & Li, 1998; Crabtree & Sapp, 2004; Eland, 2001). In these cultures, the difference between the relative status of the instructor and that of the student is large. As a result, students rarely interrupt the professor during class to ask questions (Bates

Holland, 2008), professors rarely admit if they do not know the answer to a question (Eland, 2001), and students rarely disagree with the professor during class discussion (Knight, 1999; Smith, 1999). In contrast, at Canadian universities, instructors are expected to engage students, use active learning, and create a more learner-centered environment (McCalman, 2007). Canadian students may interrupt their instructors, challenge their ideas and communicate with them in a relatively informal style. In the cultures of most ITAs, students cannot challenge a grade (Gorsuch, 2003).

In addition to power distance, the cultural differences that impact the student-instructor interaction the most and which therefore need to be addressed in the training of ITAs include:

- (1) *Ways of giving feedback*, including how direct and indirect feedback may be, whether it is provided in front of others or through confidential means, and whether and how a student is expected to respond to feedback. Students from France or the Netherlands, as well as students from Eastern European cultures are accustomed to giving and receiving much more blunt feedback than their Canadian counterparts (Laroche, 2007; Dimitrov, 2009).
- (2) *Expectations for presenting information*, including differences between linear and circular communication styles as well as directness and indirectness, and whether the responsibility for making sure that the message is understood lies with the speaker or the listener. For example, TAs from South American and African cultures are likely to use circular and inductive reasoning in their presentations, which their students – used to linear and deductive reasoning – may find difficult to follow (Hall, 1986; Le Gros & Faez, 2012).
- (3) *Expectations during classroom dialogue*, including norms about asking questions, turn-taking, and interrupting conversation. For example, in French and in Eastern European cultures, interrupting during fast-paced conversation is a sign of interest and engagement, while in North America interrupting is perceived quite negatively (Myers, 1994; Wieland, 1997).
- (4) *Ways of responding to disagreement or conflict*, such as whether students and TAs are comfortable with open disagreement and debate during class, or whether they prefer to preserve interpersonal harmony. Some cultures value arguing passionately for or against an issue (such as Slavic cultures or the cultures of the Middle East), whereas others value controlled emotions and detachment during the exchange of ideas in class (Hammer, 2005). How students approach conflict with their supervisors also differs across cultures (Adrian-Taylor, Noels, & Tischler, 2007).
- (5) *Expectations for rule following and whether rules are negotiable*, which influences whether students may challenge rules and ask for exceptions to course policies. The latter is common on Middle Eastern cultures such as Egypt, Syria, or Lebanon (Nisbett, 2004).
- (6) *Strategies for saving face* and whether students are mindful of saving face not only for themselves but for the instructor and other students in the class. For example, students with a high level of mindfulness about face-needs may avoid asking questions in class because they feel that this may indicate that the instructor did not explain a concept well and may therefore embarrass the instructor (Ting-Toomey & Kurogi, 1998).
- (7) *Differences in learner initiative in the classroom*: whether students need to wait for direction from a professor or TA, for example, before choosing research topics or approaching assignments creatively (Cryer & Okorochoa, 1999; Dimitrov, 2009).
- (8) *The extent to which students are comfortable critiquing the ideas of others* during class discussion (Biggs & Watkins, 1999; Knight, 1999). In many cultures, only professors may critique the ideas or the work of students in class, so engaging in a critical debate or giving peer feedback is a novel experience for many international students. In a HEQCO study of the sheltered ESL program at OCAD University, for example, students spoke eloquently about their discomfort with critiquing the work of peers in class (Smollett, Arakawa, & Keefer, 2012).

Without cross-cultural training for ITAs, cultural differences in teaching and communication styles and instructor roles are likely to lead to misunderstandings between international instructors and their undergraduate students (Fitch & Morgan, 2003) as well as to inaccurate attributions of student behaviour by instructors (Bauer, 1996; Yook & Albert, 1999). Without an understanding of cultural differences in classroom interaction, ITAs may perceive their engaged, curious students who ask questions as rude, whereas

Canadian students may perceive the indirect communication style of some ITAs as a sign of being unprepared or unorganized. These misunderstandings are likely to interfere with student learning (McCroskey, 2003) and result in negative instructor evaluations (Crabtree & Sapp, 2004; Jenkins, 2000).

In order to teach effectively at a Canadian institution, ITAs need to develop “intercultural instructional communication competence” (Dimitrov, 2012; Hoekje & Williams, 1994; Worley, Tisworth, Worley, & Cornett-DeVito, 2007). Intercultural instructional communication competence is a specific form of intercultural competence that allows ITAs to interact with students effectively in an academic setting, in a way that is appropriate to the academic context (Spitzberg & Chagnon, 2009), is effective in reaching instructional objectives, and which allows ITAs to establish meaningful relationships with their students both in and outside of class (McCroskey, 2003; Wiseman, 2001). In order to communicate effectively in Canadian academic settings, ITAs need to:

- (1) *Become familiar with and understand norms and expectations of Canadian academic culture.* This involves learning norms for giving presentations, assessing student performance, giving feedback, incorporating feedback from students into their teaching, promoting academic integrity, communicating with students in and outside of class, responding to student emails and inquiries during office hours, as well as communicating with faculty supervisors, working with an instructional team, and communicating with departmental staff.
- (2) *Develop the intercultural communication competence to interact with students in a way that supports student learning.* As a result, they will be able to articulate clear learning objectives, provide effective feedback, deliver well-organized information, promote student engagement, manage classroom participation and have the ability to clarify classroom expectations.

## Previous Research

### Research on the Effectiveness of TA and ITA Training Programs

Over the past decade, a growing literature has examined the challenges that ITAs face when they begin to teach at North American, Australian and British universities (Bauer & Tanner, 1994; Gorsuch, 2012; Jenkins, 2000; Lazarton, 2003; Madden & Myers, 1994; Ryan & Carroll, 2005; Sarkisian & Maurer, 1998) and has called for more training and development opportunities for ITAs. Very few studies, however, have assessed the outcomes of ITA training efforts. This mirrors the small number of studies assessing the outcomes of general TA training programs.

In the present study, we wanted to go beyond the early studies of TA program outcomes, which either used self-report measures of what participants learned in the program or used participant satisfaction ratings (Chism, 1998; Taylor et al., 2008). The studies that have gone beyond self-report measures and used observer ratings tend to work with small samples of graduate student teachers. These studies provide interesting qualitative findings based on supervisor notes and other non-self-reported data, but the small sample sizes cannot be generalized to larger populations (e.g., Stepp-Greany, 2004).

In order to address the gaps in ITA training research identified above, we decided to gather data from a large enough sample to make the findings generalizable, and we concentrated on three outcome variables: self ratings of teaching self-efficacy, self ratings of communication apprehension, and observer ratings of low-inference teacher behaviours.

#### *Teacher Self-efficacy*

One of the intended outcomes of Western's TA training programs is to help TAs achieve greater teacher self-efficacy. Teacher self-efficacy is commonly operationalized as the belief that one can successfully master the teacher behaviours necessary to achieve the required learning or teaching outcomes (Prieto & Meyers, 1999) and is considered to be an important mediating variable in teacher effectiveness (Boman, 2008). Teachers with high self-efficacy beliefs are more likely to engage in a range of effective teaching practices than are teachers with low self-efficacy (Gordon & Debus, 2002). Furthermore, researchers have found that successful mastery of appropriate teacher behaviours as a result of training leads to increases in a teacher's sense of self-efficacy (Prieto & Meyers, 1999). It was also found that longer training periods result in greater increases in teacher self-efficacy (Postareff, Lindblom-Ylänne, & Nevgi, 2007). Finally, a study with international faculty members in the U.S. found that increased self-efficacy contributes to the success of non-native teachers (McCalman, 2007). During microteaching sessions, a key component of the TATP and TCC programs, participants have the opportunity to practice the skills they need to be successful in classroom teaching, in addition to receiving feedback on their teaching. Both of these activities are likely to lead to greater teacher self-efficacy when performed within a supportive environment.

#### *Effective Teacher Behaviours*

In this research, we are drawing on two decades of research by Murray (e.g., 1997), who examined the relationship between low-inference teacher behaviours and teaching ratings and established the Teacher Behaviours Inventory (TBI; Murray, 1983) as a reliable measure of those low-inference teacher behaviours. We are also drawing on Boman's (2008; 2012) comprehensive, multi-method study of the outcomes of a TA Program in Canada, which also utilized the TBI. The TBI was specifically designed to measure low-inference behaviours that have been found to be significantly correlated with overt measures of teaching excellence such as student evaluations of teaching. Low-inference behaviours are concrete actions, such as "maintains eye contact with students" or "defines new or unfamiliar terms" (Murray, 1983). Unlike other research, which often focuses on what faculty believe about teaching or what their attitudes are about students, Murray's research considered what faculty actually do in the classroom. In her research with TAs, Boman (2008) used

an abbreviated form of the TBI, one which eliminated items not relevant to the context (e.g., “advises students regarding exams,” Murray, 1983), to examine behaviours that are likely to occur in a ten-minute microteaching session.

## Communication Apprehension

Communication apprehension is defined as public speaking anxiety (Dawson, 1994) and has been found to be inversely related to self-esteem (McCroskey, 1984). International graduate students experience a higher level of communication apprehension than do their Canadian counterparts, a difference which is only heightened by having to speak in front of a larger audience when they teach (Cheng & Erben, 2012). Training for ITAs should specifically address communication apprehension among ESL speakers and alleviate fears that ITAs often have about their accents, making grammatical mistakes in class, and not understanding their students' questions well enough to answer them. There is some evidence in the faculty development literature that training increases participants' confidence and decreases their communication apprehension (Butcher & Stoncel, 2012), a finding which was also observed in Boman's (2008) study of TATP at Western. Boman suggested that the feedback participants received as a result of the microteaching sessions led to decreased anxiety about teaching and less communication apprehension.

## Research on the Impact of TA Programs at Western University

To date, three studies have been conducted at Western on the Teaching Assistant Training Program (TATP) and the 'Teaching in the Canadian Classroom' (TCC) program. However, the previous research examined the impact of each program separately and did not investigate the relative impact of the programs on ITAs. The first study by Boman (2008; 2012), demonstrated that TATP results in a significant increase in participants' teacher self-efficacy and effective teacher behaviours. Boman also found a significant decrease in communication apprehension over the course of TATP. Although both Canadian TAs and ITAs significantly improved in their performance of low-inference teacher behaviours over the course of the program, a gap in teaching effectiveness was found to persist between the two groups. Even after both groups had received the 20 hours of training, Canadian TAs continued to outperform their international peers.

Two separate studies on the outcomes of the TCC program have also shown this program to be effective, resulting in significant increases in student confidence and changes in effective teacher behaviours (Le Gros & Faez, 2012), as well as in increased intercultural sensitivity (LeGros, 2008). The changes in effective behaviours were most evident in the areas of perceived instructor effectiveness, ability to give positive feedback, and ability to illustrate teaching material with concrete examples (Le Gros & Faez, 2012).

