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The Impact of the Instructional Skills Workshop on Faculty Approaches to Teaching

Debra Dawson[1], Paola Borin[2], Ken Meadows[1], Judy Britnell[2], Karyn Olsen[1], Gayle McIntyre[1]

[1]Western University, Centre for Research on Teaching and Learning in Higher Education, & [2]Ryerson University

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1 Yonge Street, Suite 2402
Toronto, ON Canada, M5E 1E5

Phone: (416) 212-3893
Fax: (416) 212-3899
Web: www.heqco.ca
E-mail: info@heqco.ca

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1.0 Executive Summary

1.1 Context

The Instructional Skills Workshop (ISW) is an internationally recognized, peer-based, educational development program involving 24 hours of structured intensive instruction designed to strengthen instructors' skills in planning, teaching, feedback and critical reflection through a student-focussed process. For over 30 years, the ISW has been offered at more than 100 institutions worldwide as a method of facilitating the development of student-centred, reflective instructors (Day, 2004). Although based on best pedagogical principles for teaching adult learners (Day, 2005), little empirical research has been performed to assess the impact on faculty of participating in the ISW (Macpherson, 2011). Research performed to date has typically shown that individuals who participate in this workshop report that it is transformative to their teaching in the classroom (Macpherson, 2011). The present study sought to extend these findings by conducting a pre-post analysis of ISW and non-ISW participants. The goal of this research was to investigate the influence of the ISW on developing a student-centred approach to teaching in university and college faculty.

1.2 Research Questions

We hypothesized that ISW participants would become more student-centred and less teacher-focussed in their teaching style after participating in the workshop. Moreover, it was expected that their perspectives on teaching would shift towards more developmental and nurturing approaches, and away from the information transmission approach. It was not anticipated that individuals would shift towards apprenticeship or social reform approaches to teaching as a result of participating in the ISW. In addition, more support was sought for the hypothesis that participating in the ISW leads to a transformation of instructors' teaching practices.

1.3 Methods

A pre-post study of ISW (n=42) and non-ISW (n=23) participants was conducted at four universities and one community college in Ontario. Both quantitative and qualitative data analyses were performed. Prior to participating in the ISW, and again four months post-ISW, instructors were asked to complete a survey that included demographic information, the Approaches to Teaching Inventory-Revised (ATI-R; Trigwell, Prosser & Ginns, 2005) and the Teaching Perspectives Inventory (TPI; Pratt, 1998). The non-ISW study participants also completed the survey twice at similar intervals. In addition, ISW participants were invited to attend a focus group or one-on-one interview that discussed their post-ISW teaching experiences. Eighteen individuals chose to participate in the discussions on teaching five to 12 months after completing the second survey.

1.4 Summary of Findings

We identified several significant findings through the course of this research. ISW participants were significantly less teacher-focussed, as measured by the ATI-R, four months after the study was performed, whereas the non-ISW participants showed no change in teacher-focus. This suggests that the ISW had an effect on the type of teaching behaviours employed by ISW participants. No significant change was found for the student-focussed dimension of the ATI-R for either group. However, qualitative analysis of discussions on teaching found that participants frequently described replacing part of their lectures with a variety of active learning methods, thereby reducing the instructional focus on transmission and employing teaching methods known to elicit deeper learning. Many comments from the qualitative analysis support a shift towards increased student focus in terms of thinking about what students need, planning experiences to actively engage students, and seeking student feedback.

We also found a significant interaction between group membership (ISW versus non-ISW) and TPI responses. Specifically, non-ISW participants became less developmentally oriented over the four months of the research. This is significant because a Developmental perspective is very student-centred and is seen by Pratt (1998) as important for supporting students in their critical and problem-solving skill development. For the quantitative analyses, ISW participants did not increase in this dimension, nor did they increase in the other student-centred subscale (Nurturing). However, in the analysis of interview and focus group data, participants described practices characterizing the Developmental perspective, such as thinking about content from a student perspective, bridging knowledge and adapting the learning to the learner's ways of thinking.

In addition, it was found that there was a significant difference between ISW and non-ISW participants' total TPI score at Time 2, suggesting that ISW participants were now more likely to act on their own personal teaching beliefs and intentions than non-ISW participants.

We suggest that the interval of the study (four months) may not have provided sufficient time for instructors to shift towards more student-centred dimensions. The ISW participants' scores did not decrease in the transmission dimension, but they did show an unexpectedly strong trend towards the Social Reform perspective. The focus on reflective practice and student engagement might suggest that participation in the ISW impacts the view instructors have of teaching as a tool for social change.

Finally, it was hypothesized that participants would report increases in reflection on their teaching practice and experiences. This was strongly supported in the analysis of transcripts which suggested that, after taking the ISW, participants reflect more on personal assumptions, beliefs and practices encourage their students to reflect in classroom settings in order to deepen their learning, and value the feedback provided to them by others. We believe this to be evidence of transformative learning occurring among our instructors.

Overall, the results offer some tantalizing findings about the impact of the ISW. This study represents an important first step in determining how educational development programs, and the ISW in particular, may assist with developing student-centred, reflective practices among faculty. These practices are key components of transformative teaching. This research also presents evidence that, without such an intervention, our instructors may adopt a less student-centred form of teaching, which may have a negative impact on student learning.

2.0 Background

The Instructional Skills Workshop (ISW) is an internationally recognized instructor development program developed in British Columbia and offered at postsecondary institutions for over 30 years (Day, 2005). This peer-led program develops critical skills for self-reflection on teaching and provides a framework for teaching based on Kolb's (1984) model of experiential learning (Day, 2004). Key elements of that framework include a focus on learning objectives and active participation of students, which are both considered essential to helping students engage in meaningful (deep) and transformative learning (Entwistle, 2010). The ISW has only recently been introduced in Ontario to both faculty members and graduate students, although it has been implemented by over 100 universities and colleges worldwide. Western University and Ryerson University have been facilitating ISW workshops since 2008 and the workshop is now offered at The University of Toronto, Brock University, the University of Windsor, McMaster University, Waterloo University, Georgian College, Sheridan College and St. Clair College. As increasing numbers of universities and colleges are turning to the ISW to develop faculty and engage students, it is imperative that we evaluate the efficacy of this program more thoroughly.

Grounded in the pedagogical literature, the ISW involves structured, intensive instruction (24 to 30 hours) designed to strengthen participants' planning, teaching, feedback and critical reflection skills (Day, 2004). The program, based on a workshop developed for the CEGEP system in Quebec, was developed in the late 1970s in British Columbia after the rapid expansion of the province's college system (Macpherson, 2011). ISW participants develop personal goals for the workshop, engage in group discussions on teaching, and are required to develop learning outcomes for and deliver three mini-lessons. Participants are encouraged to use a reflective teaching framework for their lessons commonly referred to as the "BOPPPS" model, which involves six key elements: 1) a bridge into the lesson; 2) objectives for the lesson; 3) a pre-test of prior knowledge; 4) learner participation; 5) a post-test to assess learning; and 6) a summary of the lesson (ISW Network, 2013). Mini-lessons take place in small groups and participants take turns providing and receiving feedback from one another.[1]

The ISW relies on the fundamental elements of transformative learning, i.e., individual experience, opportunities for critical reflection, and dialogue with the self and others (Mezirow & Taylor, 2009). In addition, it incorporates other important elements, including authentic practice (participants teach genuine lessons to actual learners), intense experiential activities (participants engage in a wide variety of active learning techniques) and a focus on student-centred teaching (the group leaders act as facilitators and co-create the schedule of activities with learners). All of these activities are designed to help instructors think about the impact of their teaching methods on student learning, develop effective curriculum and strengthen their scholarship of teaching (Hubball et al., 2005; Trigwell et al., 2005).

Instructors report that the ISW is a transformative learning experience (Smith, Pang & Chuah, 2001) but despite considerable implementation across Canada, the United States and in other countries, little empirical research has been performed on the program's outcomes. Thus the goal of this research was to investigate the influence of the ISW on enhancing the student-centred approach to teaching among university and college faculty by conducting a pre-post analysis of ISW and non-ISW participants at several academic institutions in Ontario. Participants were recruited at four Ontario universities and one college in order to test the robustness of the ISW model, rather than the skills of the workshop facilitators at a single institution. Both ISW and non-ISW participants completed a survey composed of demographic questions, the Approaches to Teaching Inventory-Revised (ATI-R; Trigwell et al., 2005) and the Teaching Perspectives Inventory (TPI; Pratt, 1998). The ATI-R and the TPI are brought together here in order to provide insight into the perspectives instructors take on their teaching and to assess the impact of the ISW on participants' conceptions of teaching.

The ATI-R measures the degree to which instructors are "student/learner focussed" rather than "teacher/information transmission focussed." The instrument has two independent subscales: the Conceptual Change/Student-Focussed approach (CCSF) and the Information Transmission/Teacher-Focussed approach (ITTF; Trigwell, 2010). With the CCSF approach, the goal of teaching is to facilitate transformative learning and to change how students consider the subject matter. The ITTF subscale reflects the transmission of information or content to students. Trigwell suggests that instructors who generally use the CCSF approach may at times incorporate a transmission approach in their teaching, while those who have an ITTF approach will not include a student-centred approach in their repertoire. For that reason, the CCSF approach is seen as being broader and more responsive to student learning needs.

The TPI suggests that teaching styles can be subdivided into five categories: Transmission, Apprenticeship, Developmental, Nurturing and Social Reform. Research performed by Collins and Pratt (2011) on over 1,000

[1] See Appendix A for a full description of the ISW.

respondents found that the majority of instructors possess one or two dominant perspectives; Apprenticeship, Developmental and Nurturing are the most common. Fewer people take the Transmission approach, and far fewer adopt the Social Reform perspective. While the Transmission approach is very teacher-focussed, the other four perspectives are student-centred to varying degrees.

- Instructors with the Transmission approach to teaching believe that their role is to accurately transmit content to students, and they want to ensure that students will have accurate notes and be able to reproduce content as a result of their teaching.

- Instructors take an Apprenticeship perspective when they ask students to replicate through guided practice the actions they have performed. Here, the role of the teacher is to use authentic tasks to demonstrate behaviours and to have the learners successfully replicate those actions.

- A Developmental perspective requires that an instructor assess the prior knowledge of students and build on that understanding. Thus, the role of the teacher is to help students bridge what they know with the unknown using active learning techniques.

- A Nurturing perspective focuses on the learner's sense of self-efficacy and self-concept. Here, the instructor's role is to facilitate learning and to develop the whole person by presenting challenges, while ensuring that the learner's sense of his/her own abilities develops positively as result of those interactions.

- Instructors with the Social Reform approach to teaching are committed to social change and regard teaching as a tool for encouraging these changes. The focus for these instructors is broader than the basic acquisition of knowledge by individual learners.

The TPI acknowledges that instructors may take different teaching approaches relative to others within and outside their disciplines (Pratt, 1998) and is used in Canadian ISWs as a means of encouraging instructors to examine their personal teaching orientations. The ATI-R, though not used as part of the ISW, assesses one of the core goals of the program, i.e., helping instructors adopt a student-centred approach to teaching. The inventory has also been used to assess instructors' approaches to teaching in many other educational development programs (Gibbs & Coffey, 2004; Stes & Van Petegem, 2012).

3.0 Previous Research

3.1 Impact of Educational Development Programs

Throughout the last fifteen years, the volume of research focussing on the impact of educational development programs has increased. Although previous research relied mainly on measures of participation and participant satisfaction (Kreber, Brook & Policy, 2001), more recent studies have attempted to evaluate programs using a variety of methods and measures. For example, Murray (2005) and Piccinin, Cristi and McCoy (1999) all found that instructors who consulted educational development offices prior to teaching received significantly improved student evaluations. In addition, the more current research has been designed with best practices in mind, often including pre- and post-tests of participants and control groups. In much of this research, the two most common instruments used to assess the influence of educational development programs have been the ATI-R and the TPI. This literature is briefly reviewed here.

