Exploring the experiences of faculty-led teams in conducting SFU Teaching and Learning Development Grant projects

by

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Abstract

Action research has been suggested as a useful way to support university faculty to improve teaching and learning. However, there seems to be little knowledge about how faculty (and other team members) experience the process of doing action research in a comprehensive way. In order to explore team members' in-depth experience about what they learned and how they experienced conducting action research, this study investigated and documented two action research project teams that were supported through an initiative at Simon Fraser University, the Teaching and Learning Development Grant program (TLDG). Using case study methodology, multiple types of data were collected and analyzed through an iterative process. The results showed that all the team members perceived they had developed professional knowledge through participating in the projects. Most team members perceived a positive experience of teamwork as well as a satisfied experience in conducting action research. A few challenges and suggestions were also reported.

Key words: Action research; case study; faculty professional development; scholarship of teaching and learning; teaching and learning development; higher education pedagogy

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1. Introduction

1.1. Background

Higher education has undergone rapid change in the past few decades. Features of that change are a rapid expansion in student numbers and a growing demand for external assessment of "quality" (Blackwell, Channell & Williams, 2001). Teaching quality and student learning outcomes are one area that has become the focus of intense scrutiny and review over the years. One response has been that more and more faculty members in higher education are involved in exploring questions about teaching and learning, either by involvement in teaching and learning development activities supported by university level initiatives, or by conducting individual teaching and learning inquiry projects. There are many terms to describe this type of activity; the most common ones are *action research* and the *scholarship of teaching and learning*. In this thesis, I use the term *action research* to describe projects in which faculty systematically investigate some aspect of their teaching and student learning.

The potential role action research plays in supporting teaching and learning in higher education has been advocated by some researchers. For example, Norton (2009) stated that when our students are not learning or performing well, it is too easy to blame the rapidly changing higher education context or fewer resources. Norton continues to argue that "However true these pressures may be, they do not help to move us on in improving our teaching and assessment practice so that our students have a better and more satisfying learning experience…… each of us will have identified some aspect of our students' learning that we would like to change" (p. 2). In this regard, one of the effective ways to improve teaching and learning is to provide chances for teachers to be researchers of their own teaching practice; to identify some aspect of student learning that they want to investigate. It can be argued that by doing action research, faculty in higher education are able to improve their pedagogical practice and thus improve students' learning. Kember and Gow (1992) suggested that it makes sense that

1

action research would attract adherents in higher education because teachers in higher education have "traditionally enjoyed high levels of autonomy over curriculum development" (p. 300) and therefore, could easily implement revisions based on the findings of their action research projects. There is also empirical support for action research. For example, Kember (2002) evaluated a large number of action research projects in higher education and the outcome of that study showed that the vast majority of projects resulted in improved teaching and learning. More empirical studies are reviewed in Chapter 2.

Driven by the intention to know more about the experiences of university faculty involved in action research, I carefully reviewed the relevant literature and found that published works in this regard generally fell into two categories. The first category is composed of studies that investigate initiatives at the program level to document the uptake of action research and activity across the institution (e.g., Gray, Chang & Radloff, 2007; Kember, 2002). These studies are mainly focused on examining the outcomes of faculty development programs aimed at improving teaching and learning by supporting faculty to engage in action research projects. Another set of studies consists of reports from individual faculty members about what they did in their action research project and the results of student learning measures (e.g., Walser, 2009; Ham & Davey, 2005). However, there seems to be very little literature about how faculty members (and other project team members) experience the process of action research in a comprehensive way. Therefore, this study seeks to explore the in-depth experience of conducting action research from the perspective of the faculty lead investigator as well as other project team members (support staff members and the RAs).

1.2. Conceptual framework

The conceptual framework for this research draws on three models, two that are specific to the scholarship of teaching and learning, Trigwell and Shale (2004) and Theall and Centra (2001). A third is taken from the literature on professional development in the context of K-12 teacher education, Clarke and Hollingsworth (2002). I begin with those specific to the scholarship of teaching and learning.

Trigwell and Shale (2004) proposed a "practice-oriented" model (see Figure 1) that "favours a notion of scholarship as activity" (p. 529). As they explain:

> Our model includes three interrelated components - Knowledge, Practice and Outcome - of teaching a separate component of scholarship. Each of the teaching components is more fully described by a set of elements (in each of the three overlapping ovals). Together these elements and components describe a teaching system (within the large rectangular box). (Trigwell & Shale, 2004, p. 529)

What interests me most about this model (see Figure 1) is the practice component situated in the middle of the figure that includes "teaching, evaluation, reflection, communication, learning". This essentially captures the action research process - the activities faculty members or other team members may be involved in as they conduct action research projects. In addition, this model also explains how the process of action research is informed by the prior knowledge of the individual faculty member as well as adds to that knowledge (i.e., the two way arrows). Also depicted is how the process or practice of action research leads to observable outcomes and is at the same time informed by these outcomes. The focus of my research is on the experiences of project members with the process of action research and their perceptions of how this experience enhances their individual knowledge and knowledge of student learning – so essentially this research is positioned in all three components of the Trigwell and Shale model (2004).

Knowledge   Practice   Outcome

Knowledge
of discipline

Knowledge of
teaching/learning

Conceptions of
teaching/learning

Knowledge of
context

Teaching

Evaluation/
investigation

Reflection

Communication

Learning

Student
learning

Documentation

Teacher
learning

Teacher
satisfaction

made public for peer scrutiny   (through communication, publication…)

Scholarship of Teaching

Figure 1.   *Components of a Model of Scholarship of Teaching (Trigwell & Shale, 2004, p. 530)*

The second model that frames my study is one proposed by Theall and Centra (2001) (see Figure 2) to "demonstrate the important and necessary synergy between the scholarship of teaching and the improvement of teaching" (p. 34). They described their model as follows:

> The italicized terms are typical contributions of the research to day-to-day practice. For example, the literatures of research, evaluation, and assessment provide processes for data collection and analysis. The central triangle represents day-to-day teaching practice, which is informed by the research, theory from the circles, and the disciplinary specialty and practical experience. The bidirectional arrows indicate that scholarship of teaching involves both the use of existing research and theory and the contribution of new understanding through the application of the scholarly process to day-to-day practice. Improvement comes about through the teachers' investigation of specific teaching and learning contexts, and this process adds to pedagogical content knowledge by incorporating important factors in teaching and learning across disciplines
> (Theall & Centra, 2001, p. 34)
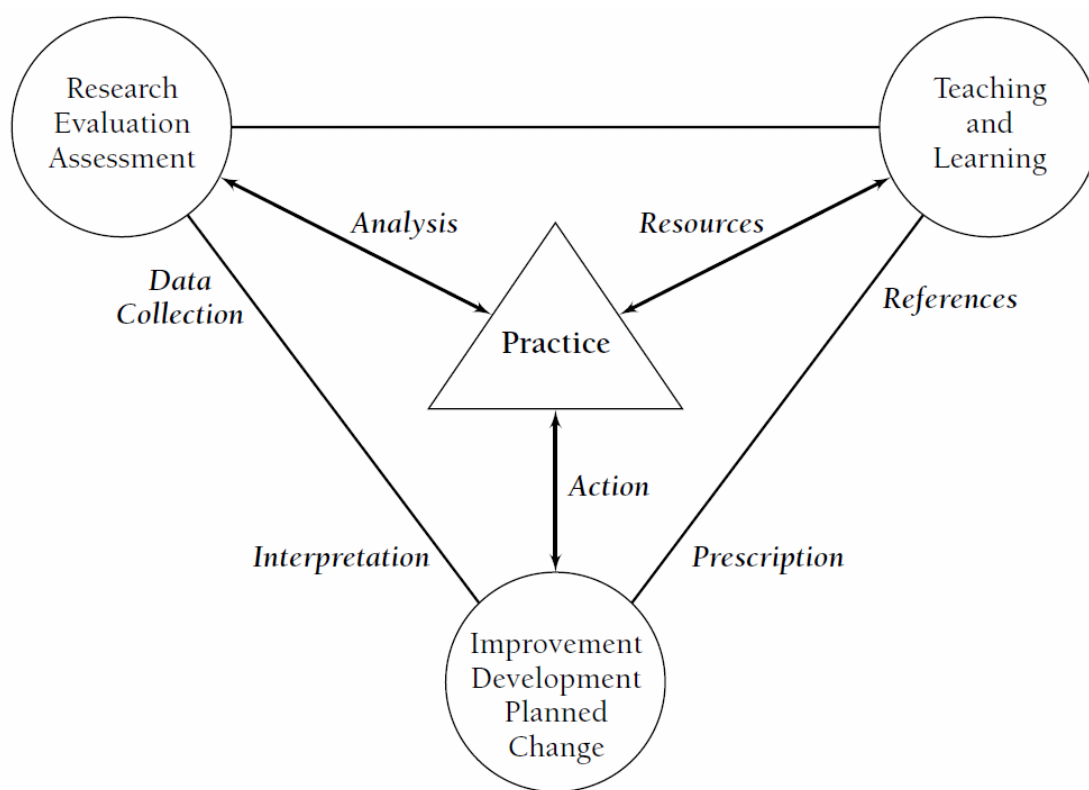
Figure 2. **Scholarship-Improvement-Practice Synergy (Theall & Centra, 2001, p. 35)**