Therefore, all three studies clearly support the hypothesis that these training programs increase participants' teacher self-efficacy and performance of effective low-inference teacher behaviours and decrease their communication apprehension. However, none of these studies explicitly compared the relative impact of the two programs (TATP and TCC) on these variables. The results of these studies raised the question – given the limited amount of time graduate students have to participate in training – is it more effective for ITAs to participate in a training program enhanced by intercultural communication modules rather than in a general TA training session?

## Description of Programs Assessed

Western's array of programs designed specifically for international graduate students includes an orientation for ITAs, workshops on mentoring across cultures, teaching, communication and pronunciation in the Canadian classroom, and workshops on the language of conference presentations. For full program listings, see [http://www.uwo.ca/tsc/international\\_student\\_programs.htm](http://www.uwo.ca/tsc/international_student_programs.htm).

The Teaching Assistant Training Program (TATP), our longest running program at over 20 years, requires a three-day commitment to complete a twenty-hour workshop designed for new teaching assistants. Participants register in advance and pay a twenty dollar deposit which is refunded upon completion of the program. The program is composed of eight highly interactive workshop modules that focus on effective presentation and feedback strategies, building lessons, marking practices, active learning, discussion facilitation and science teaching techniques, case studies of common TA teaching situations, and a ninety-minute session on facilitating learning in an intercultural classroom. During the workshop modules, facilitators demonstrate and model a large variety of participatory learning activities. TATP includes two video-recorded microteaching sessions, during which participants facilitate a ten-minute lesson and receive feedback on their teaching from a small group of four to five peers who participated in the lesson. Each year, 250 to 300 teaching assistants participate in TATP at Western (eight sessions with roughly 36 TAs per session). On average, 50 per cent of TATP participants are ITAs, many of whom are brand new to Canada (i.e., less than two years residence in the country). See Appendix A for a detailed TATP outline.

The 'Teaching in the Canadian Classroom' (TCC) program was introduced in 2005. A total of 60 to 70 ITAs participate in TCC each year (three to four sessions per year with roughly 20 participants per session). Participants in the TCC program commit to 20 hours of programming spread over five weeks. Similar to TATP, participants register in advance and pay a twenty dollar deposit that is refunded upon completion of the program. TCC sessions are accompanied by LeGros' (2009) 100-page e-book: *Communication Strategies for International Graduate Students: Surviving and Thriving in Canadian Academia*. The book can be accessed by participants via course management software and includes links to video samples of Canadian students' communication and interaction with TAs. The table of contents and sample chapters of the book are available online at <http://www.uwo.ca/tsc/csigs.html>, and the book can be made accessible to students and faculty at other institutions.

The goals of the TCC are to develop participants' teaching and intercultural communication competence for the Canadian context and to provide them with an opportunity to receive feedback on their teaching skills in a small group setting through two ten-minute, video-recorded microteaching sessions. TCC is unique because it combines elements of traditional teaching development programs, such as microteaching and peer feedback, with modules on cultural differences in ITAs' behavioural expectations that impact their relationships with students, supervisors, and university staff. As with TATP, TCC participants experience a variety of active learning exercises and participate in large and small group discussions throughout the program. The ninety-minute session provided during TATP on facilitating learning in an intercultural classroom is also included as part of the TCC program. See Appendix A for a detailed TCC program outline.

The design of TCC was informed by research on the impact of cultural differences on the teaching performance of ITAs (Brown, 2008; Crabtree & Sapp, 2004; McCalman, 2007; McCroskey, 2003), the cross-cultural adaptation of graduate students (Dimitrov, 2009), cross-cultural competence in general (Deardorff, 2006; Dinges & Baldwin, 1996; Spitzberg & Chagnon, 2009), the academic experience of international graduate students (Eland, 2001), and on principles of training design for intercultural programs (Bennett, 1993; Paige, 1993; Paige & Martin, 1996). In addition, while preparing the program, the designers surveyed other well-established programs for ITAs offered at the University of Minnesota, Syracuse University, and the University of Melbourne.

## Research Questions and Hypotheses

The study relied on a quasi-experimental design, using a combination of quantitative and qualitative methods to address the following research question:

*Does a teaching assistant training program with explicit intercultural communication components result in greater improvements in international teaching assistants' teaching effectiveness, self-efficacy, and communication apprehension than a traditional TA training program without a significant cross-cultural content?*

Canadian TAs participating in TATP were included in the research as a comparison group.

Participants' teacher behaviours, as demonstrated in the microteaching videos, were coded using a modified version of the Teacher Behaviours Inventory (Murray, 1997) by two coders under the guidance of the PI and an experienced research assistant. Coders received eight hours of training on the instrument and coding scheme. Inter-coder reliability was calculated to assure consistency among coders.

Changes in participants' self-efficacy and communication apprehension from pre-test to post-test were assessed using the Teaching Assistant Self-efficacy Scale (Boman, 2008) and the Personal Report of Communication Apprehension (McCroskey, 1982). In addition, content analysis of interviews with a sub-sample of participants from each program examined students' perception of change in their teacher behaviours and provided examples of cognitive change and reflective practice in participants.

- *Hypothesis 1:*  
TA self-efficacy scores will increase from pre-test to post-test in both the TATP and the TCC programs, and the difference between post-test and pre-test self-efficacy scores will be greater in the TCC than in TATP (for either international or Canadian TAs), i.e., the TCC will result in greater improvement of self-efficacy.
- *Hypothesis 2:*  
TA communication apprehension scores will decrease from pre-test to post-test in both the TATP and the TCC programs, and the difference between post-test and pre-test self-efficacy scores will be greater in the TCC than in the TATP (for either international or Canadian TAs), i.e., the TCC will help reduce ITA communication apprehension to a greater extent.
- *Hypothesis 3:*  
Effective teacher behaviours (as measured by observer ratings on the TBI) of TAs will increase from pre-test to post-test, and the difference between post-test and pre-test of observer-rated teacher behaviours scores will be greater in the TCC than in the TATP (for either international and Canadian TAs).
- *Hypothesis 4:*  
The difference between the self-efficacy, communication apprehension, and TBI scores of Canadian TAs and the average self-efficacy, communication apprehension, and TBI scores of ITAs will be smaller at post-test than at pre-test, i.e., there will be a gap between Canadian TA and ITA scores both at pre-test and post-test, but the gap will decrease as a result of training in both programs.
- *Hypothesis 5:*  
At post-test, the gap between Canadian TA scores in the TATP program and ITA scores in the TATP program will be greater than the gap between Canadian TA post-test scores in the TATP Program and ITA post-test scores in the TCC program, i.e., the TCC will help close the gap between Canadian TAs and ITAs to a greater extent than the general TA training program.



## Method

The study relied on a quasi-experimental design, using a combination of quantitative and qualitative methods, including self-report surveys, video recordings and focus group interviews.

### Recruitment of Subjects and Survey Administration

Students enrolled in both the TCC and TATP programs between January 2011 and January 2012 were invited to participate in the study. Some of the participants are new to their roles as teaching assistants, while others start the programs with more experience. No academic discipline was excluded during recruitment. At the beginning of each program, after signing the ethics consent form, participants completed a set of self-report paper questionnaires (i.e., Demographic Information and Teaching Experiences, Teaching Assistant Self-efficacy Scale (TASE), and the Personal Report of Communication Apprehension (PRCA)). At the end of the program, students were asked to again complete the TASE Scale and the PRCA, and to submit contact information if they wished to participate in a follow-up focus group.

### Participants

Of the 302 students enrolled in eight TATP sessions between January 2011 and September 2011, 183 (61%) agreed to participate in our research. No TATP sessions were held between September 2011 and January 2012. Five TCC sessions occurred between January 2011 and January 2012. Of the 139 students enrolled in this program, 72 (52%) agreed to participate in the study. Table 1 provides the number of participants in each of the four data collection categories. Not all participants completed all four data collection categories. The lower number of Time 2 surveys relative to the other categories may be explained by the fact that not all participants were able to attend the last hour of the program (both TATP and TCC), which is when the Time 2 data were collected. In addition, some participants had to be eliminated when the data from the demographic survey was analyzed because they did not clearly fit in one group or another. For example, an ESL participant from Quebec is not an international student but is also not a native speaker of English. For the purposes of the quantitative analysis, international students who have resided in Canada for more than two years were not considered international. Of the 486 videos recorded, only 378 videos were analyzed. Videos were discarded if the audio quality was poor or if the video was an inappropriate length (more than +/- two minutes outside of ten minutes). In the end, we had 189 participants who had completed the Time 1 and Time 2 surveys and microteaching videos (Table 1).

**Table 1: Number of Participants in Each Data Collection Category**

	Program	Time 1 Survey <sup>1</sup>	Time 2 Survey	Time 1 Video	Time 2 Video
Data collected	TATP	176	167	179	179
	TCC	66	54	64	64
	Total	242	221	243	243
Data analyzed	TATP	148	143	136	136
	TCC	56	46	53	53
	Total	204	189	189	189

Note: <sup>1</sup> Demographic information was collected as part of the Time 1 surveys.

The International TAs in the study come from 29 countries on five continents. The most frequently represented countries are China (30 TAs), Iran (30), India (7), Egypt (6), Ghana (5), Brazil (4) and Mexico (4). Table 2 contains the demographic characteristics of the participants.

**Table 2: Demographic Characteristics of Participants in Percentage<sup>1</sup>**

		TATP International	TATP Canadian	TCC
Age <sup>2</sup>		27.4 (5.7)	25.19 (6.0)	28.4 (5.6)
Gender (%)	Female	40.6	51.8	38.2
	Male	59.4	48.2	61.8
Program year	Master's 1	54.7	65.9	40.7
	Master's 2	6.3	11.8	11.1
	Ph.D. 1	28.1	17.6	37.0
	Ph.D. 2	7.8	3.5	7.4
	Ph.D. 3	3.1	1.2	3.7
Time in Canada	Less than 1 month	34.4	0	17.9
	1 to 3 months	9.4	0	10.7
	3 to 6 months	10.9	0	25.0
	6 to 12 months	12.5	0	12.5
	1 year	6.3	0	23.2
	2 years	26.6	1.2	10.7
	5 to 9 years	0	3.6	0
	10+ years	0	20.2	0
	Whole life	0	75	0
Lived in other English-speaking country	Yes	35.9	35.3	28.6
	No	64.1	62	71.4
Terms as a TA	0	61.9	69.4	50.9
	1-2	17.5	15.3	32.7
	3-4	11.1	10.6	12.7
	5-6	3.2	2.4	1.8
	7	6.3	2.4	1.8
Training as a teacher	Yes	11.5	5.9	23.2
	No	88.5	94.1	76.8
Taught as a teacher	Yes	29.5	10.7	40
	No	70.5	89.3	60

Note: <sup>1</sup> Number of participants n = 205; <sup>2</sup> indicates mean and standard deviation provided rather than percentage.