Research by Ho (1998) examined an educational development program designed to shift instructors towards student-centred teaching approaches. This program was based on comprehensive research by Trigwell and

Prosser (1996) which suggested that when instructors take an information transmission approach to teaching, students adopt a surface approach to learning in response. However, when instructors became more student-centred and saw themselves as facilitators in the classroom, they encouraged self-directed learning and students were more likely to adopt a deep approach to learning as a result. Trigwell, Prosser and Waterhouse (1999) have argued elsewhere that when faculty take a student-centred approach to teaching, students are more likely to engage in deep learning (for instance, acquiring the ability to apply knowledge). It is this deep approach to learning that is seen as essential to meaningful student learning in postsecondary education (Entwistle, 2010). Conversely a transmission or teacher-focussed approach to teaching is said to lead to surface learning (e.g., students engaging primarily in rote learning; Ho, 1998). When students engage in surface learning, they do not try to make meaning of the material and are less likely to be able to apply or transfer concepts learned from one situation to another (Entwistle, 2010). Student-centred instruction is also more likely to involve the use of active learning techniques (Dawson & Mighty, 2010), which are critical to deep learning (Trigwell et al., 2005). Trigwell (2010) suggests that given the relationship between how instructors teach and how students learn, it is imperative that instructors move towards a more student-centred learning approach in their teaching. His research demonstrates that when instructors focus on transmission of content to students, the students see their goal in learning as retrieval of facts. They also take an extrinsic rather than intrinsic approach to learning, focussing on the reward for learning rather than on developing a meaningful understanding of the subject matter (Entwistle, 2010). The end result is that those who take a surface approach to learning have lower achievement scores (Trigwell, 2010).

Ho's (1998) study assessed the impact of an educational development program through open-ended interviews conducted soon after the training program finished. Although the study was small and lacked a control group, many participants who were not already student-centred at the onset of the study reported becoming more student-focussed as a result of their participation in the program. Similar to the research by Piccinin et al. (1999), the instructors who became more student-centred in their teaching also received higher teaching ratings.

Ho, Watkins and Kelly (2001) expanded upon Ho's original study by examining how instructors who adopted a more student-centred approach (after completing a 12-hour educational development program) affected their students' approaches to learning. For those instructors who had changed to be more student-centred, as assessed through interview data, a significant shift occurred in their students' approaches to studying, and these students were more likely to take a deep approach to studying. This is particularly significant given the short length of the instructor training. However, the method used to assess conceptual change (i.e., qualitative analysis of interview data) was extremely labour intensive and therefore not well suited to having large numbers of participants.

Later research conducted by Gibbs and Coffey (2004) used an earlier version of the Approaches to Teaching Inventory (ATI; Trigwell, Prosser & Waterhouse, 1999) to determine if instructors became more student-centred as a result of training. This pre-post study of university teacher training programs (ranging from 60 to 300 hours in length) found that the experimental group became more student-centred with training. Perhaps more significantly, the control group of instructors (who did not complete the training) became more teacher-focussed than pre-test levels, suggesting that the training, rather than time, produced the change in the experimental group. This research also highlighted the importance of offering training to new instructors in order to prevent shifts away from student-centred teaching.

In addition, a series of studies conducted by Stes and her colleagues investigated the impact of educational development programs on the teaching practices of novice university faculty (Stes, Clement & Van Petegem, 2007; Stes, Coertjens & Van Petegem, 2010). In the first study, Stes et al. (2007) explored the long-term impacts of a year-long training program for faculty and they were specifically interested in devising a method of assessment that went beyond the typical satisfaction data collected by many centres for teaching and

learning. As Kirkpatrick (1998) suggests, to truly assess the impact of training programs it is essential to move beyond what he calls Level 1, or reaction data, to higher levels of evaluation where we measure changes in participants' attitudes or knowledge (Level 2), to changes in behaviour (Level 3), to finally assessing results at the student or even organizational level (Level 4). Stes et al. found that two years after the training, instructors continued to report both attitudinal and behavioural changes (i.e., Levels 2 and 3) as a result of participating in the program. However, it was difficult to determine what caused these changes (e.g., the intervention itself, passing time, or other external variables) given that the study relied on a small number of participants, was hampered by a low survey response rate, and lacked a control group.

To address the limitations of the first study, Stes et al. (2010) sought to investigate more formally how instructors' approaches to teaching changed as a result of participating in educational development programs. Similar to Gibbs and Coffey (2004), they used the ATI to examine whether or not instructors became more student-centred in their teaching as a result of participating in the training program. The study found that both program participants and control subjects increased their use of student-centred approaches from pre-test to post-test measures, but the strongest results were observed among those involved in the training intervention. The study also found that instructors who engaged in a student-centred approach to teaching were more likely to be innovative teachers. The authors stressed the importance of involving junior instructors in educational development programs. Finally, they suggested that only long-term programs are likely to lead to any significant change in attitude or behaviour, given that altering personal teaching approaches is challenging and requires time. Again, the study relied on a small sample (i.e., 20 experimental and 20 control participants) which may be the reason why only weak trends were identified.

In a similar study, Postareff, Lindblom-Ylanne & Nevgi (2007) found that educational development programs for faculty led to increases in student-centred teaching, as measured by the ATI, particularly for those who continued to engage in educational development programs after the initial course. Specifically, they studied 200 university instructors who had completed pedagogical courses of varying lengths (with the longest courses lasting over one year). They found that those with the greatest amount of teacher training scored highest in terms of being student-centred in their approach to teaching, even when teaching experience was controlled for in the analyses. The only group to change significantly on the teacher-focussed subscale of the ATI was the group that had more than one year of pedagogical training. The authors suggest that it may be more difficult to change on this dimension than on the student-centred dimension. They also interviewed a subset of this sample and found that instructors believed that the pedagogical training improved their reflective practice, developed their knowledge of teaching methods, made them aware of their own approach to teaching and increased their motivation to try new teaching methods. Some also commented that their feelings of self-confidence increased as result of the training.

A more recent study by Cassidy and Ahmad (2013) used the ATI-R to investigate the impact of a short-term educational development program on graduate students' approaches to teaching. The authors found that a 25-hour, non-credit, student-centred program, intended to increase transformative learning and reflective practice, significantly shifted participants away from teacher-focussed towards more student-centred teaching approaches. In fact, a recent review of British educational development programs suggests that these programs not only positively shift instructors' teaching orientation towards student-centred but also result in positive changes in student learning (Parsons, Hill, Holland & Willis, 2013).

In addition to examining instructors' approaches to learning, other studies, such as that by Hubball et al. (2005), have assessed the impact of an educational development program on increasing faculty members' reflective practice. The authors examined an eight-month faculty certificate program focussed on teaching and learning in higher education, which contained several components that explicitly involved reflection (e.g., writing a weekly reflective teaching journal, and completing the TPI both at the beginning and the end of the program). The researchers found that participation in the program led to significant and positive changes in

instructors' perspectives on teaching. They suggested that it is imperative that faculty members engage in reflective practice on their teaching in order to facilitate their development as teachers, to gain a better understanding of their students as learners, and to support the scholarship of teaching and learning. They proposed that reflection is best defined in this context as thorough consideration and questioning of what teachers do (i.e., what works and what does not) and what principles and rationales underlie personal teaching strategies and those of others. In addition, Hubball et al. found significant increases in the total TPI score of program participants. They suggested that, as a result of participating in the educational program, individuals were more comfortable "own[ing] their positionality as university teachers" (p. 71) and felt more confident or capable of asserting and acting on their beliefs about teaching.

In summary, the ways in which educational development programs are assessed varies throughout the literature, although the general consensus is that such programs tend to yield positive results. However, the robustness of this body of research is questionable and important gaps still exist, including an overreliance on single sources of information and failures to adopt pre- and post-test measures, use control groups or provide evidence of long-term impact (Pleschova & Simon, 2013). The research reviewed in this report suggests that it is possible to change instructors' conceptual models of teaching and to increase their use of reflective practice. Yet it is often unclear which elements of particular programs produce the greatest impact, due to the vast differences in program hours, duration and focus.

3.2 Previous Research on the Instructional Skills Workshop

To date, the effectiveness of the ISW program has only been evaluated by exploring the immediate reactions of participants to the program, primarily in terms of their level of satisfaction. Participants have reported that the ISW enhances their teaching practices, increases critical reflection on teaching and increases their sense of self-efficacy (Day, 2004). Informal surveys conducted by the teaching and learning centres at Western and Ryerson found that faculty and graduate students report a high degree of satisfaction with the workshop (mean = 4.9/5) and participants' comments suggest that they feel the program has been transformative to their teaching. At the University of Calgary, 74 to 82% of participants taking the ISW over a period of four years agreed that all instructors should take the program, and 74 to 100% of participants felt more confident as instructors and believed that their personal knowledge of reflective approaches, learning styles and lesson planning had increased (Peterson, 2010).

The most recent and comprehensive research on the ISW was a dissertation completed by Macpherson in 2011. In this mixed methods study, she combined survey research on ISW participants with follow-up interview data to determine if components of the ISW lead to transformative learning. She used Kirkpatrick (1998) to frame her survey questions, moving from satisfaction with the ISW (Level 1), to investigating the learning that occurred in the ISW (Level 2), to examining the actual changes in instruction after the ISW (Level 3). She was also interested in exploring the positive impact, if any, of these changing teaching practices (Level 4). However, evaluating long-term effects of the training on both instructor behaviours and on student learning proved difficult. Macpherson developed a comprehensive model for understanding how the ISW content and framework interact with the active learning techniques and peer feedback to influence learning and behaviour. This model was strongly supported in her results. Macpherson also found evidence for each of Kirkpatrick's levels in her interview data and discovered that the ISW persuaded instructors to use more student-centred teaching methods in their classroom. She concluded that the program appears to lead to transformative learning, but also noted that ISW participants were already likely to use such techniques even prior to taking the ISW. Consequently, the program may be reinforcing previous beliefs and practices rather than causing a strong shift in teaching approach. Macpherson stated that she relied on a small sample to inform her discussion, and thus her results must be interpreted with caution. Furthermore, the study lacked a control group, meaning that it was difficult to determine if the changes among the instructors were due to participation in the ISW or a result of the passage of time. Our study, however, seeks to extend Macpherson's

work by using both pre- and post-program surveys, assessing a larger pool of ISW participants and including control data from non-ISW survey respondents.

4.0 Research Questions and Hypotheses

Given that investigations of educational development programs for higher education instructors are still relatively scarce, the current research sought to examine the impact of the ISW pedagogical program on instructors' approaches to teaching. The length of an educational development program necessary to significantly change the behaviour or attitudes of instructors is still debated in the literature. Ho et al. (2001) believe that the 12-hour program assessed in their study had a significant impact on participants, and yet Southwell and Morgan (2009) report strong evidence that short workshops (which they characterize as workshops that focus on discrete topics) have little impact on changing teaching behaviours in comparison to more intensive programs. Hubball et al. (2005) and Stes, Clement and Van Petegem (2007) demonstrated that extended training programs (150 and 140 hours respectively) could significantly influence the approaches faculty take to teaching. However, many new faculty may not voluntarily engage in such lengthy programs given the competing demands on their time. The ISW involves 24 to 30 hours of instruction, an additional eight to ten hours of preparation for class, and is generally held over three to four consecutive days. Although the ISW is intensive, its relatively short duration makes it more likely to appeal to a broader sector of those teaching at Canadian higher education institutions. In addition, given that this workshop is widely run at many Canadian universities and colleges, it is essential that we critically evaluate the impact of the ISW on its participants' teaching strategies.

Our research extends previous research on the ISW by including a control group to ensure that any changes that occurred among instructors' approaches to teaching are due to program participation and not a result of the passage of time. A pre- and post-test quasi-experimental design is used here and includes both quantitative and qualitative measures. We sought to answer the following questions:

- Does participation in the ISW lead to increases in reflective practice?
- Does the ISW affect approaches to teaching among instructors?
- Is there evidence of transformation of teaching as a result of participation in the ISW?