This model usefully frames my study as it highlights the dynamic process of investigating teaching as research (i.e., action research) and the effects of this on day-to-day teaching practice. The theory and knowledge about teaching and learning, the process of doing research and the improvement of teaching and professional knowledge interact with one another and co-develop in a way that is dynamically portrayed by this model and that is consistent with my approach to this research.

Finally, I draw on Clarke and Hollingsworth's (2002) model which attempts to provide an explanation of how teacher professional growth happens (see Figure 3). This model suggests that "change occurs through the mediating processes of 'reflection' and 'enactment' " and "change in one domain leads to change in another" (p. 950). The four distinct domains as are: 1) the personal domain including teacher knowledge, beliefs and attitudes, 2) the domain of practice focused on professional experimentation, 3) the domain of consequence focused on salient outcomes, and 4) the external domain providing sources of information, stimulus or support. Another thing worth mentioning is

that, although the model is proposed as a model of K-12 teacher professional growth, the authors note, "In recognition of the relevance of the model to educational and other professional settings in addition to classrooms, the domain of practice is conceived as encompassing all forms of professional experimentation, rather than just classroom experimentation" (p. 950). Therefore by extension, I believe this model can also be used to understand professional growth in higher education.

With regards to my research, this model helps to explain the mechanism for change in teachers' professional development, emphasizing the importance of enactment and reflection. In addition, the interconnected relationships between the three internal domains and one external domain are also inspiring to my study as it helps me to think about the various aspects of the action research process (i.e., proposal development, activities involved in conducting the project and final reporting) and how these different aspects require enactment and reflection and therefore engage project members in the ongoing mechanism of professional development.

The Change Environment

External Domain

External Source of Information or Stimulus

Domain of Practice

Personal Domain

Knowledge Beliefs And Attitude

Professional Experimentation

Salient Outcomes

Domain of Consequence

→ Enactment

- - ▶ Reflection
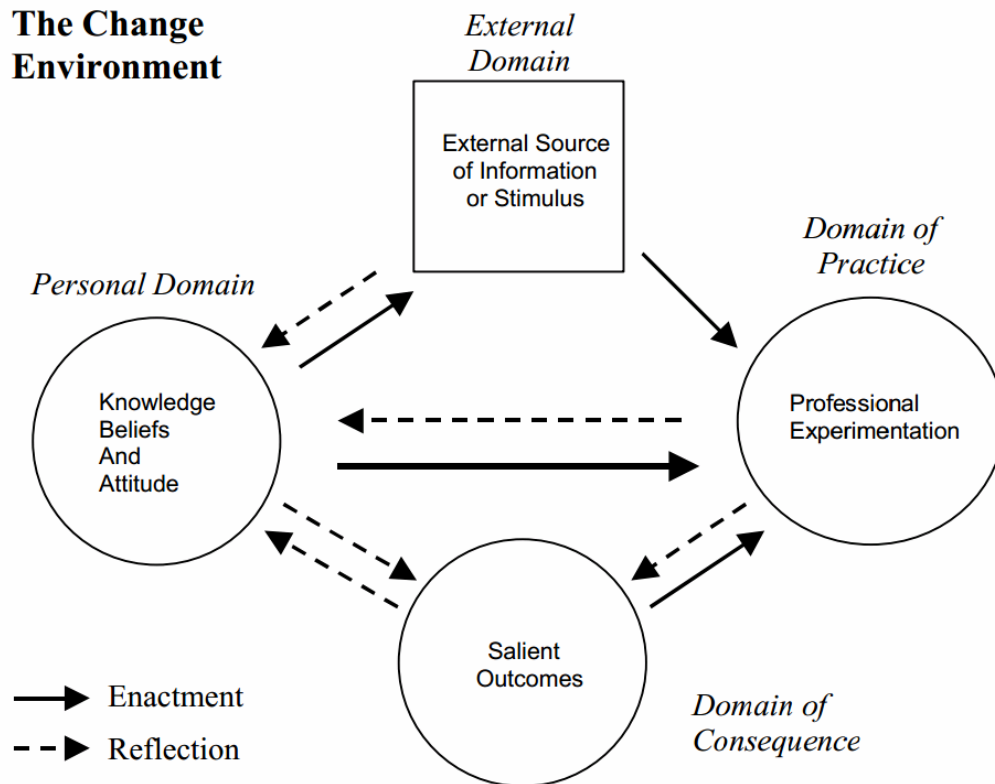
Figure 3.   The interconnected model of professional growth (Clarke and Hollingsworth, 2002, p. 951)

Together, these three models form the conceptual framework for my study by providing an explanation of how the action research process may enhance individual knowledge of teaching and student learning (Trigwell & Shale, 2004), the dynamic relationship of the different aspects of the action research process (Theall & Centra, 2001) and the actual mechanism of professional growth (Clarke & Hollingsworth, 2002). In short, taken together, these three models provide an explanation of how individual practitioners achieve professional growth through involvement in action research. What the three models don't include, however, is the discussion or consideration of teamwork while faculty and other members conducting action research projects in a team.

1.3. Problem statement

Teaching quality and student learning outcomes have become the focus of intense scrutiny in recent years. Action research has been suggested as a useful way to

support university faculty to improve teaching and student learning. However, there is very little information about how faculty members (and other team members) experience the process of action research and what they learn as a result of this engagement.

1.4. Research purpose and questions

The purpose of this study is to investigate the experiences of the faculty members (and other team members) in conducting action research. Specifically of interest is what faculty (and other team members) learn about their teaching and research practice and student learning, how they experience the process of teamwork, and what delights and challenges they experience in carrying out the projects. What I am seeking, different from those in the current literature, is a more comprehensive understanding of faculty (and other team members) experience so as to inform those who want to take part in action research about the potential benefits and possible difficulties they might encounter during the research process. As well, I want to provide educational developers with information that can aid them in planning ways to better facilitate faculty research processes and minimize the potential challenges. Qualitative methods are used to address the following two broad questions.

1. What do faculty members (and other team members) perceive they have learned from the process of investigating teaching and learning as an action research project?
2. How do faculty members (and other team members) describe their experiences in conducting an action research project?

2. Literature Review

In the literature search, I used the following keywords: *action research, faculty development project, teaching and learning inquiry, classroom research, and scholarship of teaching and learning.* My focus was to find empirical studies that examined action research projects and processes or faculty experiences in conducting action research. The term *action research* appears to be frequently used in the literature related to this study and therefore, I begin with a discussion of this concept.

2.1. Concept of Action Research

Action research is conceptualized in slightly different ways by different individuals in the research community (Esposito & Evans-Winters, 2007). It is not the intention of this paper to give a single definition of action research; however, a review of the common definitions and features of action research is important in establishing our common understanding about this term.

Carr & Kemmis's (1986) definition of action research is widely cited by many researchers (see for example, Kember & Gow, 1992; Kember, 2002).