## Instruments

### *Demographic Information*

Information about the participants' previous teaching experience, country of origin, and other demographic information was collected using a short questionnaire (see Appendix B).

### *Teacher Behaviours Inventory*

Low-inference teacher behaviours were measured using an abbreviated form of the Teacher Behaviours Inventory (Boman, 2008). This instrument is based on the fifty-item inventory developed by Murray (1983). Behaviours were rated on a five-point scale from 1 (*Almost Never*) to 5 (*Almost Always*), with the option of a *Not Applicable* category. The validity and reliability of this measure have been previously established by Murray (1985), Erdle and Murray (1986), and Renaud (1996). The abbreviated form contained nineteen items from the original scale developed by Murray. The items selected by Boman (2008) were all behaviours that were likely to occur in the ten-minute microteach, such as "Individual uses concrete everyday examples to explain concepts and principles," "Individual speaks in a dramatic or expressive way," and "Individual speaks at an appropriate pace" (Murray, 1983). One item related to sticking to the point in answering students' question was later dropped from the scale due to the low frequency of occurrence by participants. A final item, "Overall effectiveness as an instructor," was evaluated on a 1 (*Strongly Disagree*) to 7 (*Strongly Agree*) scale.

Inter-rater reliability was calculated on forty randomly selected microteaching segments (10.6% of the microteaching segments). Three items were dropped because of low inter-rater reliability ( $r$ 's = .16, .38, and .48). The inter-rater reliability for the remaining items ranged from  $r = .65$  to  $r = .90$ . The overall effectiveness item had an inter-rater reliability of  $r = .87$ .

A principal components analysis of the remaining fourteen items, excluding the overall effectiveness item, revealed three components. The first component, containing six items, related to the TAs interactions with students in the classroom (e.g., "asking questions to the class"). The second component also consisted of six items that were found to be related to the organization of material (e.g., "appropriate amount of material for the given period"). The third component consisted of two items and had low internal consistency (Cronbach's Alpha = .37). It was dropped from further analyses. The two viable components were found to have moderate reliability, with Cronbach's Alphas of .68 and .71 for the Time 1 data and .65 and .58 for the Time 2 data.

### *Self-efficacy*

TA self-efficacy was assessed using the Teaching Assistant Self-efficacy Scale (TASE). The TASE scale was adapted by Boman (2008) from Tollerud's (1990) Self-efficacy Towards Teaching Inventory (SETI) and Streveler's (1993) confidence scale for TAs. This is a 34-item questionnaire rated on a five-point Likert scale (1 = *Not Confident* to 5 = *Completely Confident*). Boman made minor changes to the language of the twenty-six items she used from the two scales to increase the clarity of the language for English as second language students. Participants were asked to indicate how confident they would be in their ability to complete a series of teaching tasks such as giving a lecture, teaching students from different cultural backgrounds, or motivating students' interest in a lecture. The results of Boman's factor analysis indicated that the scale contains three factors. The first factor was composed of four items related to how TAs would improve their teaching (e.g., "through feedback from student evaluations of teaching"). The second factor (fifteen items) concerned lecturing and interacting with students (e.g., "motivating students' interest in a class" or "encouraging class participation"). Finally, the third factor (twelve items) focused on their confidence in preparation or written tasks for teaching (e.g., "writing learning objectives" or "planning an organized lecture"). The reliability and validity of the inventories by Tollerud (1990) and Streveler (1993) have been supported in studies by Prieto

and Altmaier (1994), Prieto and Meyers (1999), and Nugent, Bradshaw, and Kito (1999). In this study, the Cronbach's Alphas on the sub-scales ranged from .76 to .91.

### *Communication Anxiety*

This trait was measured using the Personal Report of Communication Apprehension (PRCA-24). This is a 24-item self-report measure that asks respondents to record their feelings about communication with others on a five-point Likert scale, with higher scores indicating stronger agreement with the statement. The instrument was developed by McCroskey (1982) and validated by Levine and McCroskey (1990) and McCroskey and Beatty (1984).

This scale assesses communication apprehension in four situations: 1) speaking in small groups (e.g., "Engaging in a group discussion with new people makes me tense and nervous"), 2) talking in meetings (e.g., "I am afraid to express myself in meetings"), 3) public speaking (e.g., "My thoughts become confused and jumbled when I'm giving a speech), and 4) talking in pairs (e.g., "I'm afraid to speak up in conversations"). The scales have strong internal consistency with Cronbach's Alphas ranging from .87 to .91. The scores on each of the scales may range from six to thirty. Higher scores indicate greater communication apprehension.

### *Video Recordings*

Students were video-recorded performing two separate ten-minute microteaching lessons in each of the programs. A breakdown of the participants in the video recordings is provided in Table 3. Participants' teacher behaviours were evaluated by two coders (under the guidance of the PI and an experienced research assistant), who reviewed the videos of the microteach using the abbreviated Teacher Behaviours Inventory (Murray, 1983). Coders received training on the instrument and coding scheme.

**Table 3: Breakdown of Participants in Video Recordings**

	<b>Time 1</b>	<b>Time 2</b>	<b>Total</b>
TATP International	75	75	150
TATP Canadian	61	61	122
TCC (All International)	53	53	106
Total	189	189	378

### *Focus Group Interviews*

Focus groups lasting from forty-five minutes to one hour were conducted approximately four to seven months after program completion with a sub-sample of thirteen participants from TATP and ten participants from TCC. In the TATP group, there were four Canadian students and nine international students. For the purposes of the quantitative analysis, international students who have resided in Canada for more than two years were not considered international. However, for the qualitative analysis, we broadened the definition of "international TAs" to include participants who had spent between three and five years in Canada, in order to accommodate three additional TAs who volunteered to participate in the focus group. Participants were invited to focus group interviews if, on the initial survey, they indicated their willingness to take part in a focus group. The demographic characteristics of focus group participants were similar to that of the overall study sample (see Table 4).

**Table 4: Demographic Characteristics of the Focus Group Participants in Percentage<sup>1</sup>**

		TATP International	TATP Canadian	TCC
		N=9	N=4	N=10
Age <sup>2</sup>		27(2.6726)	25.25(2.0616)	28.1(6.0268)
Gender	Female	44.4	25	60
	Male	44.4	75	40
	Question not answered	11.1		
Program year	Master's 1	22.2	25	40
	Master's 2	11.1	25	40
	Ph.D. 1	33.3	25	0
	Ph.D. 2	22.2	25	20
	Ph.D. 3	11.1	0	0
Time in Canada	Less than 1 month	0	0	0
	3 to 6 months	11.1	0	20
	6 to 12 months	44.4	0	20
	1 year	22.2	0	0
	2 years	11.1	0	30
	3 to 4 years	0	25	20
	5 to 9 years	0	0	10
	10+ years	11.1	50	0
	Whole life	0	25	0
Lived in other English-speaking country	Yes	33.3	50	30
	No	66.6	50	70
Terms as a TA	0	0	0	10
	1-2	77.7	25	30
	3-4	11.1	50	50
	5-6	11.1	0	10
	7	0	25	0

Note: <sup>1</sup> Overall number of participants n = 23; <sup>2</sup> indicates mean and standard deviation provided rather than percentages.

All participants received a ten-dollar gift certificate to Hospitality Services on campus. The interviews were conducted over a pizza lunch in a quiet classroom by the two researchers who work frequently with international graduate students. At the start of the session, participants completed a consent form and demographic questionnaire. This was followed by a group interview with participants.

Although the interviews were semi-structured, an interview guide was created to ensure consistency throughout the interview sessions (see Appendix C). The interview focused on students' perceptions of changes in their teacher behaviours, cognitive change, and reflective practice. A series of probes were used to encourage full discussion of the interview questions.

## Results

### Quantitative Findings

#### *Analysis Plan*

A series of 3 (Group) X 2 (Timing) Split Plot ANOVAs were performed on the three dependent variables (effective teacher behaviours, self-efficacy, and communication apprehension). The Group variable (the between-participants variable) reflected whether the participants were Canadian students who had completed the Teaching Assistant Training Program (TATP-Can), international students who had completed TATP (TATP-Int), or international students who had completed Teaching in the Canadian Classroom (TCC). The Timing variable (the within-participants variable) reflected the timing of the administration of the surveys and participation in the microteaching episodes. For the surveys, Time 1 and Time 2 reflect pre- and post-program administration, respectively. For the microteaching segments, Time 1 and Time 2 reflect a microteaching segment early in the program and one later in the program.

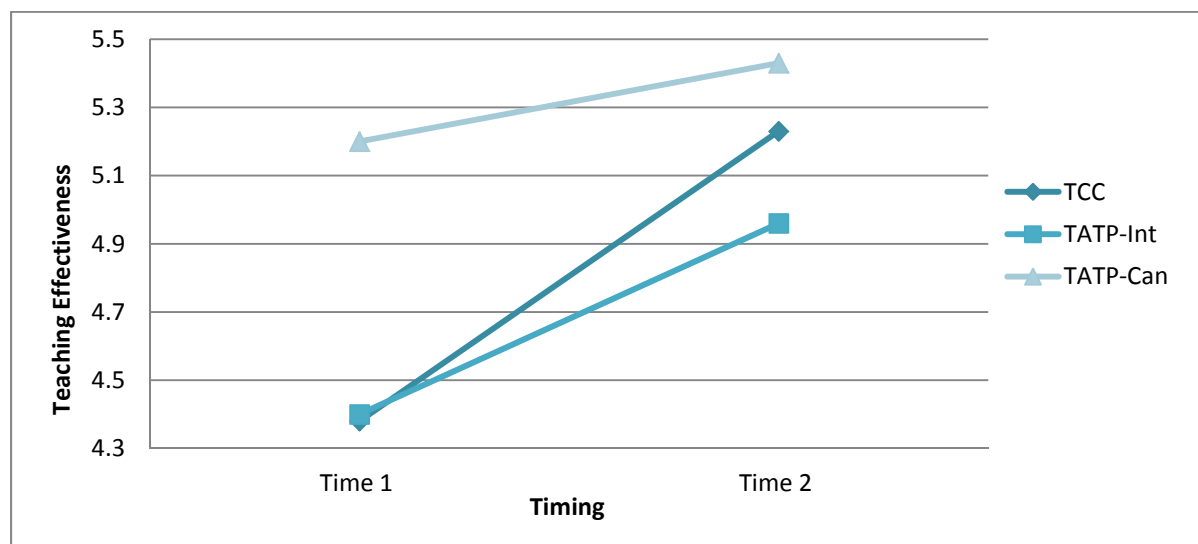
#### *Teaching Effectiveness*

The predicted interaction, that all three groups would evidence increased effective teacher behaviours in their microteaching from Time 1 to Time 2 but that the TCC group would show more of an increase in effective behaviours than the TATP-Int and TATP-Can groups, was partially supported for the one-item overall assessment of teaching effectiveness from the Teacher Behaviours Inventory [TBI;  $F(2,186) = 3.147, p = .045$ ]. The TCC and TATP-Int groups had significant increases in effective teacher behaviours from Time 1 and 2 [ $F(1,186) = 21.93, p < .001$  and  $F(1,186) = 13.50, p < .001$  for TCC and TATP-Int, respectively], with the increase being larger in absolute value for the TCC than TATP-Int group. The TATP-Can group did not demonstrate a significant increase in teaching effectiveness from Time 1 to Time 2 ( $F(1,186) = 1.84, ns.$ ; see Figure 1 and Table 5). Thus, for the one-item assessment, the programs seemed to increase actual teaching effectiveness for the international students, particularly for the students enrolled in TCC, but not for the Canadian students. For the Interaction and Organization subscales of the TBI, the interactions were not significant [ $F(2,184) = 2.095, ns.$  and  $F(2,153) = .820, ns.$ , respectively; see Table 5].