We relied on two instruments (TPI and ATI-R) and focus group/interview data to answer these questions. The TPI was included because of its common use in North American ISWs and in other educational development programs (Collins & Pratt, 2011). The ATI-R likewise gave us the opportunity to better examine the relationship between participating in the ISW and developing student-centred approaches to teaching. Our specific hypotheses were as follows:

- The ISW group will become more "Conceptual Change/Student-Focussed" (CCSF, as measured by the ATI-R) in comparison to the control group as a result of engaging in reflective practice while participating in the ISW.

- The ISW group will become less "Information Transmission/Teacher-Focussed" (ITTF, as measured by the ATI-R) in comparison to the control group after learning the BOPPPS framework and joining in the discussions on teaching held during the ISW.

- The ISW group will demonstrate a significant increase in overall TPI scores in comparison to the control group as a result of engaging in reflective practice while participating in the ISW. A relationship between instructor training and increases in overall TPI scores has been previously identified by Hubball et al. (2005).

- ISW participants will demonstrate a shift in the subscales of the TPI such that we expect a decrease in the Transmission perspective, and increases in both the Developmental and Nurturing perspectives. No effects on the Apprenticeship or Social Reform perspectives are expected because no component of the ISW is thought to be specifically related to either of these perspectives.

5.0 Method

5.1 Recruitment of Subjects and Survey Administration

Participants were recruited by e-mail approximately one week prior to beginning the ISW at Western University, Ryerson University, Georgian College, the University of Waterloo, or the University of Windsor. The e-mail (Appendix B) included a link to the survey instrument. The e-mail also informed participants that they would be asked to complete the same survey approximately four months after completing the ISW and invited them to participate in a focus group or individual interview five to 12 months after the workshop. In addition to the e-mail request for participation, a paper copy of the survey instrument was also available to participants on the first morning of the ISW. Participants who chose to complete the paper survey did so prior to beginning the workshop and were asked to do the second survey online after four months. They were also invited to focus group/interviews five to 12 months after completing the ISW. Completion of both online and paper surveys allowed participants' names to be entered in a draw for one of two Apple iPads.

An effort was made to use propensity matching, in which participants were paired with a "highly similar" cohort to act as a control group (Stes et al., 2010). However, it proved difficult to get faculty members to suggest names for non-ISW participants (control group); hence, it was necessary to change the method of recruitment. In the end, control group participants were recruited at events that had a high number of new faculty (e.g., New Faculty Orientation at Western University), because many of the ISW participants were also new faculty. Similar to the ISW group, control group members were asked to complete the first survey on paper or online and the second survey online four months after they had completed the initial survey. Control group participants were entered in the draws for the two Apple iPads but were not invited to participate in focus groups/interviews.

5.2 Participants

Of the 162 participants enrolled in fifteen separate ISWs at five different institutions between February 2011 and August 2012, 107 (66%) agreed to participate in the research and responded to the Time 1 survey. The Time 2 survey was sent to 106[2] of the ISW participants who completed the Time 1 survey, and 57 (54%) responded. Although a large number of individuals responded to the Time 1 but not Time 2 survey, a comparison on the main dependent variables (ATI-R and TPI) detected no significant differences between participants who completed only the Time 1 and those who completed both surveys.

Table 1 illustrates the number of ISW and non-ISW participants at Time 1 and Time 2 who participated in the research (Data Collected), but due to missing data, the responses of only a subset of the participants were used in the primary analyses (Data Analyzed). The data collected at the University of Windsor were dropped (and are not mentioned again here) because no participant completed both Time 1 and Time 2 surveys.

[2] Due to a technical issue, it was not possible to determine if one of the survey respondents had participated in ISW or not. The respondent was dropped from all substantive analyses.

Table 1: Number of Participants in Each Data Category

	Program	Time 1 Survey	Time 2 Survey
Data Collected			
	ISW	102[1]	48
	Non-ISW	43	26
	Total	145	74
Data Analyzed			
	ISW	42	42
	Non-ISW	23	23
	Total	65	65

Note. [1]The Time 1 surveys for four ISW participants were only partially completed and are not counted in the Data Collected or Data Analyzed categories.

5.3 Instruments

The survey was composed of three sections. This included a demographic section, the ATI-R (Trigwell, et al., 2005) and the TPI (Pratt, 1998). The authors of each inventory granted permission to use their instrument in the current study. Each section of the survey is described in more detail below. An example of the survey itself is provided in Appendix C, although the ATI-R and TPI questions have been removed to respect copyright.

5.3.1 Demographic Information

Demographic information was collected from survey participants in order to facilitate propensity matching and to gather more information on the participants' and control subjects' teaching history. The demographic questions are listed in the participant survey (Questions #2-9, Appendix C). Most of the collected demographic information is summarized in Table 2, but additional data also appear in Appendix D. Although we targeted new faculty specifically as participants in the ISW and non-ISW groups, respondents came from all ranks of the university or college. Participants in the ISW and non-ISW groups were similar in terms of demographic characteristics, although some differences were identified. Specifically, ISW participants were more likely to be at the lower ranks in terms of their employment status, have less teaching experience, and more commonly hold contract/sessional appointments than the non-ISW group. The possible implications of these differences are addressed in the quantitative results discussion. Given the difficulty in finding matched control respondents, the two groups are sufficiently similar to justify comparison.

Table 2: Demographic Characteristics of Participants[1] in Percent

	ISW (*n* = 42)	Non-ISW (*n* = 23)
Gender		
Female	61.0	56.5
Male	39.0	43.5
Employment Status		
Graduate Student[2]	9.5	0
Instructor/Lecturer	33.3	21.7
Assistant Professor	9.5	56.5
Associate Professor	4.8	13.0
Full Professor	7.1	4.3
Non-Full-Time College	7.1	0
Full-Time College	11.9	0
Other	16.7	4.3
Institution		
Ryerson University	14.3	13.0
Western University	54.8	82.6
Georgian College	28.6	4.3
University of Waterloo	2.4	0
	ISW (*n* = 42)	**Non-ISW (*n* = 23)**
Teaching Experience as Faculty		
None	11.9	8.7
<1 to 4 years	42.9	34.8
5-9 years	23.8	17.4
10-14 years	11.9	17.4
15-19 years	4.8	13.0
20-24 years	0	8.7
25-29 years	4.8	0
Appointment		
University – Tenured	4.8	4.3
University – Tenure Track	7.1	47.8
University – Sessional	52.4	39.1
College – Full-Time	19.0	4.3
Other	16.7	4.3

Note. [1] The demographic information only reflects those participants whose data were used in the primary analyses. [2]All graduate students participating in the research held positions as instructors/lecturers.

5.3.2 Approaches to Teaching Inventory

The ATI-R evaluates participants' approach to teaching as teacher-focussed or student-focussed. Trigwell et al. (2005) found that two factors emerged from a factor analysis of this instrument that aligns with the two scales, the "Conceptual Change/Student-Focussed " (CCSF) scale and the "Information Transmission/Teacher-Focussed (ITTF)" scale. Each scale contains 11 items. Items in the CCSF scale assess instructors' interest in helping students to make their own meaning of the learning that is occurring. Sample items include:

- I make available opportunities for students in this subject to discuss their changing understanding of the subject.
- I see teaching as helping students develop new ways of thinking in this subject.

The ITTF scale examines how teachers organize and plan their lessons to ensure the successful transmission of facts. The focus here is on the teacher's management of material and teacher competencies rather than on changing student thinking about the subject matter. Sample items from this scale include:

- In this subject, my teaching focuses on the good presentation of information to students.
- It is important to present a lot of facts to students so that they know what they have to learn for this subject.

Respondents indicate the degree to which the inventory statements are personally true with regards to teaching a specific subject, using a five-point scale that ranges from Only Rarely (1) to Almost Always (5). Research on the expanded twenty-two-item inventory found that it is a reliable and valid instrument (Trigwell et al., 2005). Several studies have found that this instrument has good internal reliability as measured by Cronbach's alpha (Trigwell et al., 2005; Stes et al., 2010). For instance, Postareff et al. (2007) found that the Cronbach's alpha value for the CCSF scale ranged from .77 (at Time 1) to .75 (Time 2), and for the ITTF subscale the reliability was .70 at both Times 1 and 2. Likewise, Cassidy and Ahmad (2013) found good internal reliability of the two scales (both above .75). In the current research, the two scales had good internal reliability (Table 3).

Table 3: Cronbach's Alphas at Time and Time 2 for the Two ATI-R Subscales

	Time 1	Time 2
ITTF	.80	.79
CCSF	.87	.86

5.3.3 Teaching Perspectives Inventory

The TPI was used to measure possible changes in participants' perspectives towards teaching. To develop the inventory, Pratt (1998) observed instructors teaching and reviewed transcripts of interviews with teachers of adult learners in five countries. These observations and transcripts form the basis upon which the TPI was developed. The TPI is a 45-item measure, which is composed of five subscales (see Table 4 for the subscales and example items). Each subscale consists of nine items that are rated on a five-point scale. For two-thirds of the items, the scale ranges from Never (1) to Always (5), whereas for the remaining third of the items, the scale ranges from Strongly Disagree (1) to Strongly Agree (5). For the subscales, the range of

possible scores is 9 to 45. An overall TPI score can also be calculated by aggregating all 45 items, resulting in a range of possible scores from 45 to 225.

Table 4: Sample items for the Five Subscales of the Teaching Perspectives Inventory

Subscale	Example Items
Transmission	"I cover the required content accurately and in the allotted time" "Effective teachers must first be experts in their own subject areas"
Apprenticeship	"Knowledge and its application cannot be separated" "I model the skills and methods of good practice"
Developmental	"Teaching should focus on developing qualitative changes in thinking" "I challenge familiar ways of understanding the subject matter"
Nurturing	"It's important that I acknowledge learners' emotional reactions" "I find something to compliment in everyone's work or contribution"
Social Reform	"Individual learning without social change is not enough" "I use the subject matter as a way to teach about higher ideals"

For each of the subscales, the Cronbach's alpha reliability value has been found by Collins and Pratt (2011) to range from .70 to .84, indicating that the scale has good reliability. Collins and Pratt (2011) also found that the instrument has good face validity (as measured by a card sort into the five perspectives) and good internal validity (as measured by a factor analysis). Table 5 demonstrates that, in the current study, the scales of the TPI have moderate to good internal reliability (based on Cronbach's alpha values). As the note for Table 5 suggests, the Transmission and Developmental subscales had items dropped in order to increase the reliability coefficients to an acceptable level. These revised scales were then used for the substantive analyses. For the eight-item version of the Transmission subscale, the range of possible scores is 5 to 40, and for the seven-item version of the Developmental subscale, the range of possible scores is 5 to 35.

Table 5: Cronbach's Alphas at Time and Time 2 for the Five TPI Subscales and the Total TPI Score

TPI Subscale/Scale	Time 1	Time 2
Transmission[1]	.67	.62
Apprenticeship	.76	.72
Developmental[2]	.83	.75
Nurturing	.82	.86
Social Reform	.89	.90
Total TPI Scale	.88	.89

Note. [1] Based on the 8-item version of the Transmission subscale. The alphas for the original 9-item version were .66 and .58 at Time 1 and 2, respectively. [2] Based on the 7-item version of the Developmental subscale. The alphas for the original 9-item version were .74 and .63 at Time 1 and 2, respectively.

5.4 Focus Groups and Interviews

Twelve people participated in one of three focus groups conducted approximately five to 12 months after completing the ISW, and six more people agreed to individual interviews conducted during the same time frame (n=18). Participants were invited to focus group interviews if, on the Time 1 survey, they indicated their willingness to take part in a focus group. Interviews lasted 30 to 60 minutes and discussions were recorded and transcribed. Given that most participants who completed Time 1 and Time 2 surveys came from Western University and Georgian College, a decision was made to only collect data from these two institutions. Focus groups were conducted face to face in an informal setting using a common introductory script outlining the process, ensuring anonymity of responses and freedom to withdraw at any point. Participants were invited to read and sign the ethics consent form. Facilitators started with a prescribed set of questions and follow-up prompts and they added, when appropriate, additional informal questions (Appendix E). Individual interviews were conducted either face to face or on the telephone with the same protocol, except that consent could be provided verbally instead of in written form. Table 6 summarizes the demographic characteristics of the focus group and individual interview participants. Focus group respondents were similar to our ISW survey respondents in that they were predominantly female and from the lower ranks of the professoriate.