> It can be argued that three conditions are individually necessary and jointly sufficient for action research to be said to exist: firstly, a project takes as its subject-matter a social practice, regarding it as a form of strategic action susceptible of improvement; secondly, the project proceeds through a spiral of cycles of planning, acting, observing and reflecting, with each of these activities being systematically and self-critically implemented and interrelated; thirdly, the project involves those responsible for the practice in each of the moments of the activity, widening participation in the project gradually to include others affected by the practice, and maintaining collaborative control of the process.
> (Carr & Kemmis, 1986, pp. 165-166)

Grundy and Kemmis (as cited in Parsons & Reynolds, 1995, p. 4) see action research as having two essential aims: "to improve and to involve". Kemmis and McTaggart (2000) described the process as a spiraling model: identify a problem, systematically collect data, engage in personal and professional reflection, analyze the data, take action based on the data, and revisit the original problem. Ponte, Beijard and Ax (2004) argued that "teachers can use action research to try to gain insight into their practice. Developing professional insights through action research is about knowledge that teachers develop themselves. So, action research is conceived as a strategy teachers can use to make their work more professional" (p. 593). Megowan-Romanowicz (2010) stated that "action research straddles the divide between theory and experiment. It requires classroom practitioners—experimentalists—to adopt the 'theorist's' approach, conducting research on their students' learning as it emerges or examining their own teaching practice as it unfolds in classroom activity" (p. 995).

Norton (2009), referring specifically to higher education, used the term *pedagogical action research* to refer to the processes of learning and teaching that occur at higher education levels. Norton stated that the fundamental purpose of pedagogical action research in higher education is "to systematically investigate one's own teaching/learning facilitation practice, with the dual aim of improving that practice and contributing to theoretical knowledge in order to benefit student learning" (p. 59). Schmuck and Stevenson (2010) also described action research in the higher education context stating that:

> when you carry out action research you empower yourself, and those with whom you are working, to collect data about your actions and strategies so that your future actions and strategies will be more effective. Action research also aspires to improve your professional judgments and to help you attain insight into how to better achieve your higher educational goals. By doing action research, you can convert your current educational practices into better procedures, better instruction, better curriculum and better administration.   (Schmuck & Stevenson, 2010, p. 21)

Although the definitions of action research vary somewhat, the common elements are that it involves investigation of one's own teaching practice, reflection on the findings and application of findings to future practice.

2.2. Investigations of Action research in different contexts

2.2.1. Pre-service and In-service teacher training or teacher education programs

Although this study is interested in understanding university faculty members as primary investigators in conducting action research projects, it is useful to consider the somewhat more plentiful literature at the K-12 level. Much of the literature in this context focuses on incorporating action research in pre-service teacher preparation programs or in-service teacher training programs or degree programs supported or facilitated by university researchers. This literature is useful because it provides us with ways to think about the related literature in higher education, which is the focus of this study.

The first set of studies focus on pre-service teachers as teacher-researchers involved in programs/courses offered by a university. For example, Bloomfield, Taylor and Maxwell (2004) described an action research project undertaken by fourth year Bachelor of Education students during their internship. Students involved are asked to produce a report on their action research project. Feedback from the student teachers was viewed as positive and was supported by the evidence from student teachers' report examples and one student's interview data. Most students commented in the final reports that "they had experienced considerable professional development in the area that they have researched" (p. 366). It is also worth mentioning that this study stressed the importance for new teachers engaging in reflective practice so that they continue to develop as reflective practitioners. Ponte, Beijard and Ax's (2004) research focused on the experiences of teacher educators in three different contexts as they implemented action research programmes for training secondary school teachers. Data was collected by semi-structured interview. Educators in all three institutes reported that "students mastered simple, non-systematic forms of reflection before they were able to carry out fully-fledged action research in a systematic way and that they learned to master action research by doing it" (p. 591). Another group of studies are in similar format but involving in-service teachers. For instance, Wong (2011) considered the cases of two in-service music teachers who conducted individually adapted action research as a part of the course requirement of a music teacher education programme. The author described the action research process of the two in-service teachers as well as their

experiences and changes through the action research. Qualitative data was collected via semi-structured interview with the teachers in the study. The findings indicated "teachers valued the enhanced opportunity for them not only to reflect and improve professional practice in teaching, but also to help their students to learn better. Teachers experienced positive classroom changes and developed ownership of their professional growth" (p. 107). Megowan-Romanowicz (2010) described a year-long action research study that the teachers enrolled in the master of natural science program for high school science teachers were required to complete. The author of the paper, the program's action research coordinator, described both process and outcomes of this research experience from the perspectives of the research coordinator and the teacher–researchers. Data collection included interviews, email exchanges, field notes, and surveys. Findings of this study based on teacher reports indicated the research experience "changed them in fundamental ways, providing them with a framework for deepening their understanding of student thinking, challenging their folk wisdom about teaching and learning, building confidence in their abilities and renewing their commitment to teaching as a vocation" (p. 993).

In summary, as we can see from the above studies, action research is a core component for many teacher preparation/education programs. Qualitative inquiry was used as primary method in understanding the process and outcomes of the action research projects. Findings from these studies show that action research was a useful tool for pre-service or in-service teacher preparation, specifically by improving teachers' professional practice of teaching and their ability to be reflective teachers. This evidence from empirical studies about action research in k-12 education shed light on what I would expect to find from the literature about action research initiatives in higher education.

2.2.2. Higher Education

In this section, I review the current literature about action research in the context of higher education. Kember and Gow argued in 1992 that while at the K-12 level there is an abundance of literature investigating action research, there is scant reference to action research as a faculty development strategy for higher education (Kember & Gow, 1992). This situation has not changed much in more recent times based on my search

of the literature. However, it is worth noting that there are a large number of studies authored by individual university academics who conducted action research projects and I discuss this literature set later. I begin with the investigations of action research as a faculty development strategy in the higher education context.

McGee (2008) described an action research project in a Middle Eastern Gulf State. In this study, an action research approach was used to create more effective teaching and learning situations for the English as Second Language (ESOL) advisers and to improve their professional practice. Most feedback from the ESOL advisers was given orally since many of them were not comfortable having an interview recorded. A member of the professional development team took notes for group or individual discussions about evaluation of the process. Data also included individual and group written evaluations or reflections. The professional development team used the common essential elements and values of action research as a framework to evaluate the success of action research in terms of its benefits to the professional development experiences of the participants. The main areas of success were reported as: "focus on practice and situated in practice"; "cycles of review and reflection"; "bridging the gap between theory and practice by reconstruction of professional knowledge"; "fostering a culture of learning" (pp. 242-244). Gray, Chang and Radloff (2007) described a scheme called Action Research in Teaching and Learning (ARTL) for improving university teaching over a five-year period. This scheme supported staff to take an action research approach to improve some aspect of their teaching. It involved over 130 teaching and other staff with a total of 34 projects completed. The program was evaluated "in terms of quality, effectiveness, practicality, participation, and satisfaction" (p. 21). As found in a previous study (Jansz-Senn, Chang, Gray, De Pew & Radloff, 2003 as cited in Gray, Chang & Radloff, 2007), they found that the scheme had affected staff in terms of improving: "the quality of teaching and learning; understanding and undertaking of collaborations to improve teaching; knowledge and / or practices of assessing students; and ability to be more reflective in their teaching practice" (p. 28).

I found two studies that explicitly evaluated teamwork in action research projects. Kember (2002) described an initiative that employed a three-level evaluation design: project team self-evaluation, coordinating team evaluation, and independent panel overall project evaluation . Data was collected from a survey of participants and

interviews using a random sample of project teams. The findings included both project-specific outcomes and long term outcomes and concluded that there was a "lasting effect on teaching; teaching became more student-centred; learning about how to conduct action research; developing capacity to reflect upon their own teaching; developing teamwork skills" (pp. 91-99). In Wright, Finelli, Meizlish and Bergom (2011)'s study, the authors described the Investigating Student Learning (ISL) program at the University of Michigan to fund faculty postdoc / graduate-student teams to pursue SoTL research on courses and curricula. The ISL grants created a structured role for graduate students and postdoctoral research fellows as co-applicants and co-investigators with faculty. An extensive formative and summative evaluation was conducted, including both participant-satisfaction data and analyses of work products. For example, the study argued that nearly all teams gave feedback on their experience and all respondents agreed that, "overall, the ISL program was valuable for helping me to complete my research on student learning." Most teams agreed that "their experience with their project would change their approach to teaching" (p. 53).