The Interaction and Organization subscales of the TBI demonstrated main effects for Timing (see Figure 2 and Table 6). All participants demonstrated a significant increase in Interaction and Organization teaching effectiveness from Time 1 to Time 2. Thus, the teaching assistant programs increased participants' effectiveness in interacting in and organizing their actual teaching.

The Organization subscale showed a main effect for Group but no such effect was found for the Interaction subscale. The TATP-Can group was significantly higher on Organization than the TATP-Int [ $t(153) = 2.58, p < .01$ ] and the TCC group [ $t(153) = 2.31, p < .05$ ; see Figure 3 and Table 7]. The TATP-Int and TCC participants did not differ significantly [ $t(153) = .162, ns.$ ]. Thus the Canadian students were more effective in terms of their teaching-related organization than their international colleagues.

**Figure 1: Mean Teaching Effectiveness for the TCC, TATP-Int, and TATP-Can Groups at Time 1 and Time 2**

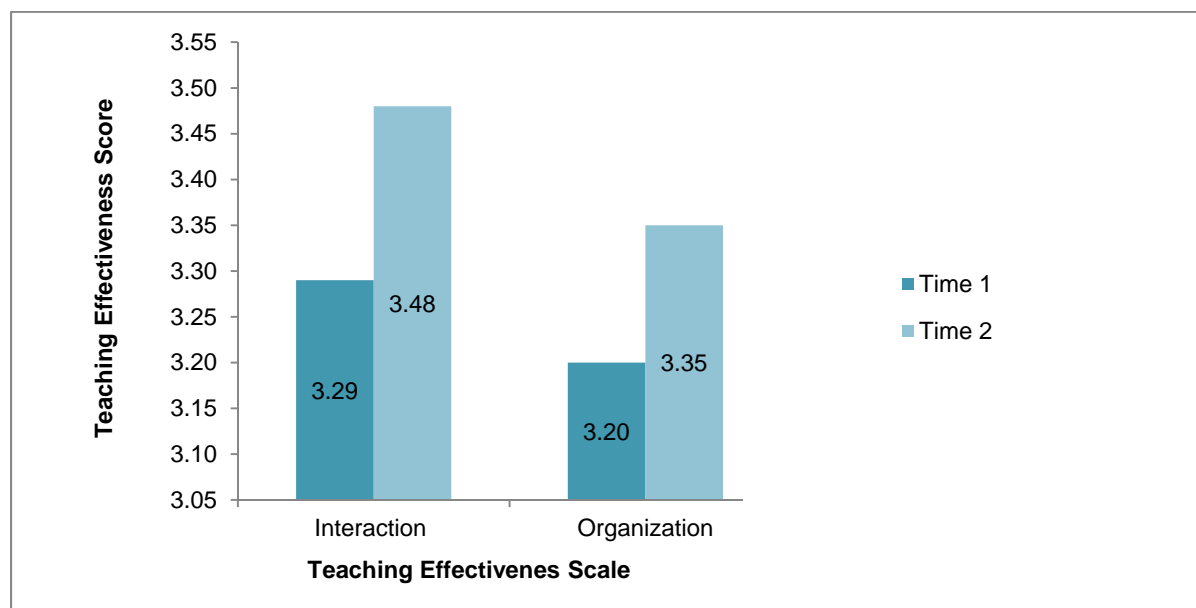


**Table 5: Means and Standard Deviations for the TCC, TATP-Int, and TATP-Can Groups at Time 1 and Time 2 for the Teacher Behaviors Inventory Subscales and Overall Effectiveness Item**

Teacher Behaviours Inventory Scales	Time 1		Time 2	
	Mean	SD	Mean	SD
TCC				
Interaction	3.24	.754	3.56	.692
Organization	3.08	.734	3.33	.574
Overall Effectiveness	4.38 <sup>a</sup>	1.390	5.23 <sup>b</sup>	1.103
TATP-Int				
Interaction	3.20	.706	3.38	.638
Organization	3.12	.676	3.25	.685
Overall Effectiveness	4.40 <sup>a</sup>	1.271	4.96 <sup>b</sup>	1.299
TATP-Can				
Interaction	3.45	.628	3.54	.622
Organization	3.45	.677	3.50	.532
Overall Effectiveness	5.20	1.195	5.43	1.056

Note: Means not sharing the same superscript <sup>a,b</sup> in a row are significantly different. All of the scales of the TBI are rated on a five-point scale except for the Overall Effectiveness item which is rated on a seven-point scale.

**Figure 2: Mean Teaching Effectiveness for the Interaction and Organization Subscale at Time 1 and Time 2.**



**Table 6: Means, Standard Deviations, and Significance Test for the Teacher Behaviors Inventory Subscales and Overall Effectiveness Item at Time 1 and Time 2**

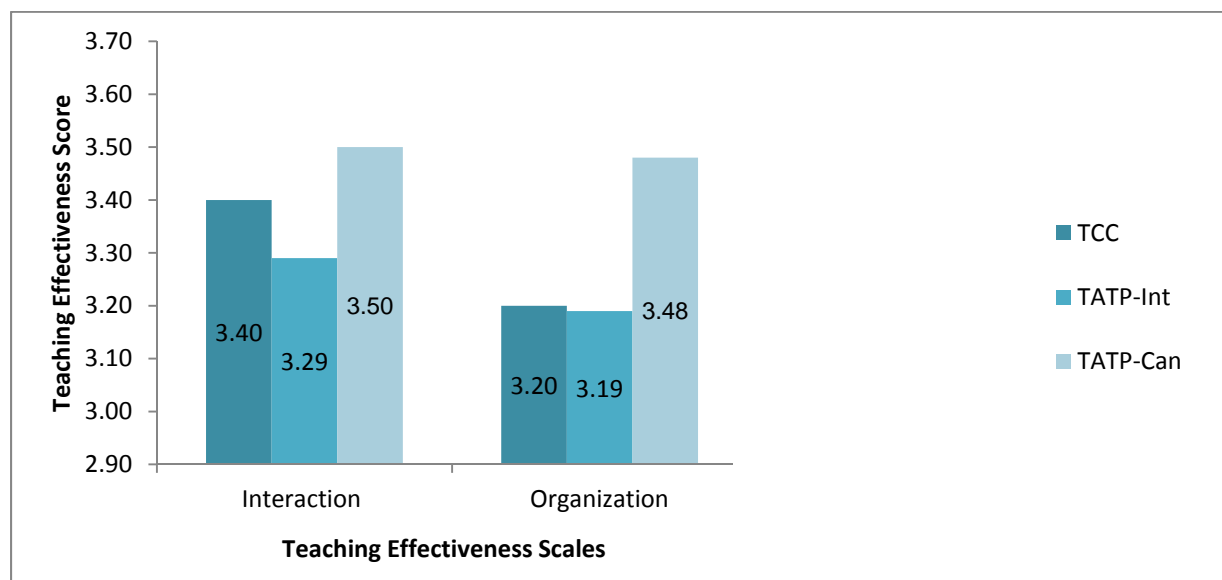
Teacher Behaviours Inventory Scales	Time 1		Time 2		Significance Test
	Mean	SD	Mean	SD	
Interaction	3.29	.700	3.48	.650	$F(1,184) = 19.387^{**}$
Organization	3.20	.706	3.35	.619	$F(1,153) = 6.149^*$
Overall Effectiveness	4.65	1.278	5.19	1.182	N/A <sup>1</sup>

Note: \*  $p = .014$ , \*\*  $p < .001$ .

<sup>1</sup> When an interaction is statistically significant, main effect differences are not meaningful (Gardner, 2001) and thus are not outlined here.



**Figure 3: Mean Teaching Effectiveness for the Interaction and Organization TBI Subscales for TCC, TATP-Int, and TATP-Can**



**Table 7: Means and Standard Deviations for Teacher behaviours Inventory Subscales and Overall Effectiveness Item for the TCC, TATP-Int, and TATP-Can Groups**

TBI Scales	TCC		TATP-Int		TATP-Can		Significance Test
	Mean	SD	Mean	SD	Mean	SD	
Interaction	3.40	.664	3.29	.577	3.49	.568	$F(2,184) = 1.934$
Organization	3.20 <sup>a</sup>	.555	3.18 <sup>a</sup>	.555	3.48 <sup>b</sup>	.494	$F(2,153) = 4.502^*$
Overall Effectiveness	4.80	1.085	4.68	.957	5.31	.980	N/A

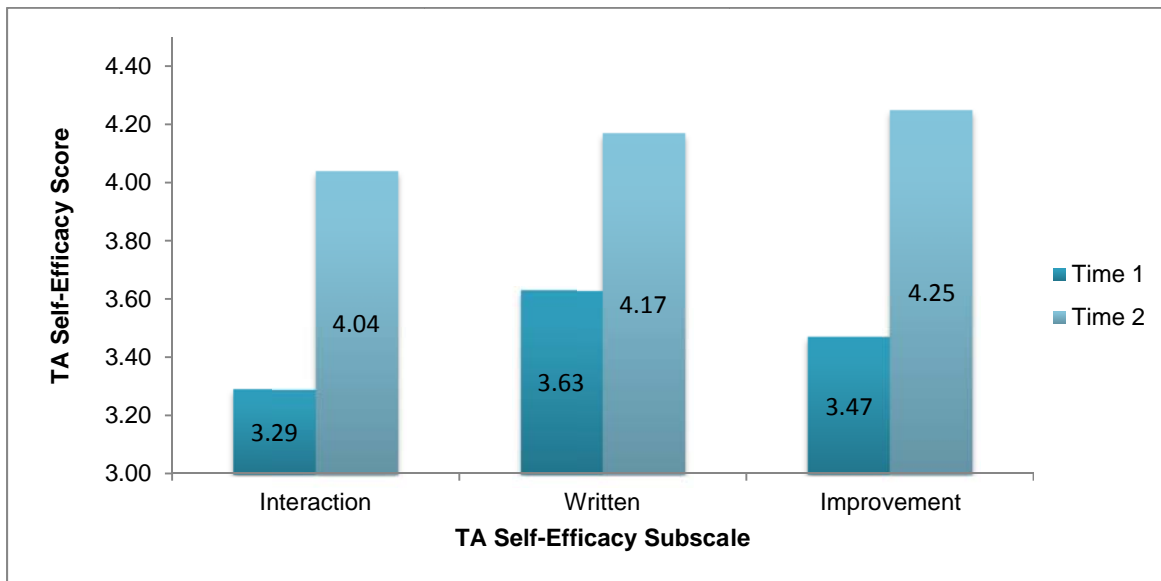
Note: \* indicates statistical significance at  $p=.013$ ; means not sharing the same superscript in a row are significantly different ( $p < .05$ ).