Table 6: Demographic Characteristics of Focus Group and Individual Interview Participants in Percent

Gender	
Female	66.7
Male	33.3
Employment Status	
Instructor/Lecturer	50.0
Assistant Professor	11.1
Associate Professor	5.6
Full Professor	5.6
Other	27.8
Institution	
Western University	66.7
Georgian College	33.3
Teaching Experience as Faculty	
<1 to 4 years	44.4
5-9 years	22.2
10-14 years	5.6
15-19 years	11.1
20-24 years	5.6
25-29 years	5.6
30+ years	5.6

Appointment	
University – Tenure Track	5.6
University – Contract/Sessional	61.1
College – Tenure Track	5.6
College – Contract/Sessional	16.7
College – Other	11.1

Note. n = 18.

6.0 Results

6.1 Quantitative Findings

6.1.1 Analysis Plan

A series of split-plot analyses of variance were performed on the subscales of the ATI-R and TPI. The two independent variables for these analyses were Group and Timing. The Group variable represents the participants who completed the ISW (ISW group) and those who did not (non-ISW group). The Timing variable reflects administration of pre-program (Time 1) and post-program (Time 2) surveys. As per our hypotheses, we expect the ISW group's scores on the ATI-R and on the TPI's Transmission, Developmental and Nurturing subscales to change significantly from Time 1 to Time 2, but we do not expect the same for the non-ISW group. For example, we expect a significant decrease in the ITTF approach to teaching from the beginning to the end of the ISW program for the ISW group, but not for the non-ISW group. This finding would reflect a significant Group by Timing interaction on the ITTF subscale of the ATI-R.

We will also consider the possible effects of one independent variable (Group *or* Timing) on a dependent variable irrespective of the remaining independent variable. For example, the ISW and non-ISW participants (Group) scores on a TPI subscale may differ significantly, regardless of when the survey was administered (Timing). If so, this finding would be referred to as a significant main effect for Group. However, it is not meaningful to consider main effects when significant interactions occur (Gardner, 2001), and therefore main effects will not be assessed here if significant interactions are first identified.

Statistical differences between the ISW and non-ISW groups were difficult to detect because of the fairly small sample sizes involved. This issue was further compounded by the fact that we employed a Bonferroni correction, a conservative procedure to control for the possible inflation of type 1 error due to multiple comparisons. As a result, some of our findings did not reach the conservative standard for significance, although they did meet the non-corrected criteria of $p < .05$. We refer to these findings as trends and report them here in order to shine light on areas that deserve further investigation. To support their inclusion, we have reported a measure of effect size for the primary analyses. An effect size is an assessment of the strength of association between variables which is not dependent upon the sample size (Ellis, 2010). Cohen (1988) provided guidelines for interpreting partial eta squared, the effect size measurement we report, such that .01 or less, .06, and .14 or more represent small, medium and large effect sizes, respectively.

6.1.2 Institutional Differences

Because of its structured nature, the ISW program is intended to have a similar impact on its participants regardless of the institution at which it is delivered. However, we felt that it was important to perform an empirical check to ensure that aggregating the data from the universities and college was appropriate (i.e., that they were not significantly different on the dependent variables). A series of independent *t*-tests was performed on the ATI-R and TPI subscales at Time 1 and Time 2 (see Table F1, Appendix F). Only one of the fourteen comparisons reached statistical significance with a Bonferonni correction (i.e., $p < .025$, ATI-R; $p < .01$, TPI subscale). Specifically, college-level instructors scored significantly higher on the ITTF subscale (ATI-R, Time 1) than their university level counterparts [$t(52) = 2.573$, $p = .013$; $M = 3.75$ and 3.47 and $SD = .345$ and .599 for the College and University participants respectively]. However, we believe that we are justified in aggregating the ISW participants from the university and college programs for all subsequent analyses given that only one significant difference was identified, and because separating the groups would further reduce our already small sample sizes.

6.1.3 Approaches to Teaching

As predicted, there was a significant interaction between Group and Timing for the ITTF subscale of the ATI-R [$F(1,63) = 9.04$, $p = .004$, partial eta squared = .125]. ISW participants' teacher-focussed approach score decreased significantly and substantively, as demonstrated by the large effect size, over the course of the program [$F(1,63) = 13.42$, $p = .001$, partial eta squared = .176], whereas the non-ISW group did not change significantly over the same time period [$F(1,63) = 1.06$, ns, partial eta squared = .017; see Figure 1 and Table 7]. This finding indicates that there was a consequential change for the ISW participants from the beginning to the end of the program away from viewing the role of the teacher as the expert and sole source for the provision of course information (i.e., the "sage on the stage", King, 1993, p. 30).

For the CCSF subscale of the ATI-R, the interaction and main effects for Group and Timing were all non-significant [$F(1,63) = .897$, ns., partial eta squared = .014; $F(1,63) = 0.00$, ns., partial eta squared = .000; $F(1,63) = 1.23$, ns., partial eta squared = .019, respectively; Table 7]. Thus, surprisingly, participation in the program, Timing, and Group membership were not related to participants' student-focussed approach to teaching (see Tables F2 and F3, Appendix F for the respective descriptive statistics).

Figure 1: Mean Teacher-Focussed Approach to Teaching for the ISW and Non-ISW Groups at Time 1 and Time 2

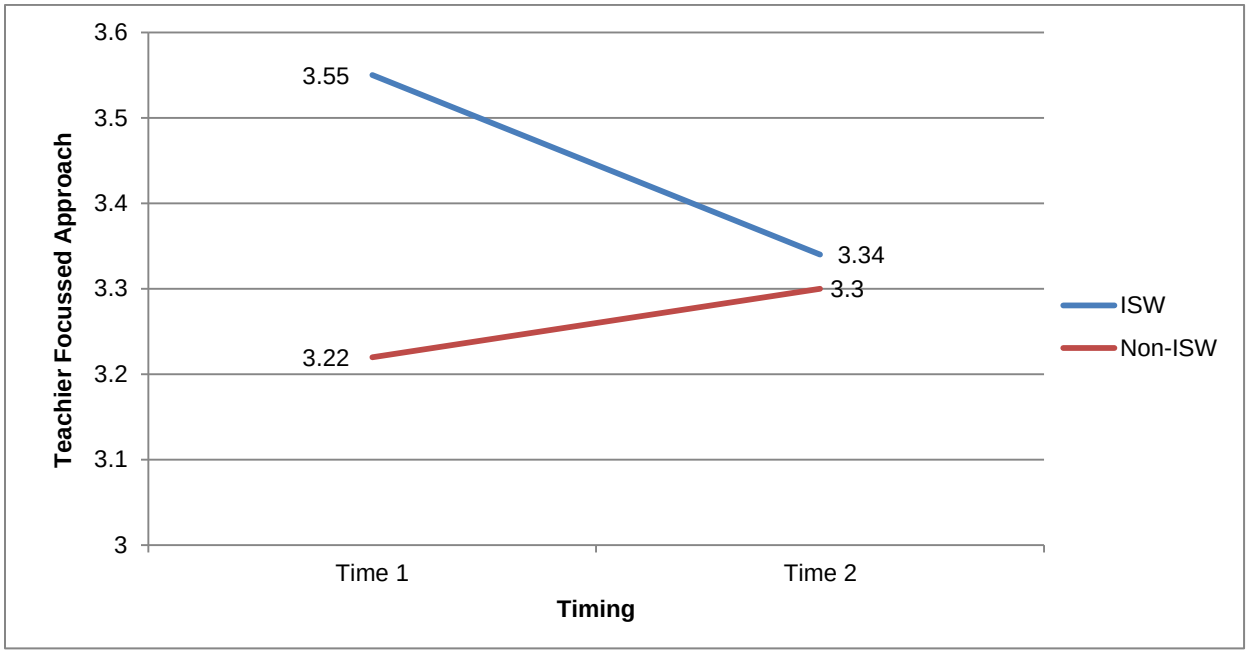


Table 7: Means and Standard Deviations for the ISW and Non-ISW Groups at Time 1 and Time 2 for the Two ATI-R Subscales

	Time 1		Time 2	
ATI-R Subscale	*M*	*SD*	*M*	*SD*
ITTF				
ISW Group	3.55	.532	3.34	.547
Non-ISW Group	3.22	.631	3.30	.649
CCSF				
ISW Group	3.97	.566	4.02	.590
Non-ISW Group	3.85	.731	3.80	.781

6.1.4 Teaching Perspectives

As predicted, there was a significant interaction between Group and Timing, but only for the Developmental subscale of the TPI and the Total TPI scale. The Transmission, Apprenticeship, Nurturing and Social Reform subscales did not evidence significant interactions. For the Developmental subscale, the ISW group did not change significantly from Time 1 to Time 2 [$F(1,66) = 1.67$, *ns*., partial eta squared = .025], but the non-ISW groups did [$F(1,66) = 8.01$, $p = .006$] and the effect was moderate to large (partial eta squared = .108). The ISW participants maintained their level of focus on the development of the student in their teaching perspective, whereas their non-ISW counterparts became less focussed on student development (see Figure 2 and Table 8). This large drop in the developmental focus of the non-ISW participants represents a

meaningful shift away from supporting students' learning; instructors are reducing their emphasis on helping students create elaborate cognitive structures which would result in students' deeper learner (Pratt & Collins, 2013).

Figure 2: Mean Developmental Perspective on Teaching for the ISW and Non-ISW Groups at Time 1 and Time 2

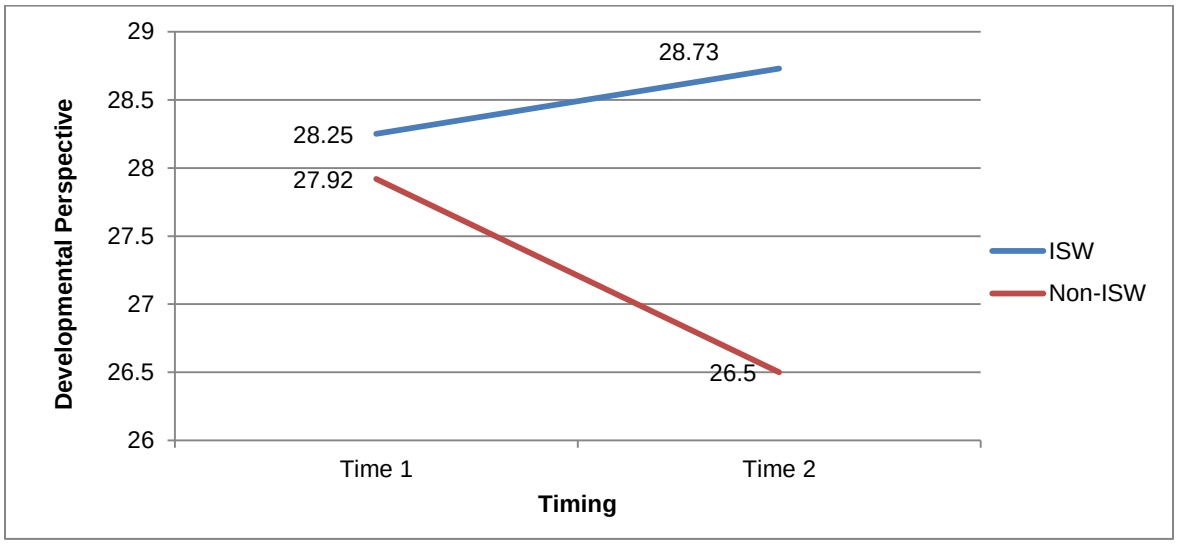


Table 8: Means, Standard Deviations and Significance Tests for the ISW and Non-ISW Groups at Time 1 and Time 2 for the TPI Subscales