The focus of the studies in this section is to present and evaluate the university faculty development programs that supports faculty conducting action research projects. The impact of the initiatives on participants' professional development was a focus of the reported findings. The descriptors of these impacts were very meaningful to me in conducting this study, since they informed what facets of the experience of participants I should investigate. However, the main focus of these studies is still on evaluating the initiatives on a program level. By reading these papers alone, I did not get an in-depth description of the experience in terms of what individual team members learned in doing action research or what individual team members experienced in the process of doing action research.

In the hope of getting more relevant information, I continued to review another set of literature, namely studies that reported individual action research projects, authored by the faculty investigators themselves and focused on what they did and the student learning outcomes. There is a substantial amount of this type of literature that I retrieved either from online resources or peer-reviewed journals. For example, Koch et al. (2002) provided examples of two different projects to illustrate how junior faculty (and a faculty mentor and student associate) with diverse courses, class sizes, and teaching

concerns approached the task of improving their teaching. In the two examples, the new faculty members used narratives to describe how they applied different assessment strategies to evaluate teaching effectiveness.   Many other academics in higher education also presented and described their individual action research projects in investigating teaching and learning problems (e.g., Herington & Weaven, 2008; Walser, 2009; Ham & Davey, 2005; Raubenheimer & Myka, 2005). In these studies, the faculty author presents action research as a method/tool to change their classroom practice. In this literature, faculty publish the findings from their projects for review by their disciplinary community. By reporting their works, they are sharing with others the types of action research projects pursued. I expected to find in this literature much more information about their specific experiences in conducting their projects and their reflections about this, however, most of these papers only provided scant information in this regard. For example, amongst those papers that touched on this aspect, Herington and Weaven (2008) in their study presented "an action research approach to exploring methods of improving the learning styles and outcomes of first year university students within large class environments" (p. 111). They reflected on the nature of the teaching experiment they conducted, both tutors believed "the experience to be both challenging and rewarding", they mentioned "they were also encouraged by being given an opportunity to 'experiment' and to be more flexible (and less standardized) in their approach to tutoring . They expressed that there was much to be gained from changing the focus from content to the provision of an encouraging environment for students" (p. 126). In another example, Walser (2009) presented an action research study based on adopting self-assessment as an instructional strategy.   The author described the research process of implementing this new instructional strategy and investigating the effectiveness of the strategy in two courses. In the instructor's perspective section, the author expressed and reflected that "In addition to helping me improve instruction, the self-assessment exercises helped me improve my interactions and relationships with students; they helped me get to know the students better both academically and personally. I was sometimes surprised at how open and thoughtful students were in their responses." (pp. 304-305)

The reflections of faculty members in the papers described above start to document their experiences but not in a very deep way and certainly not in a way as to

be able to document the rich and varied experiences one would expect to emerge from conducting an action research project. In an effort to explore the experience in a deeper comprehensive way, this study builds on the current literature and strives to elicit from the faculty researchers (and other team members) more reflection and/or description of their experiences in conducting the projects and what they have learned from doing action research.

To sum up, in the current literature related to action research, I failed to find an in-depth examination of the experiences of the faculty members themselves (and other team members) as they are in the process of doing action research. To this end, this study investigates two broad questions as mentioned earlier. Specifically, first, I am interested in understanding what individual faculty (and other team members) perceived they have learned in conducting action research. Second, I am interested in understanding their general experiences in the process such as what their experience in working as a team was, and what the delights and challenges they faced were. To serve such a goal, a qualitative approach was adopted as both lens and methodology in investigating the multifaceted experiences of the faculty investigators and other project team members.

3.   The context of the study

The two action research projects that were the focus of this research were supported through an initiative at Simon Fraser University, the Teaching and Learning Development Grant program (TLDG). In this chapter, the TLDG program is described as are the two projects investigated.   The following description of the TLDG is taken verbatim from two papers (Amundsen, Hotton, & Emmioglu, 2013; Amundsen & Hum, 2012) and appears in italics.

3.1. Teaching and Learning Development Grant Program

In 2008, Simon Fraser University a mid-sized university in BC, Canada, went "back to the drawing board" forming a Task Force on Teaching and Learning to re-envision how teaching and learning could best be supported. Over two years, feedback was gathered from all levels of the university to understand the diversity of views across individuals and across academic and service units regarding support for teaching and learning. A number of recommendations resulted. Amongst these was the establishment of a partnership between the faculty-initiated Institute for the Study of Teaching and Learning in the Disciplines and the newly restructured Teaching and Learning Centre to support the expressed desire of faculty across the university to investigate questions about teaching and learning of specific interest to them. The broad purpose of the partnership is to support faculty to engage in action research and to promote conversations and collaborations about teaching across the university as supported by small grants.

Teaching and Learning Development Grants are awarded in amounts up to $5,000. If a faculty member so decides, they may extend this funding, and proposals for two consecutive phases of a project of up to $5,000 each may be developed at one time,

with the release of funding for the second phase contingent upon completion of the first phase and submission of the final report for the first phase.

The process is designed as follows:

- *Faculty attend two two-hour project proposal development workshops led by faculty who are educational researchers, faculty who have previously completed projects, and staff of the SFU Teaching and Learning Centre. At the first workshop session, those developing grants discuss their ideas with other faculty attending the workshop and workshop facilitators with the purpose of turning ideas into research questions. At the second workshop session, faculty present a draft of their proposal, receive feedback and refine the budget request.*

- *Proposal drafts are further refined on a one-to-one basis with workshop facilitators, if necessary.*

- *Proposals are funded once they meet the required criteria – this is a developmental process rather than a competitive process. In other words, any faculty member who follows the process and finalizes a proposal will be funded.*

- *The majority of projects involve teams, which could include (in addition to the project leader), other faculty members, support staff, undergraduate/graduate student research assistants, and outside technical experts.*

- *Grant recipients are provided with at least two published pieces of educational research relevant to their project.*

- *Grant recipients meet once or twice during the implementation process to share successes and challenges with each other.*

- *The final report takes the form of a 3-4 page written submission or a poster presented at the annual Teaching and Learning Symposium sponsored by the Teaching and Learning Centre.*

- *Findings are shared with departmental colleagues (required) and oftentimes more widely (faculty, university events, disciplinary conferences, publications).*

This process promotes Boyer's (1990) notion of teaching and learning as a scholarly activity. Our design shares many characteristics of programs at other universities that seek to promote what is termed the scholarship of teaching and learning (SoTL) through a process of action research (cf. Connolly, Bouwma-Gearhart, & Clifford, 2007; Kember, 2002). These shared characteristics are that faculty choose the questions they will systematically investigate, questions are focused on student learning, findings are used to revise or redesign teaching practice, and findings are shared with close colleagues with the purpose of informing the teaching practice of others. We also have built into our design safeguards against some of the problems identified with this

practice (Chalmers, 2011; Norton, 2009). For example, the assertion that this type of research often results in educational research of poor quality because faculty trained in research methodologies suited to their disciplines often are less knowledgeable about, and less experienced with, methods suited to researching teaching and learning (Rege Colet, McAlpine, Fanghanel, & Weston (in press); Gray, Chang, & Radloff, 2007). In our case, experienced educational researchers work with faculty to develop project proposals and to support the implementation of the project as required. As well, faculty are directly provided with at least two published research studies relevant to their project with the idea that this will connect them with the work of others who have similar interests and model the educational research process. We are also building a database of these published studies (that includes the published papers that have already resulted from a few of the funded TLDG projects) so that grant recipients may access this broader resource.