### Teaching Assistant Self-efficacy

All three of the Teaching Assistant Self-efficacy subscales evidenced significant main effects for Timing (see Figure 4 and Table 8). All of the program participants were significantly higher on Interaction, Written, and Improvement self-efficacy after their respective programs than before, suggesting that all of the teaching assistant training programs have a positive impact on participants' confidence in completing critical tasks for teaching assistants.

For the Interaction Self-efficacy subscale, there was also a significant main effect for Group. The Canadian TATP participants had significantly higher Interaction self-efficacy than their TCC [ $t(158) = 2.10, p < .05$ ], but not their international TATP [ $t(158) = 1.41, ns.$ ], counterparts. The TATP-Int and TCC participants did not differ significantly [ $t(158) = .983, ns.$ ]. There were no main effects for Group for the Written or Improvement Self-efficacy subscales (see Figure 5 and Table 9). The Canadian participants felt more confident in interacting with students than their international counterparts, but not in composing written aspects of the

**Figure 4: Mean TA Self-efficacy for the Interaction, Written, and Improvement Subscales at Time 1 and Time 2**

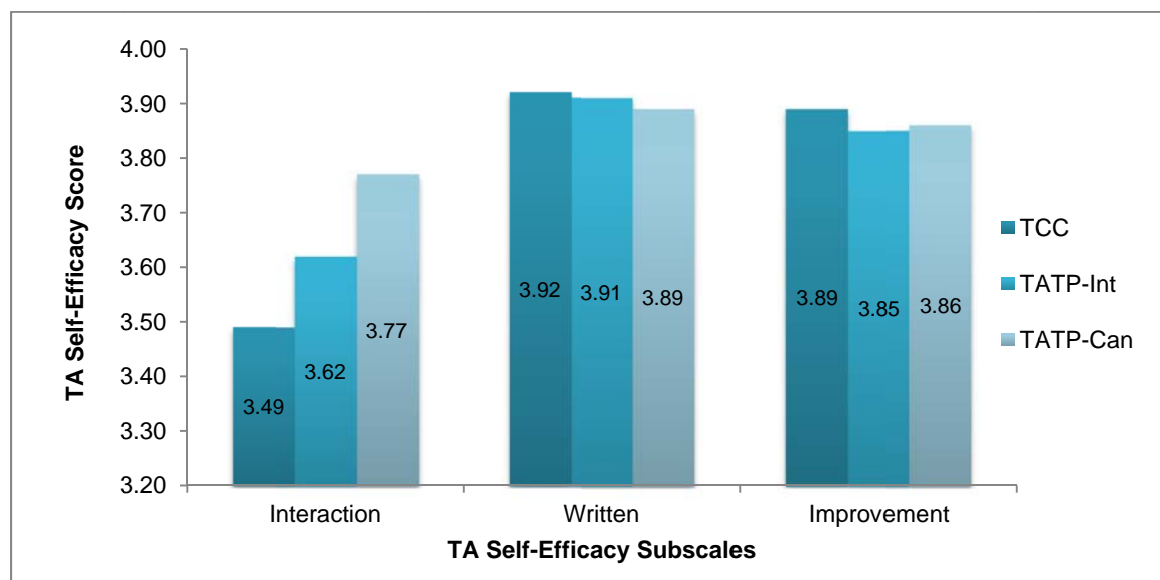


**Table 8: Means, Standard Deviations, and Significance Test for the Three Self-efficacy**

Self-efficacy Subscale	Time 1		Time 2		Significance Test
	Mean	SD	Mean	SD	
Interaction	3.29	.672	4.04	.512	$F(1, 158) = 271.32^*$
Written	3.63	.593	4.17	.451	$F(1, 170) = 183.13^*$
Improvement	3.47	.669	4.25	.526	$F(1, 159) = 198.13^*$

Note: \* denotes significance at  $p < .001$ .

**Figure 5: Mean TA Self-efficacy for the Interaction, Written, and Improvement Subscales for the TCC, TATP-Int, and TATP-Can groups**



**Table 9: Means and Standard Deviations for the Three Self-efficacy Subscales for the TCC, TATP-Int, and TATP-Can Groups**

Self-efficacy	TCC		TATP-Int		TATP-Can		Significance Test
	Mean	SD	Mean	SD	Mean	SD	
Interaction	3.49 <sup>a</sup>	.537	3.62 <sup>ab</sup>	.534	3.77 <sup>b</sup>	.514	$F(2, 158) = 3.41^*$
Written	3.92	.458	3.91	.486	3.89	.460	$F(2, 170) = .065$
Improvement	3.89	.567	3.85	.415	3.86	.537	$F(2, 159) = .062$

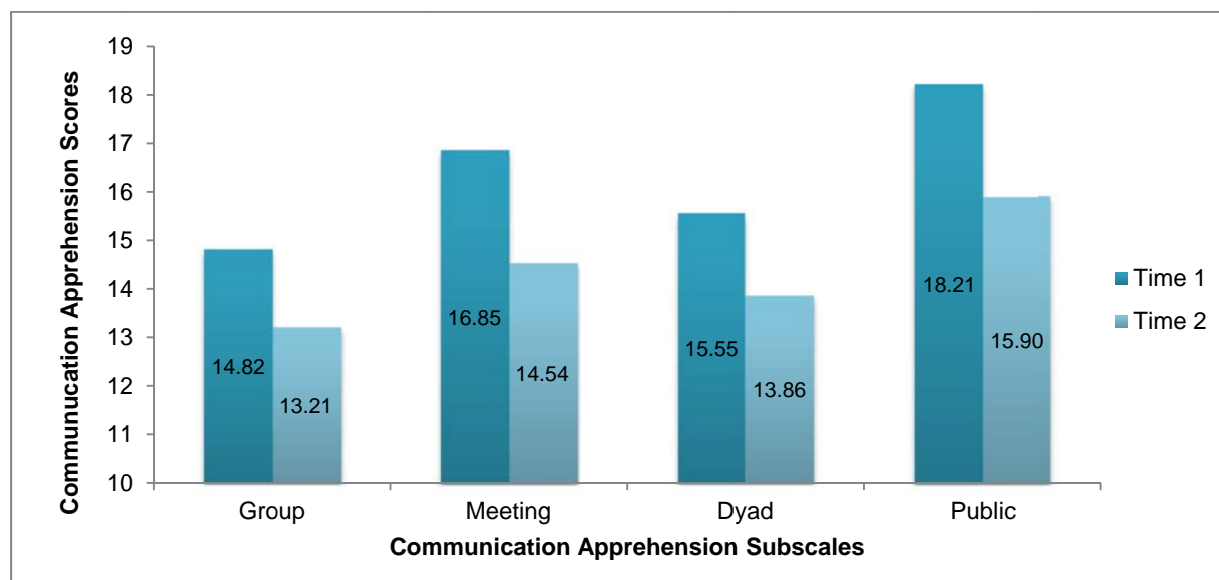
Note: \*  $p = .036$ ; means not sharing the same superscript in a row are significantly different ( $p < .05$ ).

The predicted statistical interactions were not supported [ $F(2, 158) = .240$ , *ns.* for Interaction;  $F(2, 170) = 2.020$ , *ns.* for Written; and  $F(2, 159) = .977$ , *ns.* for Improvement (see Table D1, Appendix D)]. Although, as outlined above, all of the participants increased in their confidence in interacting with their students, creating written components of the program, and making improvements in their teaching over the course of their programs, the TCC participants did not show more progress in these areas than their international or Canadian counterparts in TATP, as had been predicted.

### Communication Apprehension

There were significant main effects for Timing for all of the Communication Apprehension subscales as well as the overall score. All of the program participants, regardless of the group, were significantly lower on all forms of communication apprehension after their respective programs than before, suggesting that both teaching assistant training programs helped assuage participants' concerns about speaking with others in a variety of contexts and configurations (see Figure 6 and Table 10).

**Figure 6: Mean Comprehension Apprehension for the Group, Meeting, Dyad, and Public Subscales at Time 1 and Time 2**



**Table 10: Means, Standard Deviations, and Significance Test for the Communication Apprehension Subscales and Full Scale at Time 1 and Time 2**

Communication Apprehension Scales	Time 1		Time 2		Significance Test
	Mean	SD	Mean	SD	
Group	14.82	5.233	13.21	5.127	$F(1, 180) = 16.98^*$
Meeting	16.85	5.319	14.54	5.304	$F(1, 180) = 43.18^*$
Dyad	15.55	4.929	13.86	4.861	$F(1, 179) = 27.76^*$
Public	18.21	5.125	15.90	4.914	$F(1, 178) = 59.15^*$
Overall	65.18	17.524	57.47	17.667	$F(1, 169) = 47.86^*$

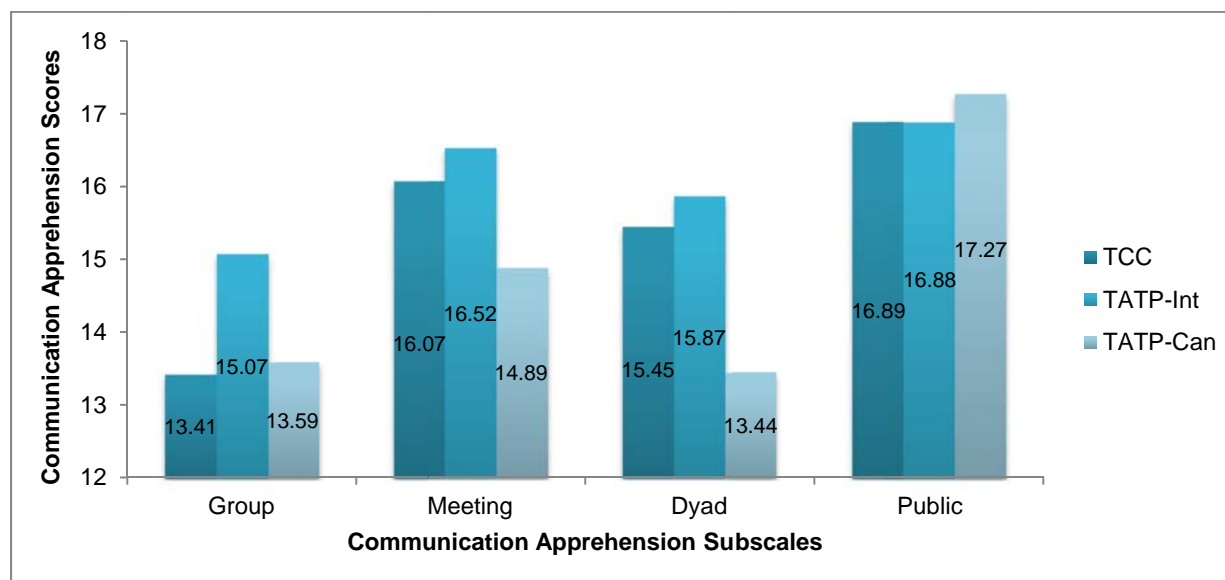
Note: \* denotes significance at  $p < .001$ .