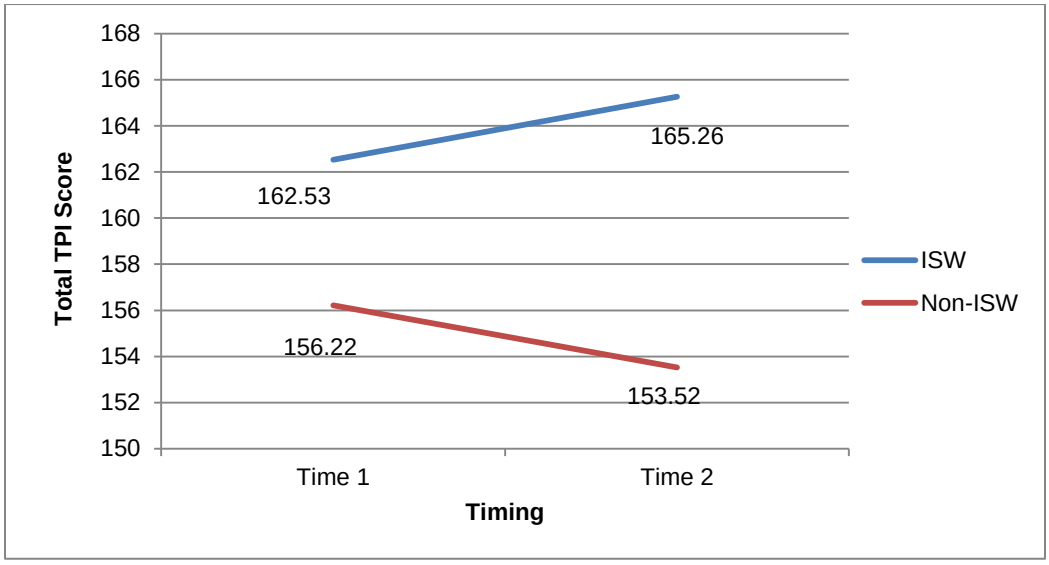
TPI Subscale/Scale	Time 1		Time 2		
	M	***SD***	***M***	***SD***	
Transmission[1]					
ISW Group	29.84 (33.58)	3.680 (4.140)	29.73 (33.45)	3.374 (3.795)	*F*(1,68) = .041, *ns*., partial eta squared = .001
Non-ISW Group	29.40 (33.08)	3.500 (3.938)	29.16 (32.81)	3.693 (4.155)	
Apprenticeship					
ISW Group	34.42	5.602	35.12	4.314	*F*(1,66) = 1.77, *ns*., partial eta squared = .026
Non-ISW Group	33.68	3.591	33.12	4.006	
Developmental[1]					
ISW Group	28.25 (36.32)	3.648 (4.690)	28.73 (36.94)	3.113 (4.003)	*F*(1,66) = 9.27, *p* = .003, partial eta squared = .123
Non-ISW Group	27.92 (35.89)	2.198 (3.752)	26.50 (34.07)	3.990 (5.129)	
Nurturing					
ISW Group	33.35	4.680	33.44	5.030	*F*(1,66) = 1.33, *ns*., partial eta squared = .020
Non-ISW Group	31.20	5.362	30.28	7.021	

TPI Subscale/Scale	Time 1		Time 2		
	M	*SD*	*M*	*SD*	
Social Reform					
ISW Group	27.24	6.816	28.36	6.143	$F(1,67) = 4.06$, $p = .048$, partial eta squared = .057
Non-ISW Group	24.50	6.900	23.75	6.936	
Total TPI					
ISW Group	162.53	16.125	165.26	15.974	$F(1, 55) = 5.92$, $p = .018$, partial eta squared = .097
Non-ISW Group	156.22	15.882	153.52	16.492	

Note. [1] To increase their internal consistency, 8- and 7-item versions of the Transmission and Developmental subscales, respectively, were used for these analyses. To be able to compare the descriptive statistics of these two subscales to the other TPI subscales, each of which is composed of 9 items, the means and standard deviations adjusted to reflect 9-item versions of the two subscales are provided in parentheses below the unadjusted means and standard deviations. The adjusted means are consistent with the means reported by Hubball et al. (2005) for their program participants and the general professoriate.

As can be seen in Figure 3 and Table 8, the ISW and non-ISW groups were not significantly different at Time 1 in terms of the total TPI score [F(1,55) = 2.13, ns., partial eta squared =.037], whereas at Time 2, the ISW group was significantly higher on the Total TPI than their non-ISW counterparts [F(1, 55) = 7.22, p = .010, partial eta squared = .116]. This effect was meaningful, as shown by the moderate to large effect size. At Time 2, ISW participants had a much more integrated belief system about teaching and were more likely to translate that belief system into action than their non-ISW counterparts.

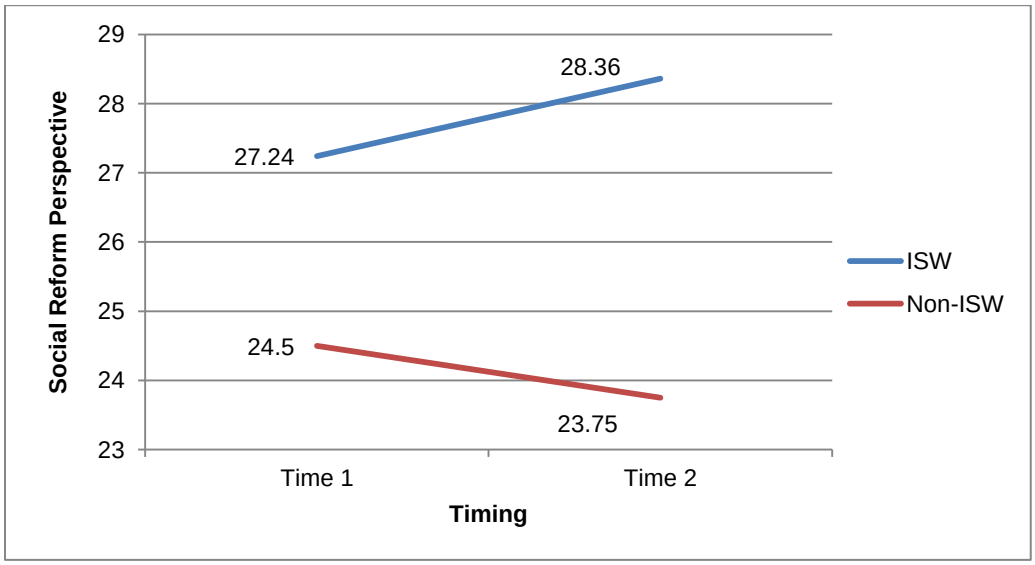
Figure 3: Mean Total Teaching Perspective for the ISW and Non-ISW Groups at Time 1 and Time 2



We identified a trend in favour of the interaction for the Social Reform subscale of the TPI (p = .048, see Table 8) such that the ISW group demonstrated a substantial increase in their view of higher education as a vehicle for social change from Time 1 to Time 2, whereas the non-ISW groups did not (Figure 4). Although the difference was not statistically significant at the conservative standard of significance using a Bonferroni correction, the trend did have a moderate effect size (partial eta squared = .057). This effect size indicates that this shift in focus for the ISW participants was a pronounced change in their teaching philosophy, with an increased emphasis in their teaching on the critical role of postsecondary education in societal change.

There were no significant main effects or trends for Timing of the survey administration for the Transmission, Apprenticeship and Nurturing subscales of the TPI (i.e., for the TPI subscales that did not have significant or trending interactions). That is, research participants (regardless of Group) did not show any substantial change on these three TPI subscales between the administration of the first and second surveys (see Table F4, Appendix F).

Figure 4: Mean Social Reform Perspective on Teaching for the ISW and Non-ISW Groups at Time 1 and Time 2



In terms of main effects for the TPI subscales, a Group trend was evident for the Nurturing subscale (p = .043), with a small to moderate effect size (partial eta squared = .043; see Figure 5 and Table 9). This finding indicates that there was a meaningful difference between the ISW and non-ISW participants, regardless of when the survey was completed. Members of the ISW Group provided a more caring and trusting learning environment for their students than their non-ISW counterparts.

Figure 5: Mean Nurturing Perspective on Teaching for the ISW and Non-ISW Groups

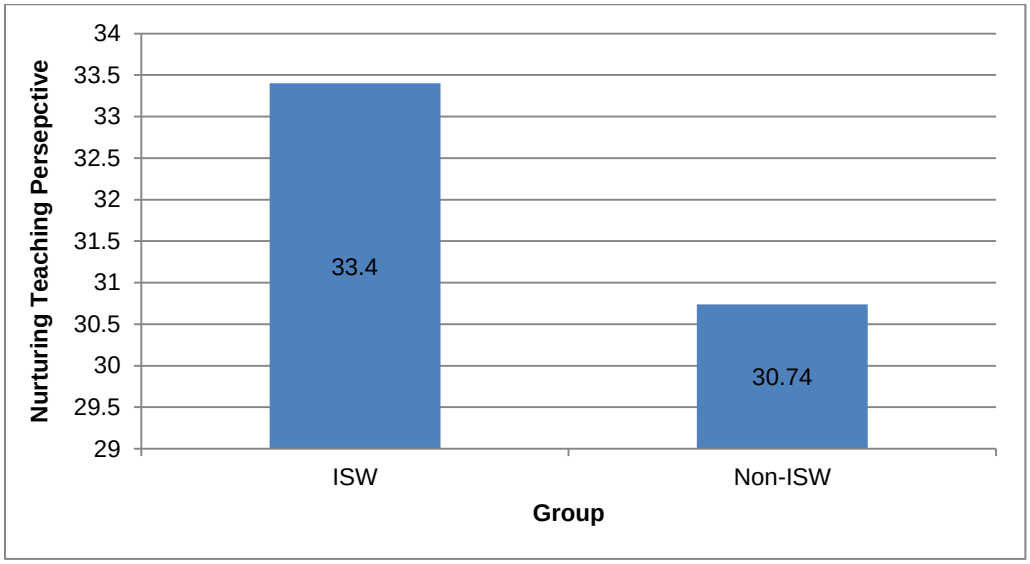


Table 9: Means, Standard Deviations and Significance Tests for the ISW and Non-ISW Groups for the TPI Subscales

TPI Subscale/Scale	ISW		Non-ISW		
	M	***SD***	***M***	***SD***	
Transmission[1]	29.79 (33.51)	3.314 (3.731)	29.28 (32.94)	3.317 (3.731)	*F*(1, 68) = 0.38, *ns*., partial eta squared = . 006
Apprenticeship	34.73	4.437	33.40	3.758	*F*(1, 66) = 1.59, *ns*., partial eta squared = .024
Developmental[1]	28.49 (36.63)	3.171 (4.076)	27.21 (34.98)	3.257 (4.187)	N/A[2]
Nurturing	33.40	4.588	30.74	5.923	*F*(1, 66) = 4.26, *p* = .043, partial eta squared = .043
Social Reform	27.80	6.166	24.13	6.776	N/A[2]
Total TPI Scale	163.90	15.638	154.87	15.458	N/A[2]

Note. [1] Eight- and 7-item versions of the Transmission and Developmental subscales, respectively, were used for these analyses, not the original 9-item versions. To be able to compare the descriptive statistics of these two subscales to the other TPI subscales, each of which is composed of 9 items, the means and standard deviations adjusted to reflect 9-item versions of the two subscales are provided in parentheses below the unadjusted means and standard deviations. [2] When an interaction is evident, main effect differences are not meaningful (Gardner, 2001) and thus are not addressed in detail here. For this analysis, we are applying the same standard to trends.

Following the procedures outlined in Hubball et al. (2005), we also examined patterns of dominance for the five TPI subscales for ISW and non-ISW groups at Time 1 and 2 (Table 10). A dominant subscale is one for which an individual's score on that subscale is one standard deviation above that individual's average score across all the TPI subscales. As can be seen in Table 10, the ISW and non-ISW groups at Time 1 and 2 were

most dominant (highest percentage) on the Developmental subscale of the TPI, with the second highest percentage being on the Apprenticeship subscale. The non-ISW Time 2 group is an exception for which Transmission has become the second most dominant teaching perspective. In terms of changes in dominance patterns from Time 1 to 2, the ISW participants increased in the percentage of participants who predominantly focussed on their students' development, but decreased in those who focussed on having a mentor-apprentice relationship and those who viewed their role as a nurturer to their students. For the non-ISW group, the percentage of teachers who predominantly felt that their role was to transmit knowledge to their students increased from Time 1 to 2, as did the percentage who focussed on their role as a nurturer to their students, whereas the percentage who focussed on their students' development decreased.