We have, as have a few others, gone beyond the design of individual action research projects to also intentionally develop community around these projects. For example, our design situates the project in the local academic workplace (cf. Boud, 1999), involves project teams (other faculty, student research assistants), and presentation to departmental colleagues is required, as noted above. We also intentionally cultivate community across academic units (cf. Waterman et al, 2010) through the collaborative development of project proposals in the workshops sessions, interim meetings of project teams during project implementation, and drawing on the expertise of faculty who have completed projects to be co-facilitators of grant proposal development workshops.

3.2. Two action research projects teams – the focus of this research

In this study, I tracked the experiences of two project teams intensively. One of the teams had completed their project, and the other was in the process of conducting a project. Both teams consisted of faculty member(s), graduate student research assistant(s) and a learning support staff member. The learning support staff member is employee of university in units that support student learning and teaching. This

composition of faculty, support staff and student research assistant (RA) as a project team is a fairly unique feature of the projects at SFU. In the action research literature reviewed earlier, the most common compositions and collaborations were either education researcher/teacher educators in university with school teachers as researchers (e.g., Megowan-Romanowicz, 2010; O'Connor, Greene & Anderson, 2006) or university faculty as researchers with educational researchers as coordinators (e.g., Barazangi, 2007). There were only a few descriptions of multidisciplinary teams like those featured in this research (e.g., Wright, Finelli, Meizlish & Bergom, 2011). Therefore, by exploring each team members' experience in this study, I expected to not only enrich the current literature of individual faculty's experiences, but also contribute knowledge concerning support staff and student research assistant's involvement in this type of project.

To develop the following descriptions of the projects and project teams, I read the project proposal and final reports collected from both teams; this was supplemented by what I learned further in the interviews.

3.2.1. Team 1 - Faculty of Science

As described in the project proposal of Team 1, an online version of a large course in the Faculty of Science was created by two of the faculty members of this team a few years ago. The online version of the course was created to be parallel to the on-campus version by incorporating recorded lectures, similar homework problems and exams. About two years ago, both the online and face-to-face versions of the course were offered in the same semester. One of the faculty members taught the face-to-face version of the course, and they both supervised the online version. Therefore, they viewed this as a unique opportunity to compare certain aspects of the two versions of the course from both student and instructor perspectives. In addition to the two faculty members, the project team included a learning support staff member who was involved with the two faculty members in designing the online version of the course and providing technology support. Another member was a graduate student from the Faculty of Education who served as a research assistant based on his expertise in the development and analysis of surveys. The project team investigated the following three research questions: Question 1: In two versions of the course (face-to-face and online)

taught by the same instructor, what are the differences between the two versions in terms of student perspectives of the learning environment? Question 2: In two versions of the course (face-to-face and online) taught by the same instructor, what are the differences in student performance on course assignments? Question 3: In two versions of the course (face-to-face and online) taught by the same instructor, what are the differences in the experiences of the instructors? One of their findings was that the higher the perception of interaction with the instructor, the more highly the effectiveness of the instructor was rated and both were related to achieving higher grades. Another finding was that online students reported spending more time on the course than face-to-face students and face-to-face students reported spending significantly more time working on assignments with others. Another finding they described as surprising was that the majority of students in the face to face version (91% and 83% in survey 2 and 3) watched the video lectures that had been prepared for the online version of the course.

3.2.2.   Team 2 - Faculty of Applied Science

The two primary investigators in this project team were a faculty member and a learning support staff member. They were interested in helping to improve the academic success of students in a department that typically had a high dropout rate. They developed a workshop format focused on learning strategies and this was integrated into lower division courses. The student feedback they had collected previous to beginning their first action research project and the anecdotal comments from faculty indicated that the program was of general benefit to students. Their first grant project was focused on further analyzing the data they had already collected and developing a more formal survey to better evaluate the program. Their second grant focused on making revisions to the workshop based on survey findings, revising the survey, using it more widely and analyzing the resulting data. In these two grant projects, they investigated the following questions: 1) how effective is the existing program for supporting student learning? 2) how can we enhance our approach to evaluating the program? 3) based on the outcomes of this inquiry, how can the program be improved?

After finishing these two grant projects, they were invited by the Dean of their Faculty to investigate how to adapt the program for another department in the Faculty. It was in the conduct of this third grant that I began to track this team. Essentially the

same process was followed: consult with faculty to redesign the program for the new context, begin offering the program, design an evaluation survey, administer the survey, and make revisions based on feedback. When I first interacted with the project team and conducted the first interview, they were in the beginning stages of this third project, and the second round of interviews was conducted when they were nearing the end of this third project. The project team for the third project consisted of a faculty member, a learning support staff member and two graduate research assistants who possessed expertise in educational research. It is worth noting that one of the research assistants interviewed was not involved in the first two grants.

4. Methodology

4.1. Qualitative approach used and rational for the choice

Before describing the specific methods in this study, the reason for choosing qualitative research, and in particular the case study approach, is explained.

As stated by Creswell (2008), in qualitative research, "the researcher relies on the views of participants; asks broad, general questions; collects data consisting largely of words (or text) from participants; describes and analyzes these words for themes" (p. 46). In this study, I asked broad questions in analyzing the data sources. I explored the self-reported experiences of the project team members in conducting the projects and therefore this exploration mainly relied on team members' perceptions (in the interviews) and written words (in the documents submitted as part of the action research process (e.g., grant proposal and final report)). Therefore, qualitative research was an appropriate approach for conducting this study.

In particular, under the framework of using qualitative research, case study methodology was adopted. Creswell (2007) stated that "A case study is a good approach when the inquirer has clearly identifiable cases with boundaries and seeks to provide an in-depth understanding of the cases or a comparison of several cases" (p. 74). In this research, the purpose was to explore an in-depth understanding about the experiences of the two action research project teams. As Creswell (2007) described, "case study research is a qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information (e.g., observations, interviews, audiovisual material, and documents and reports), and reports a case description and case-based themes" (p. 73). In this research, two projects teams were investigated that shared the same background and context. In addition, multiple types of data were collected and analyzed and case-related themes were reported (more

detailed description is presented in later sections). In terms of the specific type of case study, a collective or multiple case study method was adopted in this research based on the investigation of two project teams. Creswell (2007) argued that "In a collective case study (or multiple case study), the one issue or concern is again selected, but the inquirer selects multiple case studies to illustrate the issue" (p. 74). In this research, the research purpose was to explore the experiences of team members in action research projects which is the issue or concern of this research. To illustrate this issue, two cases were selected (two action research projects and teams). "Yin (2003) suggests that the multiple case study design uses the logic of replication, in which the inquirer replicates the procedures for each case" (Creswell, 2007, p. 74). By exploring two cases, I took the same procedures of inquiry for each of the two cases.

4.2. Research Participants

I wanted to focus on one project that was completed and one project that was in progress. For the project team that was completed, I wanted to capture their experiences on a retrospective basis. For the project team that was in progress, I wanted to track their experiences as they unfolded. I also wanted to consider projects that had, in addition to the faculty principle investigator, other team members including support staff and graduate student RAs. A third consideration was that the project must have received ethics approval. My supervisor and I reviewed the projects that met these three criteria, several projects met the criteria for completion or in progress and ethics, only two met the criteria for including a staff member. I contacted the project leaders of these two teams by sending them an email. In the email I introduced the purpose of the study and described briefly what participants would be asked to do if they were willing to participate. After receiving the agreement of the project leaders, I then emailed the other project team members and asked their willingness to participate. All team members who were contacted agreed to participate. Specifically, in Team 1, the participants included two faculty members, one learning support staff member, and one graduate student research assistant (RA). And for Team 2, the participants included one faculty member, one learning support staff member, and two graduate student RAs.

Ethics approval was obtained from the SFU Office of Research Ethics before collecting data (see Appendix A). Before the start of the first interview, each participant was asked to review and sign a consent form (see Appendix A), an extra copy was provided for their reference.