There was also a significant main effect for Group on the Dyad subscale of Communication Apprehension but not for any of the other subscales or the overall score (see Figure 7 and Table 11). Canadian participants were less concerned about having a conversation with another person than their international counterparts [ $t(179) = -2.64, p < .01$  and  $t(179) = -2.55, p < .05$  for their TATP International and TCC counterparts, respectively]<sup>2</sup>, but were equally concerned about speaking in groups, meetings, public, and overall.

The predicted significant interactions were not found [ $F(2,180) = 1.34, ns.$ ;  $F(2,180) = .498, ns.$ ;  $F(2,179) = .555, ns.$ ;  $F(2,178) = .638, ns.$ ; and  $F(2,169) = .383, ns.$  for Group, Meeting, Dyad, Public, and Overall communication apprehension, respectively (see Table D2, Appendix D)]. Although, as outlined above, all of the participants decreased in their concern about speaking in the different contexts, the TCC participants did not show a larger decrease in their concern than the international or Canadian students in TATP, as had been predicted.

<sup>2</sup> The TATP-Int and TCC participants did not differ significantly [ $t(179) = .453, ns.$ ]

**Figure 7: Mean Comprehension Apprehension for the Group, Meeting, Dyad, and Public Subscales for TCC, TATP-Int, and TATP-Can Groups**



**Table 11: Means and Standard Deviations for the Communication Apprehension Subscales and Full Scale for the TCC, TATP-Int, and TATP-Can Groups**

Communication Apprehension Scales	TCC		TATP-Int		TATP-Can		Significance Test
	Mean	SD	Mean	SD	Mean	SD	
Group	13.41	3.710	15.07	4.671	13.59	4.870	$F(2, 180) = 2.31$
Meeting	16.07	4.107	16.52	4.984	14.89	4.988	$F(2, 180) = 2.14$
Dyad	15.45 <sup>a</sup>	3.612	15.87 <sup>a</sup>	4.881	13.44 <sup>b</sup>	4.159	$F(2, 179) = 6.33^*$
Public	16.89	4.046	16.88	4.282	17.27	5.132	$F(2, 178) = .157$
Overall	61.98	14.079	63.73	16.348	59.33	17.097	$F(1, 169) = 1.22$

Note: \* indicates statistical significance at  $p = .002$ . Means not sharing the same superscript in a row are significantly different ( $p < .05$ ).

## Qualitative Findings

The goal of focus group interviews was to examine the long-term impact of program participation and to complement the quantitative data with examples and rich descriptions of the changes in teaching effectiveness, self-efficacy, and communication apprehension. Focus group questions explored two key areas of program impact. First, the focus group participants were asked what components of TATP and TCC were most beneficial (i.e., which program components contributed to increasing the teaching self-efficacy of TAs and which components helped reduce their communication apprehension). Second, the interviews explored how the programs impacted participants' actual teaching practice and asked TAs to describe how they applied the concepts and teaching strategies they learned in TCC and TATP in their own teaching.

Content analysis of the focus group interviews was conducted using the approach proposed by Miles and Huberman (1994) to examine students' perception of change in their teacher behaviours and provide examples of cognitive change and reflective practice in participants. Interviews were partially transcribed. A research assistant took notes during the interview, identifying key themes related to the research questions, such as examples of change in TA self-efficacy and examples of how participants applied what they learned

in the program in their own teaching (Rubin & Rubin, 1995). After the interviews, members of the research team listened to the audio recordings and extended or clarified the themes identified in the first round of coding where needed.

Key themes were sorted by demographic group (TATP-Int, TATP-Can, and TCC) and were grouped into larger categories (e.g., student-centered approach – including using inquiry based approaches in the lab or active learning strategies, and engaging students in class using discussion; Strauss & Corbin, 1990). The most frequently occurring themes are included in the overview below. In analyzing the focus group data, we focused on participants' perception of change in their own teacher behaviours and explored the application of knowledge beyond the program.

Similarities were found between the long-term impacts of the two programs, predominantly for the ITAs, in four areas:

- *Theme 1:* Greater teaching effectiveness, demonstrated by a description of teaching strategies that map onto the "Interaction" factor on the TBI, such as a shift to student-centered learning or promoting inquiry by asking more questions from students.
- *Theme 2:* Increased self-efficacy, demonstrated by greater confidence in their ability to facilitate classroom learning activities and respond to difficult classroom situations.
- *Theme 3:* Lower communication apprehension in both large group settings, such as giving a lecture in class, and in interpersonal settings, such as responding to student concerns in office hours.
- *Theme 4:* A greater clarity of the TA role, which was also closely related to increased self-efficacy.

Differences emerged between ITAs who completed TATP and TCC in two areas:

- *Theme 5:* There was a difference in the ITAs' description of interpersonal communication strategies with students. The TCC group relied frequently on culturally appropriate interpersonal communication strategies and demonstrated an ability to reflect on the process of making decisions about communication strategies based on cultural considerations using tools learned in TCC.
- *Theme 6:* The TCC group emphasized the value of diversity and interdisciplinarity during the program and demonstrated an ability to communicate effectively across disciplinary boundaries.

### *Teaching Effectiveness (Theme 1)*

All focus group participants described a shift towards more student-centered teaching approaches – both after the TATP and after the TCC. The changes that participants described illustrate both the increase in teaching effectiveness scores that we see on the Interaction factor on the TBI, as well as the increase in self-efficacy on the TASE survey from Time 1 to Time 2. Both the TATP and the TCC group identified video-recorded microteaching and the feedback they received after microteaching as the components of the programs that contributed most to their teaching effectiveness.

Participants described the way they learned to use active learning activities in their tutorials and learned to promote inquiry in science labs. For example, TAs talked about not answering student questions directly but finding ways to encourage undergraduates to problem solve and find answers on their own. Both STEM and Social Sciences and Humanities TAs described ways in which they encourage student participation, foster critical thinking, and adapt their teaching style so that it responds to the learning needs of students with different levels of knowledge, or different disciplinary backgrounds. An ITA from the Modern Languages department described the way he introduced stories and role-plays in his introductory language course,

involving students in real-world conversations from the very first class. A Health Sciences ITA described the way he challenged undergraduates to think of the impact of war on health and sport through an experiential activity that simulated the presence of landmines in the classroom. A science TA reflected on the way she tries to promote transferable problem solving skills in an advanced math class.

*I really like using the indirect approach that I learned in TATP, where you are leading them to where you want to go, but you are not telling them to, you are moving them in a direction that would be beneficial to them, without giving them the right answer.*

Canadian TA, Social Sciences, TATP

*I have been TAing before coming to Canada, and I always had this background idea that the TA should be a second professor in the class, and you should have a lot of knowledge before you come to the class and then teach the students what they didn't know. But when I attended TATP I learned that sometimes you should engage them in conversations and ask them questions, so that in the process of asking them some questions they can answer their own questions... so you should guide them. Before what I used to do before was to be a lecturer, and be like an avatar to the professor... Students liked it, it's like giving a prize to them, show them that they know something.*

ITA, Engineering, TATP

*I taught a second course and I found a big difference in my teaching style, and I noticed that students were participating more after I took TCC.*

ITA, Engineering, TCC

*I used what I learned here and in the very first class, and we wrote down basic English and French sentences, like "Comment tu t'appelle" and I put them in pairs and asked them to practice. So it helped, they left with smiles at the end of the first class, they said "We can speak French!" They were motivated, once they saw that they could speak, and within a few weeks they were so interested.*

ITA, Arts and Humanities, TCC

The shift to student-centered learning could also be observed in the way TAs talked about checking for understanding among their students, asking for feedback on how the course was going, listening to student needs and being mindful of the diversity of cultural and disciplinary backgrounds among their undergraduate students. All of these changes likely contribute to increased teaching self-efficacy, as well as the increases on both the Interaction and the Organization subscales of the TBI. Participants also became more reflective practitioners, allowing them to continuously improve their teaching practice.

*After I have taught, I reflect on my teaching – this stayed with me from the program, it has helped me. So after I teach, I sit back and think – this student asked me that question – was it because I didn't involve them in the course, what could I have done to make her understand this question?*

ITA, Arts and Humanities, TCC

*When I was a student, I was the kind of student who would sit in the back of the class and make trouble for professors. So now I can exactly see those guys, and I can understand them. I know that they are not listening, they are making trouble in class, but actually I give them a chance to do the assignments and do what they are expected to do ... I say "OK you are free to do anything, you are free to go out any time, but if you want a mark, you have to finish it."*

ITA, Engineering, TCC

The shift to student-centered learning and teaching approaches also made TAs more reflective and informed participants in their own graduate education. Several TAs mentioned that they noticed both effective and ineffective teaching techniques by their professors more keenly, because in the program they had a chance to critique the teaching of other TAs several times.

*TATP helped me with how to lead a discussion. It's a skill that looks easy but it is not – how to make sure that the ideas flow without you having to impose yourself, or let it stagnate – and some people make it look flawless or easy, but it's not, and it is one of the skills that I have used even in my grad courses. That was the biggest takeaway that I had.*

Canadian TA, Social Sciences, TATP

## **Increased Teaching Self-efficacy (Theme 2)**

Almost all focus group participants reported a greater confidence in their ability to facilitate learning in tutorials and labs and speak in front of a class, and talked about a newly gained confidence to experiment with new teaching techniques even if they may fail the first time. One of the intended outcomes of TATP and TCC is to simulate the classroom setting through microteaching in a ten-minute, video-recorded teaching simulation, and to create a safe teaching space in which new instructors can experiment with various teaching approaches. Almost all participants identified microteaching as the most beneficial part of the program and talked about the confidence they gained from the positive feedback and suggestions for improvement they received during the session. TATP participants (both Canadian and international) emphasized the way in which “*microteaching helped make the first teaching experience less intimidating,*” illustrating the way the program both increased their teaching self-efficacy and lowered their communication apprehension. Several participants in TCC talked about receiving higher student evaluations of teaching or positive feedback from students and professors after participating in the program.

*Before coming to Canada I was teaching French to English speakers. So I thought, I know how to teach French to English speakers. And I was given to teach this class with a colleague, and we were teaching, but things didn't work out. And when the evaluations came at the end of the term, someone wrote 'poor teacher.' And I had been teaching for ten years previously. And I knew that I needed help. And in December when I got my evaluations, they said 'this teacher rocks, give him a raise.'*

ITA, Humanities, TCC

*I learned not to be passive, to be active and participating, to get involved with students whatever the students are doing and to give them positive energy. To tell them “OK, that's great, you are doing great.” And students really loved it. And at the end of the semester lots of them came to me and said 'we want you to be our TA for the next semester.'*

ITA, Sciences, TATP

*[The program] made me more self-confident. I was more relaxed after the class. I can teach. It's not such a big deal. I can practice and get better – the microteaching helped with that.*

ITA, Sciences, TCC

TAs also talked about an increased willingness to try new teaching activities, and being less afraid of these activities failing. They felt more comfortable with the fact that sometimes learning activities may not work out as planned but can still promote student learning.