Table 10: Patterns of Dominant Teaching Perspectives for the ISW and non-ISW Groups at Time 1 and Time 2 in Percent[1]

TPI Subscale/Scale	ISW		Non-ISW	
	Time 1	Time 2	Time 1	Time 2
Transmission	20.6(7)	20.6(7)	17.4(4)	26.1(6)
Apprenticeship	35.3(12)	20.6(7)	21.7(5)	21.7(5)
Developmental	44.1(15)	50.0(17)	47.8(11)	34.8(8)
Nurturing	17.6(6)	11.8(4)	04.3(1)	13.0(3)
Social Reform	0(0)	2.9(1)	0(0)	0(0)

Note. [1] Participants can have more than one dominant perspective. Numbers in brackets are the number of participants who held this perspective.

6.2 Qualitative Findings

6.2.1 Analysis Plan

A qualitative cross-case analysis was conducted using a combination of variable-oriented and case-oriented strategies (Miles & Huberman, 1994). First, a variable-oriented coding strategy was applied to transcripts using deductive coding (interpretive and descriptive). This involved reviewing transcripts for recurring themes and patterns identified across cases. Themes were sorted into higher-level categories, summarized and checked for consistency. Representative patterns were identified and excerpts were selected. Secondly, an inductive case-oriented replication strategy (Miles & Huberman, 1994) was applied to one transcript to determine if participation in the ISW supported a shift toward more student-centred learning and increased critical reflection. Subsequent transcripts were each reviewed to determine if the initial pattern found matched successive cases, and the pattern was iteratively expanded and refined This inductive process investigated potential shifts in focus group participants' approach to interacting with students, particularly those shifts that might indicate more student-centred and less teacher-focussed or information transmission approaches.

The complete list of questions used in the semi-structured interview process is included in Appendix E. In the following section, we first describe the benefits and direct impact of the program as perceived by participants, then we summarize the main themes that emerged from the focus group data. The four main themes in participant narratives were (1) an increase in reflective practice, (2) a shift towards student-centred approaches to teaching, (3) an increase in participants' developmental teaching perspective, and (4) transformative learning.

6.2.2 Benefits and Impact of ISW Participation

During the focus group interviews, participants were asked to describe what the most beneficial components of the ISW were and how they applied what they learned in the program when they returned to teach in their home disciplines.

6.2.2.1 Supportive, interdisciplinary learning environment

Participants identified the interaction with diverse disciplines and the sense of community as one of the unexpected benefits of being in the ISW. A number of participants said they were pleased to have an opportunity to discuss teaching in detail with peers – an opportunity they rarely experienced in their work setting. Participants noted that when they first started teaching, they often felt that they were expected to already possess the requisite teaching skills and generally could not discuss what they did not know with peers in their disciplines. However, they found that the ISW environment was supportive, comfortable, and felt like a safe setting to try out new teaching interactions. They felt that the environment facilitated their learning. One participant said the workshop format modelled how to teach effectively:

> *I learned a lot. I learned different things that I can be more conscious of in the classroom setting; that it's not just about lecturing it's about how we can get students involved. I think most of us know we should do that, but we don't really know how to do that. I learned, obviously, from all the instructors who were there teaching, but also from the little groups that we formed, and having the opportunity to practice some of the techniques that we learned, and, obviously, getting feedback from the groups that we were in.*

6.2.2.2 BOPPPS framework

Participants reported that after taking the workshop, they were better at managing time when preparing for class and during class time itself by applying the BOPPPS structure. Participants described applying all six elements of the BOPPPS framework (i.e., bridge, objectives, pre-test, post-test, participation and summary) in all lesson plans, applying selected elements in lesson plans, and/or developing a variation of the BOPPPS framework appropriate for different contexts. A participant described how BOPPPS helped them reflect on their teaching practice:

> *…it made me think about the clarity of communication, and it made me think of how clearly I can explain. The way I'm explaining the material and the way I structure the class is to have a pre-test, post-test. If I have the actual participation and the presentation of the material, is it really the easiest or can it be broken down even more. I think with the pre-test that I've included, and a post-test, and the way I structure in the discussion that I realised, okay, maybe here, we can include a discussion. Or this would be really good for just yes and no questions, and the yes and no with the clickers [system for soliciting student responses]. So I can clearly see what activity could go with which topic.*

Participants reported that they attempted to apply some or all of the BOPPPS framework to new and various teaching contexts. They commented that students reacted positively as they became more familiar with the model and found that the teachers' expectations were clearer. One participant said that if they forgot to summarize the lesson, the students would remind them to do so.

6.2.2.3 Adopting student engagement and facilitation techniques in ISW

Participants also commented on incorporating not just the BOPPPS model into their teaching, but also a number of student engagement techniques that were used by the facilitators. For example, during the ISW, facilitators sit in circles with participants during feedback sessions, move the furniture to suit a planned activity, ask the participants about what could be done differently that would help them to learn better and model other student-teacher interactions. While not specifically coached to do so, participants described their efforts to incorporate these kinds of elements into their teaching. Participants mentioned that, prior to the ISW, they knew they should be engaging students but did not know how to do so. This should not be surprising, since the majority of postsecondary instructors are not formally trained to teach, but this reveals an unspoken expectation that students should be actively engaged in learning.

Participants frequently mentioned the successful implementation of techniques to increase student engagement in classes. Teaching practices described by participants included story telling, increased use of visuals, discussion and case studies. Some explicitly described these practices replacing the lecture format of information transmission. One participant commented:

> *This past semester, I used a lot of the things like the 'think, pair, share', a lot of the mind mapping kind of stuff,… that really seemed to engage them, and to get them to start to think about whatever concept we were talking about and to also gave them a visual of it, where normally I would just yap, put up a PowerPoint, and then tell them you have to discuss this online.*

Some participants reported that the benefits of engaging students were more obvious after taking the ISW and, as a result, they had modified their classroom practices:

> *What was proven to me… is that I needed to actively engage students…the active learning strategies were things I was trying… to integrate into every class.*

> *I didn't realize how many little techniques we can use to get people involved, and certainly we got a list of all the activities we can do... something as simple as that [think, pair, share]. I probably didn't even use until I took the workshop, and I use that in my class all the time now.*

6.2.3 Increased Reflective Practice

We hypothesized that when instructors begin to reflect on the impact of their teaching on student learning, they would begin to engage in more student-centred practices. The ISW introduces self-reflection, which is then integrated at multiple points and in a variety of formats throughout the workshop. Learning begins with an individual's prior experiences and incorporates dialogue with the self and others. Reflection may involve critical examination of personal assumptions, values, beliefs and teaching practices. We identified three forms of reflection in the participants' comments: 1) reflecting on one's own assumptions; 2) encouraging students to reflect; and 3) embracing feedback – reflecting on the reflections of others.

The first form of reflection involves *examining one's personal assumptions* about teaching and learning. This questioning of assumptions is an important precursor to changing practice (Mezirow & Taylor, 2009).

> *[The ISW] made me think about the things that I do differently and whether I'm doing them out of habit or…consciously*.

In addition, participants described the importance of *encouraging students to reflect* in order to deepen learning. One participant made the distinction between simply teaching course content and challenging students to engage in deeper learning:

> *It was hard for me to see that in the beginning of the course, but I found that I became more clear with how I formulate questions, so that they trigger reflection rather than just the answer… so for example, if they give me an answer and I say, well, why is this not true, and this is always in the outcome of every class, that I say, whatever you're learning, you have to know the why part. The first couple of classes in this course I told them that the first thing will be just learning the content, learning the material. But I told them that you always have to keep that thing in mind, that there is always a reason for things happening, there's always a why, and just keep this in mind and that's where we are going.*

Reflecting on the reflections of others – in other words, embracing feedback – constitutes a third type of reflection. Critical reflection and constructive feedback are key features of the ISW framework. Feedback is provided at multiple points and in a variety of formats throughout the program. Feedback was frequently cited as a workshop benefit. Participants felt reassured and supported by the opportunity for feedback immediately following their presentation. Many described personal challenges and being encouraged to take risks and reflect on teaching within this comfortable community of learners. Participants commented on the value of peer responses to their teaching and how they embraced this feedback:

> *…for me, it was the feedback from my peers, and then the ability to go home, after you've done your teaching for that day, and be able to actually see it, because our (lessons) were recorded. So, our facilitator did a video of them, so you were able to go back and watch yourself, self-reflect, and get feedback from your peers at the same time. So, that was really beneficial for me, and the way that they structured the feedback; the positive, negative, positive model.*

> *The feedback that you guys gave me as a storyteller. I didn't know I was a storyteller. I had no idea… so I'm doing more of that, I'm doing more story lead-ins and they're powerful, they really are… So the thing is, is that the feedback was empowering.*

6.2.4 Shift towards Student-Centred Approaches to Teaching

It was hypothesized that as a result of participating in the ISW, participants would become less information transmission/teacher-focussed (ITTF) and more conceptual change/student-focussed (CCSF) in comparison to the control group from Time 1 to Time 2. Transcript analysis revealed shifts towards a student-focussed approach to teaching. These shifts included: (1) thinking more about what students need in order to learn; (2) planning and applying more learning experiences to actively engage students; and (3) soliciting feedback from students in order to ensure that they are achieving the intended learning outcomes.

Participants perceived their role as teachers differently after taking the ISW. Specifically, they described being more focussed on students' needs. Some attributed this increased awareness and the ability to monitor student readiness and progress to the implementation of the BOPPPS framework:

> *It makes me think more about what I want students to get out of my course.*

> *I'm much more aware of where the students are and how they're experiencing the content of what I'm teaching them.*

> *In university, there's not a lot of emphasis on looking at how you actually teach, and are you meeting those students' needs in teaching? I think it's important, and I thought it was really a challenge when I was here.*

As hypothesized, participants commented that they had a better understanding of students as learners. This means that they have begun the shift from conceiving of teaching as a delivery of learning to providing conditions that make student learning possible.

It was further hypothesized that as a result of participating in reflective practice in the ISW, participants would become less information transmission/teacher-focussed in their approach. As expected, participants reported that their understanding of the importance of engaging students changed as a result of the ISW. This means that their reflection on the role of teaching and the experience has led them to accept the value of a more student-focussed approach. One example of a shift away from transmission is captured in the following reflection on planning experiences to actively engage students:

> *I think I became more student-centred… I found the more I focus on students – and today we had a really good discussion but we just covered one-fifth of what I thought we would cover – I found that when it's more student-centred, then we go for the quality rather than quantity, but when it's more teacher-centred, it's quantity maybe over quality… We do problem sets, so I look at the problem, offer a solution... I thought, we'll just look at one instead of four or five, and me giving them answers. So I'll just ask them what the steps would be for them.*

This type of comment demonstrates both reflection on active engagement and the result of putting these ideas into practice – it supports the shift away from information transmission towards a student-centred approach by explicitly changing classroom practices to increase the number of active learning activities to engage students. Participants thought more about their class planning and made a conscious effort to frame questions for students to go beyond simple answers, they began to integrate visuals, media and other materials to facilitate active learning as promoted in the ISW. Typical responses included the following:

> *One of the things I started doing, is using a lot of visuals, books and… art.*

> *I've used group work, I've used also some sort of discussion and a game.*

A third type of shift towards a student-centred approach consisted of soliciting feedback from students to determine if they are achieving the intended learning outcomes. More than one individual felt that the feedback they received during the ISW was so valuable that they made student feedback an integral part of their own teaching practices.