4.3. Data collection

Finalized grant proposals and final reports submitted by the project leaders were analyzed. These were primarily used to familiarize me with the projects and to aid in the construction of the interview protocol. They were also used to provide the descriptions about the two projects and project teams in the previous chapter. The guidelines for the project proposal and the final report can be found in Appendix B. Semi-structured interviews were conducted. One-on-one interview(s) were conducted with each member of the two teams (See Table 1). For Team 1 that had already completed the project at the time of interview, one interview for each team member was conducted in order to capture their experiences on a retrospective basis. Questions guided them to reflect/think back on what they had experienced and learned. For Team 2, still conducting a project, two rounds of interviews were carried out with the intention of tracking their experiences as they unfolded.

Table 1.   Faculty, RA and staff interview

		Interview code	Interview time
Team 1		T1-Fac1	June 06, 2012
		T1-Fac2	July 09, 2012
		T1-Staff	June 28, 2012
		T1-RA	June 12, 2012
Team 2	First round of interview	T2-I1-Fac	July 19, 2012
		T2-I1-Staff	July 18, 2012
		T2-I1-RA1	July 30, 2012
		T2-I1-RA2	August 03, 2012
	Second round of interview	T2-I2-Fac	December 07, 2012
		T2-I2-Staff	December 06, 2012

		T2-I2-RA1	December 10, 2012
		T2-I2-RA2	January 21, 2013

With guidance from my senior supervisor, I used the two research questions as a framework or starting point to design the interview questions and this was augmented by a review of the relevant literature. The draft interview protocols were then 'customized' for each team based on a reading of the grant proposals and final reports and a consideration of the in-progress status of Team 2 (see Appendix C). The interviews for Team 1 were conducted between June and July in 2012; and for Team 2, the first round of interview was from July to August in 2012 and the second was from December 2012 to January 2013. To set up each interview, an email was sent to each team member including an estimated interview length (one hour) and available time slots for them to select. During the conduct of each interview, the interview process was recorded (two recorders were used at the same time to ensure the safe recording). After completion of the interviews, eight interview tapes were transcribed verbatim by a professional transcriptionist and four were transcribed by me. In order to ensure the accuracy of the transcripts, I carefully listened to all audio recordings while at the same time reading the transcripts (this process although tedious and time consuming, really helped me to know the data). The transcripts were sent back to each team member and they were invited to correct/change/add/delete as they felt appropriate. In the end, two team members (one in each team) made a few small changes on their transcript.

4.4. Data Analysis

As suggested by Creswell (2008), analyzing qualitative data requires understanding how to make sense of text so that one can form answers to research questions. The interview data analysis process in this study adopted an "inductive" form (p. 244) as he suggested, from the detailed data (i.e., transcriptions from individual interviews) to the general codes and themes. To conduct the analysis, I followed the guidelines suggested by different researchers in doing qualitative analysis. In fact, the data analysis began from as early as the first data collection. As mentioned by Creswell (2008), this type of analysis "involves a simultaneous process of analyzing while you are

also collecting data" (p. 245). Reflection notes were jotted down while interviewing and listening to the tapes when doing transcribing and correctness checking. Just as Creswell (2008) continued to state, "qualitative researchers analyze their data by reading it several times and conducting an analysis each time. Each time you read your database, you develop a deeper understanding about the information supplied by your participants." (p. 245). After the transcripts were finalized by the participants, I read through them and wrote down memos in the margins about thoughts and comments that came to mind, to have a further feeling for the data and to obtain a general sense of the material, this process is described as "a preliminary exploratory analysis" by Creswell (2008, p. 250) and was also advocated by Luker (2008) "ask ourselves what would be the possible pattern or themes," and then "start the coding process by reading through all the data again and start looking for themes" (p. 198-203). Creswell (2008) also offered some detailed suggestions for the data coding process, that is, "The object of the coding process is to make sense out of text data, divide it into text or image segments, label the segments with codes, examine codes for overlap and redundancy, and collapse these codes into broad themes" (p. 251). I started the coding process manually and after getting an 'idea' of the data, I uploaded the data into Maxqda for further coding refinement. The categories remained flexible and open to change throughout the entire analytic process. During this iterative process, I also developed a codebook (available upon request) with the names of the emerging codes, definitions of them and examples from the data. Once new codes ceased to emerge, I grouped the data by codes and looked to see whether any codes could be eliminated or collapsed.

In order to verify my coding scheme, I randomly chose some sections for my senior supervisor to code. We compared and discussed the similarities and differences in our coding and made adjustments to the coding scheme. This process was suggested by Bloomberg and Volpe (2008) as "inter-rater reliability" (p. 103). With my supervisor's experience in dealing with qualitative data, I found this process to be very meaningful in establishing the reliability of the coding and some new insights emerged from our discussion process as well. Once the coding scheme was stable, I recoded all of the data.

The finalized coding scheme is as follows:

*.   **Professional knowledge development**
- Knowledge of students and student learning
- Knowledge of pedagogy and instructional design
- Learning about educational research
- Changes made to teaching
- Plan on future inquiry
- Experience of conducting a project

*.   **About the Teamwork**
- Benefits of teamwork
- Challenges of teamwork
- Suggestions on teamwork

*.   **Satisfaction**
- Satisfied with the supports
- Satisfied with the process
- Satisfied with the project findings
- Disseminating project findings

*.   **Challenges**
- Project complexity
- Workload

4.5. Establishing Trustworthiness

To make the findings of the study more convincing, I used several procedures for establishing trustworthiness or seeking validation throughout this study.

First, prolonged engagement was adopted in this study. Prolonged engagement is the investment of sufficient time to build trust with participants and to have a better understanding of the context (Creswell, 2007; Lincoln & Guba, 1985). In conducting this research, I read all of the documents submitted concerning the project, conducted interviews with all of the team members and, for the team that was in progress, I conducted two rounds of interviews. In this way I developed familiarity with the projects

and a deeper understanding of the context and this enabled me to build a deeper conceptualization of the investigation.

The strategy of Triangulation was used. In addition to the interviews, I also read all project documents. The documents were used to familiarize me with the projects and to aid in the construction of the interview protocol. They were also used to provide descriptions about the two projects and project teams. On the other hand, when describing the two projects and project teams, what I learnt from interview was also used to supplement the description. This procedure is consistent with what Creswell (2007) stated about triangulation, using multiple types of data to provide corroborating evidence.

Member checking was also used in this study in that I returned the interviews to participants for editing as they wished. Member checking approach involves "taking data, analyses, interpretations and conclusions back to the participants so that they can judge the accuracy and credibility of the account" (Creswell, 2007, p. 208). As explained above, I also engaged in an inter-coder reliability procedure with my supervisor.

5. Findings

The purpose of this study was to explore the comprehensive experiences of faculty and other team members who are members of a team conducting a SFU Teaching and Learning Development grant project. The experiences of two project teams are examined in this study: one team that had completed a project (i.e., submitted a final report) and one team that was in the process of conducting a project.

Specifically, the study investigated two broad questions of both teams: What do faculty members (and other team members) perceive they have learned from the process of investigating teaching and learning as an action research project? How do faculty members (and other team members) describe their experiences in conducting an action research project? The findings presented in this chapter derived from the analysis of twelve one-on-one interviews (with all eight team members involved in the two projects). Four major findings are reported in this chapter: finding one addresses research question one and finding two to four respond to research question two. The overall findings are as follows.

- **Finding 1 :** All the team members perceived that they had developed professional knowledge through participating in the project.
- **Finding 2 :** Most team members perceived that they experienced many benefits from the teamwork involved in conducting the project. A few members also pointed out some issues with teamwork and provided suggestions for improvement.
- **Finding 3 :** Most team members indicated that they were satisfied with all aspects of their project experience, including the support provided, the process of conducting the project, the findings of the project and the dissemination of the findings.
- **Finding 4 :** A few team members also mentioned some challenging moments or feelings related to being involved in the project.

This chapter is organized using the coding scheme presented in Chapter 4 – the codes serve as headings and subheadings in this chapter. I think of this chapter like I

am telling the story of what I learned from the team members. "Lead-in sentences" are used to make the points, and then "participants' quotes" are used to illustrate the points as suggested by Bloomberg and Volpe (p. 109). They argued that "The emphasis throughout is on letting participants speak for themselves". Also as they suggested, quotations from interview transcripts are used to "portray multiple participant perspectives and capture some of the richness and complexity of the subject matter" (p. 111).