*One of the approaches I used is a group discussion. In my first term as a TA I had to lead a tutorial, it was a small class of fifteen of them, and the first couple of weeks it was really quiet. So I broke them into groups and they started to talk more and feel comfortable, and then later I split them into two big groups and try and let them debate, and then it was even better and they debated well.*

ITA, Social Sciences, TCC

*I am trying to think about different ways to get students' attention and different, interesting ways to teach something... For example, the class was about sport as a development tool and we discussed people with disabilities especially in countries that suffered by war, and one of the problems is people with no legs or other types of physical disabilities. And when they [the students] would get in the class there were pieces of paper spread out on the floor, and most of them were stepping on the papers.*



*And I was just counting and then asked the class "How many of you remember stepping one of those papers? Because if you did, then you would have just stepped on a landmine. This is the reality of many people around the world." Just thinking about different ways of bringing the knowledge to the students.*

*ITA, Health Sciences, TCC*

*I tried to have more activities in class – I got some people to go to the board and solve problems. It didn't work. First I underestimated the time that it would take to do the activity. And I went around the class and saw that more than half of the students were doing something else... And I looked at the situation and saw that sometimes when you have an activity it doesn't work out quite the way you want, and that's OK.*

*ITA, Health Sciences, TATP*

### **Lower Communication Apprehension (Theme 3)**

All focus group participants felt that their communication skills significantly improved as a result of participating in TA training. Their communication apprehension was lowered and their confidence and skills increased in two areas of communication: they felt that their presentation and public speaking skills improved, and they felt more prepared for challenging interpersonal interactions with undergraduate students, both in class and during their office hours. ITAs applied strategies from TATP and TCC to respond to grade complaints from undergraduate students, to support students in crisis, and to engage students in challenging learning situations in class. They reported having less apprehension when students approached them with questions or when students asked them to review an assignment that they marked. International participants also talked about feeling less worried about their accent after TATP and TCC than before the program.

*That reassurance given by the instructors played a very important role – at one point all of us had these fears in our mind, in our heart, that maybe we are not speaking correctly, our accent is not very much Canadian and people will make fun of us and they will not look at the knowledge we had and they will care more about our accent. I think that [the instructor] cleared that concept in our mind.*

*ITA, Medical Sciences, TCC*

*[The main thing I gained in the program was] confidence – and never to be afraid about my accent, because [the instructor] said "accent is sexy." And I tried a lot to change my accent. And now I think accent doesn't matter as long as I pronounce it right... At the beginning I just focused on my accent, and now I focus on the knowledge that I am conveying.*

*ITA, Sciences, TCC*

*In microteaching we see so many different accents, and we can understand them all, so of course our students will understand us, too.*

*ITA, Sciences, TCC*

When describing the change in their presentation skills, participants talked about learning to slow down and structuring their presentations in easily accessible segments, defining terms, using repetition and linguistics signposts to mark transitions, and identifying clear objectives at the beginning of presentations. They talked about feeling less nervous when speaking, and became more mindful of their body language while presenting.

*In my home country I never had any problem with any presentations, I was very good at presenting whatever I was going to say. But here when I first saw my microteaching video, it was awful – I couldn't say anything. I mean, I can never forget that day. I felt so bad. Especially because I used to be very good at this. So I came here and I was supposed to do it in a different language, in a different way. And I screwed up. So I learned that "OK, this is not your country, it is not your language, you will not be able to do what you did in your country unless you practice." So the next day when I presented*

*my slides I had to repeat that and present to myself and rehearse five or six times so I could get to the level I was in my country. This is something I learned here and it has helped me, because I know my weaknesses now, and I can get stronger.*

*ITA, Sciences, TATP*

#### **Greater Clarity of the TA Role (Theme 4)**

One of the most common reasons among participants for taking the TATP and TCC was to gain an understanding of the TA role and become familiar with the responsibilities of TAs at the university level. Canadian TAs emphasized the desire to learn about the policies that guide TA work at Western, while ITAs (both in TATP and TCC) wanted to find out what Canadian undergraduates would expect of them and what they could expect from their undergraduates. Role clarity contributes to increased self-efficacy as well as to effective teaching because TAs who understand their role as facilitators of student learning are more likely to use student-centered learning activities that increase student engagement.

Both programs provided ITAs with a greater clarity about the role they would play in the classroom. Key areas of learning that stayed with them a few months after the training included strategies for proctoring exams, marking papers, and ethical considerations when creating boundaries with students (e.g., not communicating with students on social media, treating all students fairly, not socializing with students outside of class, etc.). In addition, participants talked about expectations for student engagement and expectations for relatively low power distance between students and TAs.

*The responsibility I had in my home country as a TA was completely different than the responsibilities in Canada. I didn't know how to behave with the students in the class. In my home culture we had more authority to deal with students. Students are more powerful [in Canada].*

*ITA, Engineering, TATP*

#### **Culturally Appropriate Interpersonal Communication Strategies (Theme 5)**

TAs in the TCC group differed from those in the TATP group in their ability to reflect on interpersonal communication and teaching situations, apply intercultural communication concepts learned in TCC to these situations, and choose culturally appropriate communication strategies in order to communicate more effectively. For example, participants described the way in which they reflected on making eye contact, being mindful of saving face, and how they chose to rely on high or low context strategies with undergraduates and with faculty.

*Before there was a little misunderstanding between me and my students. Because in my culture, some behaviour of them, like laugh or speak to each other while I'm talking, I think it's because they don't respect me. But after the class I understand that it is just their nature. It's much better, so I will just repeat again "Please pay attention," and it will be better.*

*ITA, Sciences, TCC*

*At some point in our teaching we all realized that the people in front of us were not getting what we were teaching, but we don't know what went wrong where, and [the difference between high and low context cultures] was a really great suggestion to try to move on from there...that you can't use high context information in every setup, that was a new thing for me. As [the instructor] told us, if you are at a conference, as long as you are on the same page, all of you are on the same level, in fact low context would be an inappropriate way of speaking, but if you are in a classroom, and that classroom is new for you and you are new for the audience, then go low context until you get the feel of the class.*

*ITA, Medical Sciences, TCC*

*I have a lab TA partner who is a native speaker. And I wonder why it is easier for students to understand what he is talking about and it is harder for me. Now I know that during the speech they [native speakers] use more connection words to remind the students 'now this is a new thing, and this is used for this, and this is used for that, and how to combine them.' And they repeat these kinds of connection words to make sure that the students are following. [Understanding this] really helped me a lot... For me, I just wanted to finish it [the pre-lab talk] quickly and without mistakes, I just think, the more I talk, the more mistakes I will make, so I do it quickly, and [the students] look confused. So now I slowed down my speech and I speak louder, and I remind them "Now this is what is used for this part, and now is the second part, and the connection of the two parts, now we are going to the third part." Now when I ask them questions, they are all nodding, no confusion.*

ITA, Sciences, TCC

Graduates of TCC were very mindful of using gender sensitive language, collaborative language, and lower power distance language when dealing with upset students. They applied the active listening skills that they had learned in the program, and felt more prepared to respond to student questions both in the classroom and in office hours.

*I feel more comfortable to say "I don't know." In my culture it wasn't like that. You just answer with something, the student understands that you are wrong but it is not ok to say "I don't know." So now, while I'm talking in front of the whole class and the students throw me a question that I can't answer, I will say "I will get back to you later." This is my backup, I won't feel nervous. And while in the lab, if they have questions and if one student has a questions and I don't understand, I will ask his or her lab partner to explain it to me – can you help me understand his or her question? It is very useful, it has really helped me. This is better for me to build my confidence.*

ITA, Sciences, TCC

*A lot of students came to my office hours after I returned the sketch assignments... there was a lot of argument going on. So what I did was I told them that I will give them my office hours, so that their anxiety level goes down. The next day when the students started coming, they were in a better mood and they were more willing to discuss things rather than just fighting for the mark. So I just sat together and I asked the student "why are you not happy with your mark?" And I went through the assignment page by page and gave the students the opportunity to explain what they were thinking when they were drawing this. And after I listened to them, I explained to them why I deducted their mark and wherever negotiation was possible... So one thing that helped was asking them to come the next day and then the listening part, showing them that you understand the needs of the student and their perspective. And when I was explaining my perspective, I was trying to make sure that my tone is very soft.*

ITA, Engineering, TCC

### **Value of Diversity and Interdisciplinarity (Theme 6)**

Participants in TCC emphasized the value of working with an interdisciplinary and culturally diverse group in the workshop. Having to present in front of a group of peers from a variety of disciplines gave ITAs an opportunity to increase the clarity of their presentations and make their work accessible to a variety of audiences. They taught both experts and novices at the same time, and being able to engage both audiences increased their confidence and allowed them to develop strategies for explaining complex concepts to undergraduates in accessible terms.

In addition, working with a culturally diverse group of students allowed TCC participants to experience a range of cultural differences, practice perspective taking, and prepare for working in diverse research groups and lab settings. Several participants reported becoming more sensitive to diversity among their own undergraduate students. Communicating across multiple linguistic boundaries and cultural differences also helped decrease participants communication apprehension because ITAs felt that if graduate students from

ten other countries were able to understand their presentations, then they will also be successful in connecting with their undergraduates in class.

*For the presentations in TCC – I had to pick a topic that was considered difficult in Engineering and I had to teach it to non-Engineers, who were in Education or Computer Science. So that was very interesting because in that case you have to make sure that you teach the concept but you teach it in a way that they get it, even though they don't have the background. So this actually helped me to present more complex things in a simple way, and that was very helpful for my Engineering students too.*

*ITA, Engineering, TCC*

## Discussion

### Summary of Findings

The goal of this study was to examine whether a TA training program with explicit intercultural communication components, the Teaching in the Canadian Classroom program (TCC), results in greater improvements in international teaching assistants' teaching effectiveness, self-efficacy, and communication apprehension than a traditional/general TA program with limited intercultural content, the TA Training Program (TATP). Based on previous research on TA development, it was hypothesized that ITAs would make greater gains in teaching effectiveness in the program that is enhanced with intercultural components than in the general TA training program. The hypotheses were partially supported. As predicted, the group of ITAs who participated in a program enhanced with intercultural components (TCC) made greater gains in the one-item overall rating score of teaching effectiveness on the Teacher Behaviours Inventory than the Canadian and international participants in TATP. At the same time, we did not find the same interaction on the two Teaching Effectiveness sub-scales of the TBI, the Teaching Self-efficacy scale, or the Communication Apprehension scale. We did find that all three groups showed improvement over the course of the programs for those variables (i.e., increases on interactional and observational teaching effectiveness and teaching self-efficacy and decreases in communication apprehension), which highlights the effectiveness of both TATP and TCC on the participants' development as teachers.