> *I talked to my students and am getting more feedback from them. And I asked them, how could you see things being done differently?*

> *For me, the feedback from our workshop was huge, it just made such a big difference. And, you had to hear it right away, before we went in to perform the next time (before delivering the next lesson incorporating feedback provided). And, so when students hand in their work, I have a personal policy that they will have my feedback prior to their next assignment. It has meant some late nights for me, but that's my personal (feeling)… and I do it… especially in writing courses, the communication courses. How can you present and then not receive feedback?… we weren't told in our workshop to always give the students feedback, but it's something I personally absorbed, how important feedback was.*

Soliciting feedback also extended to improving communication between students and instructors regarding the impact of their teaching practice. Participants reported increasing the frequency of requests for student feedback in order to improve their teaching practice and recognized that students provide valuable insights regarding the effectiveness of the learning experience to refine future practice:

> *I think before I was mainly focussed on me… but now I definitely think of teaching more as a two-way street, so I rely on my students. To get feedback from them, so I can figure out how I can teach this better the next time, or what do they need from me in order for them to be successful? So I really think of it more as a process we move in together, not so much about me. How can I improve the student experience…*

6.2.4.1 Changes in Teaching Perspectives

An increase in the Developmental perspective was expected from Time 1 to Time 2, indicating an increased focus on the learner's point of view. As described in the previous section, transcripts include many comments indicating a shift towards thinking about learning from a student perspective, planning and carrying out activities to engage students, and valuing student feedback. The changes in teaching practices described above demonstrate that participants are shifting away from an understanding of teaching as primarily involving the preparation and delivery/transmission of information towards practices that are in line with the Developmental perspective. For example:

> *…it's made me try to think of that portion of the class that's absolutely engaged. What about the portion that's just not, and how do I reach them, and what does that look like? And how do you strike a balance in being fair to the people who want to participate and get marks for participating and the ones who you want to try and draw out a little bit more, without sacrificing the people who really do have that commitment to reading the text and bringing their learning in?*

> *[BOPPPS] changed the way I present the material and the way I word, and the order of the things, what goes first, what goes second. I think it also gave me something to respond to, in the sense of when I see that they're not there yet, then I just stop, I find a point where I say, okay, we'll stop right here but we'll go into more detail next time. I think you just don't have the right knowledge for now.*

Pratt (1998) describe a nurturing perspective as coming from the heart, involving a learning community with teacher and peer support, and the setting of challenging, clear and achievable goals, as well as a variety of other characteristics. While many participants commented on peer support as part of the ISW framework, as well as the setting of clear and challenging learning goals, it is not clear whether changes in participants could be described as having an increased nurturing approach to teaching.

6.2.5 Transformative Learning

The ISW relies on three fundamental elements of transformative learning: 1) individual experience; 2) opportunities for critical reflection; and 3) dialogue with the self and others (Mezirow & Taylor, 2009) as means of asking participants to consider the impact of their teaching methods on student learning. Here, the comments by participants in the focus groups and interviews suggest that transformative learning occurred as a direct result of participation in the ISW. That is, participants were able to articulate clearly how their teaching methods affected student learning.

6.2.5.1 Individual experience

The first core element of transformative learning is the importance of individual experience. Transformative learning experiences build on participants' previous experiences and are the basis for dialogue about previously unarticulated assumptions, value judgments, or beliefs – in the case of ISW, about teaching, learning and roles of the student and the instructor (Mezirow & Taylor, 2009). The purpose of the ISW is to help individuals become conscious of their teaching choices and to enhance their teaching practices and, therefore, to facilitate the growth of the individual. While the focus is primarily on teaching skills, feedback and discussion help to reveal unexpected strengths and can help individuals work through assumptions and validate beliefs about teaching. The comment below illustrates reflection at the level of the individual:

> *I need to do some thinking in terms of what being a teacher means and the whole value portion of that. And, I hadn't really thought about that before the course.*

6.2.5.2 Critical reflection

A second core element of transformative learning involves critical reflection of conflicting thoughts, feelings and actions (Mezirow & Taylor, 2009). Critical reflection during the ISW is built into group discussions on approaches to teaching. Participants describe being faced in the ISW with ideas and practices about teaching and learning that may clash with their own:

> *It [the ISW] definitely was worth it. I think that's just a process of shedding some of your assumptions and thinking about how you do things. It's a very painful process, but I did think it was useful.*

> *I had this impression, this struggle coming into those sessions, thinking about myself as an authority at the front of the class. I felt really uncomfortable about that.… I think it worked, that I transitioned from worrying about (being) an authority at the front of the class… the model introduced in the workshop is very much about the instructor being an enabler… and, I think that helped me let go of this anxiety about authority… after that, I just started teaching, teaching, teaching… I realized that in all the sessions I had done, I had already made that shift. I internalized it, and I was no longer going into the class with the same kind of anxiety.*

6.2.5.3 Dialogue with the self and others

The third element of transformative learning is dialogue with the self and others (Mezirow & Taylor, 2009). Discussion is built into the workshop; ISW participants are asked to reflect critically on their teaching, to share their reflections and reactions to new teaching ideas and experiences, and to respond to the comments of fellow participants. One participant commented they appreciated:

> *…having the opportunity to reflect with other teachers, and not just get support but the giving of support to other instructors who may be new. They had a couple that were brand new and had not taught, so it was nice to feel that I could support them.*

In sum, participants' comments provide strong support for the core elements of transformative learning. The tone of comments also suggests a deep level of engagement, a serious consideration of the feedback from other participants, and learning attributed to dialogue and interaction.

7.0 Discussion

7.1 Summary of Findings

This study sought to evaluate the impact of the ISW on approaches to teaching. We hypothesized that instructors who participated in the ISW would become less teacher-focussed and more student-centred in their approaches to teaching relative to faculty members who did not participate in the program. Furthermore, we predicted that ISW participants would shift away from a teaching-centred perspective, such as Pratt's (1998) Transmission, and shift towards more student-centred perspectives, such as Developmental and Nurturing. Finally, we hypothesized that we would see evidence of reflective practice, a key element of transformative learning, among the ISW participants.

These hypotheses were partially supported. As predicted, faculty members who participated in the ISW program decreased their emphasis on information transmission in their approach to teaching and were less teacher-focussed when assessed four months after the program ended. This was evident in both the quantitative results and the focus group/interview data. A similar change was not evident among their non-ISW counterparts. These results support the findings of Cassidy and Ahmad (2013) and are particularly meaningful given that Postareff et al. (2007) suggest that a teacher-focussed approach to teaching is very stable and quite hard to change.

The hypothesis that ISW participants would become more student-centred was only partially supported. Although there was no significant shift towards a more student-centred approach to teaching among ISW participants in the quantitative analysis, there was evidence in the qualitative analysis to suggest that participants increased in student-centred teaching practices. Furthermore, they attributed this change to their ISW participation. By the time of the interviews, many of the participants had the opportunity to implement the ideas presented in the ISW. One reason this emerged in the qualitative but not the quantitative findings may be the result of the differences in the timing of the data collections. Generally, the post-program survey was conducted within four months of the ISW program, whereas the focus groups and interviews were often much later (up to one year after the ISW). This delay may have allowed ISW participants to reflect more deeply on their teaching practices, resulting in a shift in their approach. This shift in focus is likely a result of the student-centred BOPPPS framework for lesson preparation introduced in the ISW. The comments made by ISW participants suggested that they had internalized all or parts of this framework into their teaching and were now taking a more student-centred approach to teaching in the classroom. They often explicitly mentioned the BOPPPS framework as one of the major lessons learned as a result of participating in the ISW. Again, this is a particularly important shift for instructors to make, as student-centred instruction tends to lead to deep student learning (Entwistle, 2010).

In terms of faculty members' perspectives on teaching as measured by the TPI, the non-ISW participants unexpectedly decreased in their Developmental perspective within the four months of the study. As Pratt (1998) states, the Developmental perspective requires a particularly student-centred focus on teaching, as the role of the instructor is to help scaffold learning for the student with the goal of increasing their critical thinking and problem-solving abilities. This is a challenging role for instructors, particularly new instructors, to adopt. The fact that non-ISW participants significantly decreased on the Developmental subscale over the four months of the research study is troubling as it suggests that if instructors are left to their own devices, they may in fact decrease in their performance of behaviours known to be important for deep student learning to occur.

Significantly, the ISW participants did not show a similar decline in this teaching perspective after four months. Although at Time 1 both ISW and non-ISW participants held a similar dominant Developmental perspective on teaching (44 and 48% respectively), by Time 2, less than 35% of non-ISW participants had a dominant Developmental student-centred perspective on teaching. At Time 2 for the non-ISW group the second most common dominant perspective changed from being Apprenticeship to being Transmission. This finding supports Gibbs and Coffey's (2004) hypothesis that without training instructors may become more teacher-focussed in their teaching. In contrast, Developmental was the dominant perspective for 50% of ISW participants at Time 2, with the second most common dominant perspective being Apprenticeship. The emphasis on student-centred teaching within the ISW may enable instructors to maintain this perspective over time.

The ISW helps to increase instructors' skills and knowledge, and one unanticipated consequence may be to give them the confidence to sustain their beliefs on student-centred learning even when challenged by the realities of the classroom experience. In this study, over 50% of ISW participants would be regarded as novices, with four years or less teaching experience; therefore, it seems that simply maintaining their student-centred beliefs is important. This is particularly important since researchers such as Postareff et al. (2007) have found that those participating in educational development program of less than one year were likely to decrease rather than increase in the student-centred dimension. They state that "shorter training seems to make teachers more uncertain about themselves as teachers." Although the ISW is a comparatively short program, it appears to help participants remain committed to their student-centred practices.

Neither the ISW nor the non-ISW participants shifted over the four months in their Transmission, Apprenticeship or Nurturing orientations to teaching as measured by the TPI. Surprisingly, over the course of the program, ISW participants showed a meaningful increase in their orientation towards the Social Reform perspective (i.e., more focussed on teaching as a means of social reform). Although teaching as a mechanism for social reform is not a topic addressed in the ISW or a proposed outcome of the program, reflection on teaching generally and on one's own teaching more specifically might foster an increased emphasis on social reform. Further investigation of this shift in teaching perspective is necessary to understand more fully the role of ISW in developing a focus on teaching as a mechanism for social reform.

Finally, as predicted, ISW participants commented frequently in the focus groups and interviews on the value of reflection both within themselves and in dialogues with others. They reflected on their own assumptions and beliefs, on the role of the teacher, the values promoted in teaching and new ways of thinking about and interacting with students. Participants' comments suggest deeper levels of learning that match the criteria marking transformative learning as defined by Mezirow and Taylor (2009). This result also supports the findings of Macpherson's (2011) research and suggests the critical role the ISW can play in leading to transformative learning in participants. In addition, this result also suggests why the overall total score on the TPI was significantly greater for ISW than non-ISW participants. As Hubball et al. (2005) state, it is through the critical reflection on their own teaching that individuals feel more confident in acting on their own beliefs and actions, which lead them to endorse more strongly the items in the inventory with which they agree. Our results support the previous research of Hubball and his colleagues in finding increased total TPI scores for educational development program participants.

7.2 Implications

There are several important implications of the current research. First, it is significant that ISW participants became less teacher-focussed, as we know that this approach tends to lead to students taking a surface approach to their own learning (Entwistle, 2010). As Biggs and Tang (2007) suggest, the emphasis in a teacher-focussed class is on coverage of material rather than meaningfully engaging students in their own learning. This superficial emphasis is often paralleled in other aspects of the course. For example, the

assessments in teacher-focussed classes do not tend to tap into deep forms of learning and meaningful understandings of concepts or terms, but focus on assessment of more superficial learning which, as a result, causes students to take a surface-based approach to their learning (Biggs & Tang, 2007). A shift away from teacher-focussed practices is critical for instructors and, ultimately, for their students' learning.

The lack of shift towards a more student-centred approach to teaching in the survey data is perhaps not that surprising. It may take longer than four months for this change to take place. Student-centred approaches require that instructors engage in more risk-taking behaviour, such as engaging in active learning techniques, and it may take more than four months to see a significant shift in instructors' approaches to teaching. As many of the ISW participants in the current study had limited teaching experience, it may be understandable that they were less willing to engage with teaching methods which they felt provided them with less control over their classroom. Outcomes of active learning techniques are not as certain as lecturing, which may make their use unnerving to novice instructors. By contrast, interviews and focus groups five to 12 months after the ISW did provide evidence of a shift occurring towards a more student-centred orientation. Participants provided numerous comments describing a shift towards a student focus in terms of their design of instruction from a learner perspective, increased student engagement in class, a change in how they think about students, and valuing student feedback.