5.1. Finding 1 - Professional knowledge development

All the team members perceived they had developed professional knowledge through participating in the project.

The primary finding of the study is that when asked what was learned in conducting the project, all team members perceived an improvement in their professional knowledge, such as the knowledge of pedagogy and student learning, and the knowledge of educational research. The detailed findings about professional knowledge development are reported below.

5.1.1. *Knowledge of students and student learning*

All team members expressed their perception of increased knowledge of students and student learning.

In Team 1, both faculty members described increased learning about students as a result of being involved in the project. One of the faculty members reflected as follows.

> And another thing—I mean this could be a little bit strange—but really it was a surprise to learn going through those surveys and those conclusions that what we do in the class really matters. What we say to students, that really matters, so even if we don't always have a feeling the students listen—apparently most of them do—so that was— if I can say surprise—but a realization that kind of came from this experience. (T1-Fac1)

The support staff member and the RA in Team 1 also reported increased learning about students.

We found out that we did videos [for the distance education version of the course]—short videos—for each week and they [the videos] really focused on what they have to do in each week and giving examples. In the video they can see the instructor and they can see what they [the instructors] are writing like in a classroom that when you write a report on the transparencies so they can see too, right, so they really liked those videos, even the face-to-face students liked it because they said that they can go back and read them anytime ...that really helped. So that's something that we really learned ... they [the faculty team members} are going to use those in their other face-to-face classes also so that is something I think valuable we learned.   (T1-Staff)

The online course really successfully relies on time spent [time students spent on the course] and in the face-to-face course success relies on social or perceived social interaction—are the most interesting things.   (T1-RA)

Both the faculty members and support staff member in Team 2 reported similar understandings about student learning.

... the topics that we address in the workshop I'm convinced it is something that is very relevant to the students, so I'm happy to be doing this, I think it is a good need, I mean it is needed. For example, time management—everybody has problems with time management. So what have I learned? Students have problems with time management. Students have problems—so the types of problems that we are addressing are relevant to students—yeah. And the other thing that we have learned is that some—it doesn't matter that much which grade the students have, there are many that benefit from it and they are happy [with the support program]   (T2-I1-Fac)

Well I guess—I mean I have always known that time management is, you know, kind of one of the top things that students say they struggle with. I haven't always known that, but I mean for many years I've known that, but this came through again, you know, just how much that is an issue. So, you know, a lot of the elements of our workshop are to do with—we have an element in the workshop related to time management, ... and that seems to consistently come through as the biggest challenge that students say they face and continue to face is related to personal planning, planning of assignments, planning of homework, being self-directed, self-regulated, in terms of their planning of time.   (T2-I1-Staff)

And the RA from Team 2 also learned something about students.

...another thing that came out in the interview was, not only that attitude but that students don't often take advantage of speaking with their professors or TAs about things that they should, you know, which we all kind of know, right?   (T2-I2-RA2)

5.1.2. Knowledge of pedagogy and instructional design

All team members in both teams expressed their increased understanding about pedagogy and/or instructional design.

Project team members from Team 1 reported that they became more aware about the importance of interaction with students. As one of the faculty (T1-Fac1) said "I think that what I learned from the project is really that what we say in the class, the way how we interact with students really matters and I think that I'm aware of that more than before." And the support staff also pointed out the importance of interaction through her reflection on the findings of the project.

> … on one hand they like to have the flexibility to do it at anytime, that's why they are taking the online course…. So they like the flexibility but at the same time they want to have the interaction with the instructor. So, providing that is a challenge for us because we can specify some times and then that means they have to be there on that time and that means losing their flexibility, right. But with this finding we thought we should at least provide them some sort of real time interaction, so that is what we are going to do—provide some real time interactions. … So we thought we have office hours, maybe use that for office hours, so if they have questions students can come and ask questions. (T1-Staff)

The RA in Team 1 reflected about how to design the course to address student feedback.

> So I know generally that they need to spend time to do well on the course, but I mean then it is a question of how do you get them to spend time, right, and we have no way of telling that directly but at least from my own teaching experience and from my understanding of this course I think a lot of that had to do with, like I said, the fact that there was something to do every week, just to keep students engaged—so, yeah, I mean I did learn something useful that I didn't use about teaching [before this time]. (T1-RA)

Some members of Team 2 also had some thoughts about design – in the excerpt below, this was focused on the support workshops that were the focus of their project.

> …so one way of getting students to perform better is to increase the frequency of them using these types of strategies or introducing them to these types of strategies that are traditionally thought that successful students use. … we know that successful students go to TA

for help and our new students don't go for TA's help, ok. So in a workshop we have to stress that to be successful a good strategy is to use TAs, something like that—see what I mean?   (T2-I1-RA1)

The support staff member in Team 2 described how they used the survey they developed to make changes in the design of the support workshops that were the focus of their projects.

Some students even provide very specific ideas of what they would like to see included … so we get to look at that data and based on how relevant those were we can decide to really expand on something or reduce it or eliminate it, if it's completely irrelevant, you know. And then we also say, we ask an open question, what else, what's the example of another kind of scenario that you think would be very relevant for your group, … some students provided, you know, detailed examples of what they think will be a good scenario, so that would be very good information for us to going forward in developing that and may even give us some information that we can put it into [workshop 2]…   (T2-I2-Staff)

The faculty member and the RA from Team 2, explained how they used the survey data they collected in the first versions of the support workshop and went on to revise it.

The revised version, yeah. And we even created—we found ourselves offering the workshop as training material for future opportunities and analyze that data and wrote a paper—wrote a paper about this new version and explaining a little bit the change to the new version and how now there was an alignment between learning outcomes and the workshop and the survey. So we kind of—it was a discovery in a sense, which makes sense now, but how the three components needed to be aligned … So now as a result we ended up having a package—a more polished workshop—…   (T2-I1-Fac)

…because what we did [last time] is we said, 'ok , we have this workshop, let's [develop] from that design our learning outcomes and measure if we do them,' that's not supposed to work that way, you are first suppose to say, what my outcomes are, then you design it, then you measure it, and we went the opposite way, and so this way that's why the needs assessment was such an important piece, was actually to outline the steps, and to see how they are going to build on each other, and so what we end up with is a valid and reliable [survey] and is built upon all these different pieces, so learning what not to do is definitely it.   (T2-I2-RA1)

5.1.3. *Learning about educational research*

Most of the team members perceived they had learned about educational research by conducting the project.

One of the faculty members in Team 1 perceived that by doing the project, he had the chance to learn about education research in his discipline, and he viewed conducting research with people from Education as a positive and great learning experience.

> This is the first time that I was involved in a project that was actually about education [in my discipline] and this was my first experience working with researchers from Education and that was a really positive experience and really something that I learned a lot from. But maybe the most important thing that I learned was that research in education [in my discipline] is really a field in itself, so just witnessing what kind of knowledge and what kind of techniques [the RAs] brought to our group is something that we really didn't know about and we didn't have that kind of skill and it was a great learning experience (T1-Fac1)

On the other hand, for faculty outside of Education, being involved in the project enabled them to experience an educational research process - that was somewhat novel for them; their knowledge about doing educational research thus was enhanced through this practice.

> One was from the perspective as a faculty member going through the procedures of applying for this grant and doing the ethics approval and all that stuff, which coming from a background in doing research in [my discipline] - we never sought an ethics approval because we weren't studying human participants, so that was very interesting and eye opening so from that perspective I learned quite a bit about the whole procedure.   (T1-Fac2)
>
> So for me again it was a quite a learning experience because research in [my discipline] is something different than research in Education and that is—I cannot say that was something new, I knew that before, but this was my first experience really with doing it [educational research]   (T1-Fac1)

And for the RA in Team 1, even though he had greater experience with educational research, he also perceived that by applying his knowledge about education research into real practice, he improved his understanding about doing research and the experience reinforced his skills in research.