We also observed differences between the experiences of ITAs in TATP and in TCC in the focus group interviews. Participants in TCC demonstrated a greater ability to reflect on their teaching, choose culturally appropriate student engagement and interpersonal communication strategies with undergraduate students, and were able to articulate the rationale for their choice. They saw themselves as facilitators of learning rather than transmitters of information. TCC participants were able to provide a more nuanced description of both teaching situations and interpersonal communication situations with undergraduate students, and demonstrated a more complex understanding of these interactions. TATP participants were able to describe a few cultural differences in classroom communication, but they had less insight into the causes of their students' behaviour than TCC participants did. The focus group findings also suggest that ITAs in TATP mainly applied their new knowledge in the context of their TA role, whereas ITAs in TCC were able to transfer the knowledge they gained in the program to a variety of contexts beyond their TA assignment.

In the focus groups, TCC participants frequently applied intercultural communication concepts they learned in the program to their analysis of teaching situations. For example, they reflected on cultural differences in directness and indirectness that impact teaching, and described the way in which differences in high and low context communication influenced their choice of presentation strategies. They also demonstrated mindfulness about saving face, were aware of the face needs of students from a variety of cultures, and reflected on the way they took into account cultural differences in power distance when they used titles with professors or decided on their level of formality and informality with students. By reflecting on the impact of cultural patterns in classroom communication, they demonstrated an increased level of intercultural competence (Deardorff, 2006), as well as an increased level of instructional intercultural competence (Dimitrov, 2012). Both of these skills allow ITAs to choose culturally appropriate communication strategies in order to facilitate student learning effectively and to avoid misunderstandings with students or supervisors that may result from cultural differences (Hoekje & Williams, 1994).

The increased reflectiveness observed in the focus group discussions with TCC participants is also consistent with the conceptualization of TA development through a "stages of concern" model (Ferzli, Maorant, Honeycutt, Warren, Fee, & Burns, 2012). In the framework of this model, TAs develop through six stages, moving from a focus on self and survival skills to a focus on managing concrete teaching tasks, and then on to concern about the impact of teaching practices and innovation on learners. Participants in TATP appeared to be more task-focused, concerned with the organization of their class, with time constraints, as well as with making new teaching activities work. TCC participants, on the other hand, demonstrated the type of reflection

characteristic of a higher stage of concern when they reflected on the consequences of new learning activities on the learners' experience and sought feedback to find out whether students learned what TAs intended to teach. Exploring this model more fully in future studies would give us the ability to more definitively state that the TCC creates more substantive changes in their stages of concern than does TATP program. We would need to more explicitly analyze where participants were at the start of the program in terms of their stage of concern and then measure the impact of the program on level change.

The focus group findings also mirror the results of a number of studies in the faculty development literature. Two robust, mixed methods studies on the long-term impact of training on university teachers found an increase in student-centered approaches and a reduction in teacher-centered approaches as a result of those programs. They also found improvement in students' perception of teacher effectiveness among those who participated in training (Gibbs & Coffey, 2004; Postareff et al., 2007). In a recent study titled, "It's made me braver," Butcher and Stoncel (2012) also documented increased reflectiveness, greater confidence, and increased self-efficacy among university lecturers appointed for their professional expertise.

Several factors may help explain why the difference between the two ITA groups was not as great at the post-test as expected. First, the instruments used in the study may not be sensitive enough to detect changes occurring within a short amount of time (within two days in the TATP program and within two to three weeks in the TCC program). Differences between the two groups were more evident in the focus group discussions, which took place four to seven months after the program. This suggests that the impact of the program on effective teacher behaviours is long-term and may emerge several months after ITAs complete the workshops. In addition to time enhancing the benefits of training, the qualitative data collection method allowed us to more deeply explore the impact of the training on the ITAs lives both inside and outside the classroom. The fact that ITAs were able to articulate how they applied what they learned in the program and provide many concrete examples roughly four months after participating suggests that the impact of the program is enduring, and is likely to lead to a lasting shift towards student-centered learning approaches among these ITAs (Postareff et al., 2007). The second reason why the difference between the two groups was not found to be as great as predicted may be that the TATP and TCC groups were not completely equivalent. The TCC group was, on average, somewhat older and had more prior teaching experience at the beginning of the program, making it difficult to make greater gains than the TATP group, which consisted mostly of novice teachers.

## Implications

Given these findings, the question arises: should universities invest in intercultural communication enhanced training for their ITAs? Based on what we heard from TCC participants in the focus groups and the overall teaching effectiveness rating, the answer is yes! TCC has a broad, positive impact on the development of ITAs not only as teachers, but also as graduate students. The intercultural competence that participants gained in the program contributes to their success in many other areas of academic life, such as in giving presentations, conducting research, interacting with faculty and peers, and working as part of an international research or teaching team. Through the discussions with other ITAs from around the world in the program, participants gain a deeper understanding of their own culture and reflect on how culture influences their own beliefs, values and behaviours.

It is important to note that ITAs develop intercultural competence in the TCC program because the curriculum of the program addresses cross-cultural communication patterns and their application in classroom settings explicitly. ITAs have the opportunity to analyze their own teaching communication behaviour from a cross-cultural perspective, compare their assumptions with those of ITAs from other cultures, and develop specific strategies for negotiating cultural differences and building rapport with students across cultures. Asking Canadian and international TAs to work together in a generic TA training program will not accomplish the same goal, because generic programs usually do not provide ITAs with sufficient time and opportunity for reflection on these issues, and ITAs in generic programs do not have a conceptual framework for discussing cultural differences in classroom communication.

The competencies that ITAs develop in the program are skills that are necessary in a global society – competencies that would also be a valuable skill for Canadian graduate students. If resources allow, universities may consider developing a graduate student development program enhanced with intercultural communication components for all of their teaching assistants. By participating in an intercultural communication training program, all TAs may become better facilitators of learning in diverse classrooms, develop a repertoire of strategies to support international undergraduates, and enhance their ability to function in diverse research teams.

ITA training programs enhanced with intercultural components would also contribute to the teaching effectiveness of future faculty in Canada. Many of the ITAs who participate in TCC continue to pursue faculty careers. ITA training programs are, therefore, the first step in socializing new faculty to a teaching culture that values student engagement and inquiry based learning; and will contribute to the quality of undergraduate education at Canadian universities in the long term.

## Limitations

The generalizability of our findings is potentially limited by the self-selection of students enrolled in the programs and participating in the research. Both the TATP and TCC are voluntary programs. It is conceivable that students who choose to participate in these programs are not representative of TAs or graduate students more generally and that unique characteristics associated with the program participants might moderate any effects of the programs (i.e., there may be a participant-treatment interaction). For example, graduate students motivated to improve their teaching may be more susceptible to changes in teaching self-efficacy than students not motivated in a similar manner. These possible differences between graduate students who participate in these programs and those who do not may limit the generalization of our findings to the larger TA and graduate student populations. Without random assignment of participants from the larger population to the programs and a true control group consisting of students who do not participate in either of the programs, it is difficult to rule out a possible participant-treatment interaction.

Only a subset of the program participants elected to take part in the research project. This self-selection could also limit the generalizability of the findings to the larger group of program participants, as well as possibly further limit the generalizability of the findings to the larger population of TAs and graduate students. That said, with the high participation rates (over 50% of possible respondents) for the survey and microteaching segments of the research project, it seems unlikely that self-selection at this level would be a substantial issue for these components of the research.

Regardless of the level of self-selection (program and/or research participation), we encourage colleagues at other institutions to consider replicating this research with similar programs that they offer. An empirical validation of these findings through replication would support the generalizability of the findings.

Another limitation of the study is that the video recordings of microteaches do not take place in real classrooms but are simulated teaching experiences, where a small group of graduate students play the role of learners in the class. During microteaching, we cannot observe the long-term rapport that TAs may establish with students and cannot capture the whole range of teaching situations that they will experience. In the study, we used an abbreviated version of the Teacher Behaviours Inventory to reflect the teacher behaviours that most frequently occur in a ten-minute microteach. Future research may examine the teaching of TAs and ITAs in a real classroom setting, using the full fifty item scale.

## Future Research

The study raises a number of questions that we may explore in future research to better understand the impact of TA training on the effectiveness of ITAs. Future research needs to examine the relationship between intercultural competence and teaching effectiveness among ITAs. In the next study, we would like to

compare changes in the intercultural competence of TAs in TATP and TCC using pre- and post- measures of intercultural competence. Future research may also examine the impact of participating in an intercultural communication program like TCC on rates of degree completion among international graduate students, as well as on the amount of conflict between TAs and their supervisors.

We would also like to follow up by video-recording ITAs teaching in their own classrooms before and after the program, in order to examine changes in rapport and teacher immediacy behaviours in an actual classroom setting. Observation of actual classroom teaching can be combined with an assessment of participants' approaches to teaching using the Approaches to Teaching Inventory (Trigwell & Prosser, 2004) as well as with measures that examine how students' perception of the TA's teaching has changed.

In a follow-up study, data could also be collected from participants during a Time 3 microteach, four to six months after program completion to code and observe long-term changes in teacher behaviours using the TBI. Interviews with participants two or three years out may also explore the long-term impact of the TCC program on ITAs' ability to teach and function in Canadian academia. Future research also needs to include comparisons with control groups that have not participated in training at all.



## Conclusions

Our research strongly supports the efficacy of intensive TA training programs such as the TA Training Program (TATP) and Teaching in the Canadian Classroom (TCC). Participants in both programs demonstrated increased teaching confidence, reduced communication apprehension, and improved interactional and organizational teaching skills over the course of their programs. International TAs who participated in TCC also made greater gains in their overall teaching effectiveness than the Canadian and international participants in TATP, supporting the importance of TA training enhanced with intercultural components for International TAs (ITAs). This last finding is extremely robust, as it is based on the largest data set of video-recorded TA instruction in the literature to date, with over 378 videos analyzed. The focus group results also suggest an increase in the ability of ITAs to promote student engagement, establish rapport with their students, and provide feedback to undergraduates as a result of their TA training.

Most of the previous studies of TA training programs found that increases in self-efficacy and student-centered approaches to teaching only occurred in teaching development programs that ran thirty hours or longer (e.g., Postareff et al., 2007), whereas we were able to show that relatively short, intensive programs make a significant difference in teacher self-efficacy, communication apprehension, and teacher behaviours. Training in either the TATP or TCC programs will likely have a substantial payoff for the undergraduate students that our international teaching assistants will eventually teach. However, we believe that for international graduate students, participation in a program with significant intercultural components will have a considerable impact not just on their ability to teach in the Canadian classroom but also in their ability to be successful in their own degree completion and in Canadian academia in general. Given the large number of international graduate students who are teaching in our undergraduate programs, we feel it is essential that these students receive training in teaching, both for the students they will teach, and for their own academic success.

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