Few if any studies in Canada have been conducted that examine the impact of educational development programs on both university and community college faculty. Although the perception may be that these two groups of faculty differ substantially (i.e., university instructors are typically hired to teach and do research, whereas their college counterparts are hired only to teach), it was interesting that there were no substantive differences between these two groups in terms of their teaching approaches and perspectives. The only difference evident was that before the ISW program, college faculty were more likely to be teacher-focussed than their university peers. However, this difference was not evident four months after they completed the ISW program.

Although these analyses were intended to serve as a simple statistical check before aggregating the university and college data to maximize the sample size, they raise important issues to consider. Specifically, as the percentage of faculty that are hired to teach but not do research continues to expand at universities, the perception of difference between university and college faculty seems increasingly irrelevant. It is evident from the results that it is critical to provide faculty, regardless of their institution type, with the opportunities to engage in reflective practice on their own teaching, a process at the heart of the ISW, if we want them to be less teacher-focussed. Follow-up research measuring the impact on their approaches to teaching one year after completing the ISW may yet yield significant quantitative changes in this dimension, along with the qualitative changes seen in the current study.

This study fuels the debate over the required length of program likely to have an impact on instructors' approaches to teaching. It is evident, particularly from the qualitative analyses, that this short, intense program influenced teacher beliefs and behaviours in the classroom, shifting them towards a student-centred focus. Given the relatively low cost and compact time frame of the ISW in comparison to programs of longer duration, perhaps we should heed the ISW participants who advocate the ISW as mandatory training for new faculty. Currently, the ISW is offered at virtually every college and university in the province of British Columbia (Macpherson, 2011). And further, many elements of the ISW can now be found embedded in the BC Provincial Instructor Diploma program offered through Vancouver Community College. At the very least, instructors should be encouraged and rewarded for participating in such programs. Some have suggested that mandatory training may have a negative motivational effect on instructors (Parsons et al., 2013); nevertheless, considering mandatory programs for graduate students preparing for an academic career may be advisable given the negative impact that a lack of such training can have on student learning.

It is also important to note that this is one of the few studies of educational development programs to include both pre- and post-study analyses and a control group for comparison. Another strength of the present study is our use of the Bonferroni correction, which requires a higher threshold for results to be deemed significant and therefore provides more confidence in the importance of our statistical findings.

Finally, we reported two trends, findings that did not meet the conservative standard of significance we employed but would have met the standard level of significance ($p < .05$), both of which had medium effect sizes. Based on these effect sizes we can conclude that there were meaningful increases in ISW participants' emphasis on higher education as a vehicle for societal change (Social Reform) over the course of the program. In addition, the ISW group placed more emphasis on a caring and trusting learning environment for their students (Nurturing Perspective on Teaching) regardless of when the survey was completed. This finding suggests that there is an important general difference between the ISW and non-ISW participants. As indicated above, these differences are consequential and warrant investigation in future research.

7.3 Limitations

Though our reading of the literature suggests that this study is the most extensive empirical investigation to date of the impact of the ISW on educational development, as with all research, its conclusions must be considered in light of its limitations. The ISW is a voluntary, three-day intensive program designed to further faculty members' development as reflective teachers. Participants who choose to sign up for an ISW may differ from the general pool of faculty members. Although a comparable control group was employed, characteristics not identified could limit the generalizability of findings. Limits to the generalizability of the findings could also be possible as a consequence of the self-selection of the research participants. This could conceivably be more of an issue for the non-ISW participants, as this group consists of only a small subset of the large number of faculty members invited to participate in the research whereas, as outlined in Section 5.2, there were high participation rates in the research for the ISW group. It is possible that the non-ISW group might not be representative of all faculty members at the respective institutions, even though there was broad representation of faculty members from across the disciplines and considerable diversity in teaching backgrounds.

Although this is the largest study of ISW participants to date, comparisons across the ISW and non-ISW groups must be made with some caution as it was not possible, given the number of participants, to match completely the ISW and non-ISW respondents. For example, 55% of the non-ISW group at the universities were tenured or tenure track, whereas only 17% of the ISW group at those institutions held similar positions. Without matching, it is conceivable that these characteristics may complicate the findings. The implications, if any, of these differences on respondents' approaches to teaching are unclear, but research in which ISW participants can be matched with control group participants on key characteristics would be desirable in order to better control potentially relevant characteristics.

A difference we did note in the present study was an overall trend for ISW participants to have a more nurturing teaching orientation than their non-ISW counterparts. It is possible that the nature of the ISW program may attract faculty members who are more nurturing and, therefore, already student-centred in their approach to teaching. Specifically, it may be the reflective nature of the program that attracts individuals who are more inclined to be nurturing to participate. If those who are less inclined to be reflective are less likely to participate in programs that emphasize reflection, like the ISW, this result again suggests that we may need to consider what incentives would encourage faculty to participate in educational development programs.

Another limitation of the present study may have been our use of the TPI to measure changes in teaching perspectives from teacher-focussed to more student-centred. Collins and Pratt (2011) believe that all five teaching perspectives are valid and that there is no need to expect all instructors to take a student-centred

approach, with some perspectives being better matched to some teaching contexts than to others. However, it can be seen that four of five of their approaches take a student-centred approach to teaching to some degree (Pratt, 1998), and they also advise those who teach from the Transmission perspective to alter their strategy by covering less material and engaging in active learning. These activities may reduce the dominance of the Transmission perspective or may eventually lead instructors to switching teaching perspectives.

While the TPI may be useful for instructors to develop a sense of their preferred orientations to teaching, it does not appear to be as useful for identifying shifts in teaching perspectives as a result of participating in the ISW. After Time 2, an analysis of descriptions for each teaching perspective yielded an interesting finding. Embedded in almost all of the descriptions were elements of the BOPPPS framework. In short, the participants who applied all or part of the framework (bridge, objectives, pre-test, participatory learning, post-test, summary) would theoretically increase in measures of four out of the five perspectives. Only the Social Reform perspective does not explicitly address elements of BOPPPS. Interestingly, however, Social Reform primarily focuses on critical reflection – another important component of the ISW. Thus, it is not surprising that ISW participants' total TPI scores were significantly higher than non-ISW participants at the time of the post-program survey.

7.4 Future Research

Although this study has its limitations, it also advanced the research on the ISW considerably by moving beyond satisfaction data (Level 1 of Kirkpatrick, 1998) to examining changes in faculty approaches to teaching by comparing pre-post data on participants' orientation to teaching and by interviewing participants to assess what learning occurred five to 12 months after the workshop (Level 2 of Kirkpatrick). Effective evaluation of program effectiveness requires moving to the higher levels of Kirkpatrick's model of program evaluation and assessing changes in participants' behaviours and learning as a result of the program. As Kirkpatrick and Kirkpatrick (2007) suggest, it can be difficult to know how much time needs to elapse between learning the theory behind the skills in the workshop setting and performing them in class. Instructors may require a year or more to implement fully the workshop goals into their teaching. As Postareff et al. (2007) suggest, changing instructors' conceptions of teaching occurs slowly. They also indicate that it is not clear whether individuals need to change their approach to teaching conceptually first before they begin to make changes to their behaviour. While we did not see significant statistical shifts in ISW participants' approaches to teaching, in the interviews participants reported adopting student-centred teaching approaches in the classroom. It is possible that the survey instrument may not be sensitive to subtle changes in teaching approaches, or perhaps instructors did not consistently apply new behaviours. It may be useful to determine in subsequent research how consistently the changes participants report are actually occurring in the classroom. Interestingly, Stes and Van Petegem (2012) found that instructors were more likely to adopt student-centred approaches to teaching if colleagues and students met those teaching methods with enthusiasm. Again, this suggests that instructors need to be encouraged and rewarded for adopting new teaching methods in order for a sustainable change to occur. Clearly, it would be important to follow up with our participants several years after the workshop to determine the true impact of the ISW on teaching behaviours.

In examining the real classroom impact of the ISW, the addition of pre-post experimental and control groups would be ideal. Stes and Van Petegem (2012) suggest that it is important to move beyond self-report data of change to measuring behavioural changes in the classroom. However, given the difficulties in recruiting control participants to the current study and to other studies of educational development (Gibbs & Coffey, 2004; Stes et al., 2010), it might be quite difficult to get individuals who do not normally participate in our workshops to allow us access to their classes. Nonetheless, this ideal should be pursued in future studies.

Research by Prosser (2010) and Collins and Pratt (2011) both suggest that disciplines influence the approach faculty take to their teaching. Unfortunately, given the wide variety of disciplines of our faculty, this could not be explored in the current study. However, this is of particular interest, as a "one size fits all" approach to teaching seems unlikely to be effective given the variety of contexts within which our college and university instructors teach.

Measures beyond the ATI and the TPI may also need to be used in order to understand fully the impact of instructor participation in the ISW, particularly if we want to assess transformative learning. For instance, many individuals spoke in the focus groups and interviews about an increased confidence felt upon entering the classroom after completing the ISW. Postareff et al. (2007) also found that participants in their program spoke about becoming more self-confident as a result of the pedagogical training. Other evidence of increased confidence can be seen in the significant increase in ISW participants' overall TPI score. Again, this increase in scores suggests, according to Hubball et al. (2005), that individuals are more likely to engage in actions that reflect their beliefs about teaching after taking the ISW. This suggests that they have more confidence in themselves as teachers. Given the role that self-efficacy plays in increasing teachers' use of productive teaching strategies (Parsons et al., 2013; Postareff et al., 2007), this may be an important attribute to assess in future research on the ISW. Instruments such as the Teacher's Sense of Self-Efficacy, developed at Ohio State University, might be employed in such studies (Tschannen-Moran & Woolfolk Hoy, 2001).

Others, such as Stes and Van Petegem (2012), have suggested that teacher characteristics need to be investigated to determine the impact of educational development programs on instructors. Individual differences need to be considered when evaluating a program's impact. In addition, the results of the Postareff et al. (2007) study also suggest that it is important to encourage ISW participants to continue to engage in educational development programs, because those faculty who continued with their teacher training after taking an initial educational development course were the most likely to become more student-centred in their teaching. Those instructors who seem to excel at incorporating the BOPPPS framework and engaging in reflective practice are the kind of faculty who go on to complete the five-day Facilitators Development Workshop and become ISW facilitators. It would be particularly interesting to investigate the impact of becoming a facilitator on participants' classroom teaching. Teacher development, like most types of learning, requires reinforcement and renewal to be truly effective. Finally, other aspects of the ISW need to be investigated, such as the difference between a peer-led and an expert model educational development program.

7.5 Conclusions

This has been the largest study conducted to date on the Instructional Skills Workshop. As such, it makes a significant contribution to broadening the literature on educational development in Canada. The results suggest that we need to examine further the longer-term influence of participating in the workshop on instructors' real behaviour in the classroom. As a measure of student-centred approach to teaching, the ATI appears to hold more promise than the TPI for future studies, particularly if the period between the first and second time we administer the instrument were to be expanded. The data collected from the focus groups and interviews clearly suggest that instructors were developing a student-centred approach to teaching and that participating in the ISW led to transformative learning among the instructors. Perhaps more opportunities to practice the teaching strategies discussed in the ISW and more opportunities for reflection are needed before we could expect to see a significant impact on instructors' student-centred scores in measures like the ATI. Finally, the discovery that, without intervention, instructors became less student-centred, as measured by

the Developmental perspective of the TPI, also merits further research. Experience alone does not necessarily lead to instructors becoming more student-centred in their teaching approaches.

One unanticipated consequence of participation in the ISW was the impact on campus climate. Many participants talked about how being part of the ISW helped them to get to know colleagues across campus who they would never have met under normal circumstances, and made them feel a part of the larger community. Again, finding ways to positively influence the campus climate is important given the rapid expansion of postsecondary education in Ontario. With the present focus on deep learning in the Ontario postsecondary system, the integration of the ISW into educational development across the province appears to offer a fairly low-cost opportunity to enhance the teaching skills of our college and university faculty.

8.0 References

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