...I knew survey design before, of course, but I got better at it by working on this, I got better at statistical analysis...   (T1-RA)

In Team 2, the faculty member acknowledged that her knowledge about educational research had been improved in the process.

Yeah, it interests me, the whole story, it interests me to learn about education, and also I find myself better now to do this, having been expose to those, also when we were writing papers, right? So now I have a different background than I came [to this with], I understand what we are talking about completely when we do the studies and the analysis, I have the language, yeah.   (T2-I2-Fac)

In addition, by engaging in the projects, support staff member said that it allowed them to approach the program more formally and systematically.

If you look at the current version of the workshop and the current version of the survey you will see a lot of similarity with what we were doing before the small grant, which we threw together sort of—you know, I won't say—I mean we gave it a lot of thought but it wasn't certainly anywhere near as systematic a process as what we did with the small grant, so there are still elements—many elements there that are very recognizable from the beginning. But now we feel we really know why they are there...   (T2-I1-Staff)

The RAs in Team 2 also perceived they had learned about educational research through experience with the project. As one of the RAs pointed out, they are now using various ways for data collection.

... so yes, we are much more rigorous this time around, I think, we are also using interviews with the instructors, which is again that's something that we didn't do at all last year, so I definitely think there has been more, what's the word I am looking for, we opened ourselves up to different ways of gathering information, and different ways of gathering information that I think is better suit to what we are doing.   (T2-I2-RA1)

5.1.4. Changes made to teaching

Most of the team members of Team 1 mentioned that they had started to make some changes in their day to day teaching practice because of being involved in the project. A faculty member in Team 2 also reported making changes to her another course that was not a part of the project.

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One of the faculty members in Team 1 said that "I think that I pay even more attention when I communicate with my students" (T1-Fac1). The other faculty member on Team 1 also mentioned that he has made a few changes to another course since the project.

> From this project I've changed a few things. I've used video a lot more in other classes. I've gone on to teach [another course] and the students requested videos in [that course] which we are now just wrapping up production on all the videos for that course, but before we did that I just started creating videos in my office, you know, I did an example in class and I felt that the example probably could have been elaborated more on and that I could take into consideration some of the questions the students asked and so I go back to my office after class and record a five or seven-minute video and then post that online so students could have a look, sort of a rehashing of what we did in class with a few extra points.   (T1-Fac2)

The RA in Team 1 also mentioned that what he learned from the project changed his teaching in another course.

> But what I learned from this project really did inform how I designed the other course quite a bit like in terms of the way to structure it and like just little things like … In the [course] the way that that is done is there is an assignment every week, there is a lecture every week, there is something to do every single week and it has grades attached to it, so I did the same thing for the other course and I think it was relatively successful.   (T1-RA)

The project conducted by Team 2 did not focus on a particular course, but rather on the development of a workshop series that was integrated into multiple courses to help students with their learning needs. However, as a result of the project, the faculty member mentioned that the knowledge gained of educational methods or tools and of instructional design transferred to her own classroom teaching, and she made some changes in her teaching practice.

> In fact to be truthful I think it is affecting my own teaching also— yeah—because I try to make more—I'm using maybe strategies that I use to just have for the [workshop], maybe I'm bringing more into my own classroom. It cannot be identical because it is a different type, right. It is one workshop versus a whole course. Yeah, there is some transference happening. As far as my own growing, right, so yeah, no doubt about that.   (T2-I1-Fac)

5.1.5.　Plan on future inquiry

Some team members expressed the idea of viewing this project as the beginning of more investigation. They indicated explicitly that they will formally engage in this kind of inquiry again and the future inquiry will build on the previous one.

> Actually we are planning to do something similar in the fall semester so that is another outcome of what we did during this project that we were talking about. So we decided to build on it and we are trying something new now, really something new …　　　　　　　(T1-Fac1)

> I want to do the same kind of research with the biology course [that our unit supports] to see how that would work out, but honestly—because it has to be the same instructor who would do the online and the face-to-face and that makes it easy to compare, right, —same content, same problems, it's just the delivery method is different and see how it will impact teaching and learning.　　(T1-Staff)

5.1.6.　Experience of conducting a project

In the case of Team 2, the faculty members and support staff have been involved in three teaching and learning development projects and see this as a continuous process. They reported that the knowledge/experiences about doing action research accumulated in the first two projects somewhat helped or influenced how they were going about the third project.

One of the aspects they feel they learned is how to be able to work things out more efficiently.

> Because we got into some habits of certain things in [the first grants] this time with a different team composition we challenged a little bit, like why are we doing it that way? You know, will this be more efficient? … There should be, like why are we doing it that way, that doesn't seem like the most efficient way to do this thing, you know. We probably don't need to have twenty emails back and forth …. So it's good, there are changes as well.　　　　　　　(T2-I2-Staff)

> It's good, we are working really nicely, I'm telling you, we meet in Skype meetings and things, to get a general meeting with everybody it's quite complicated because of the schedule, so once we did one [a Skype meeting] with everyone, so five people, … we call it general meeting, but it's very nice, we work fine with Skype, and everybody, so we get along nicely. …　　　　　　　(T2-I2-Fac)

Some members from Team 2 also reported they gained experience on the importance of planning to keep things on the track.

> So I think we've been better at planning than [we were] before the first grants, and also because we had to apply for the grant, that forced us to do more planning also, right? So I think that's the change that has happened through this process-applying to the grants, we are needing to have more clear goals, put them in writing, we have been forced to put in writing more, and [these] interviews here also makes us think, right? OK, all these things make you plan ahead a bit more, so I think it's a bit more professional, maybe, I don't know, educationally professional, right. (T2-I2-Fac)

> Honestly, uh, that you do need a plan, and I have that plan developed, so ok , I had a plan, ... But when you start ... and if all goes well you don't realize the importance of it [planning], I tell you, when things don't go as planed, or when there is a little bit of lack of [planning] , there is a little bit of some challenges, then having that plan to look back on it, and to realize oh yeah that's why it was there, can sort of bring you back, can ground you, and you can always make an adjustment to the plan, but you always know, you know, you have something to work with, so uh, I think that it makes me realize the importance of documentation. (T2-I2-RA2)

The faculty member in Team 2 also mentioned her learning about the procedures for conducting this kind of project.

> ... now we go directly to create the evaluation based on the learning outcomes, ... so after analyzing these interviews, we will not do a deep analysis now, now we will do a light analysis just enough to give us the information to do the workshops, later we will do some deep analysis...And I'm not sure if it will fit or not in this grant, but in any case, yeah, now we know that we have to develop both at the same time, the workshop and the survey, before it was not. (T2-I2-Fac)

5.2. Finding 2 - About the Teamwork

Most team members perceived that they experienced many benefits from the teamwork involved in conducting the project. A few members also pointed out some issues with teamwork and provided suggestions for improvement.

5.2.1. Benefits of teamwork

Complementary knowledge/expertise

All the team members in both teams reported that one of the major benefits of teamwork is the complementary knowledge and expertise that each member brings to a team.

Some members mentioned that the complementary knowledge or expertise different members brought to the team made the completion of work more possible.

> So I think that our team worked very well together and I think the biggest benefit of doing the project as a team was that in this team……. so everybody brought something to the team. … So really I think that everybody contributed to the success of the project in a significant way.   (T1-Fac1)

> I think that is one of the great things that these projects actually provide is the ability for members from different Departments and different Faculties to get together and contribute to each other their own area of expertise.   (T1-Fac2)

> I mean I think in general it wouldn't have been possible to do as not a team, like I don't know anything about [certain subject matter], I didn't design that course, they don't know much about survey design, so of course—although I feel the responsibilities were too distributed and weren't well integrated—but that said of course the project happened and it went well, you know, so the benefit was the project was able to work at all, like it wouldn't have been possible without this collaboration.   (T1-RA)

> Actually working as a team it was great because we share roles and responsibilities and so it is great to work as a team otherwise if we are to do this alone, I don't think it's possible.   (T1-Staff)

A few team members also said that people from different disciplines could bring some different capacities to the team and people with different background could challenge each other by offering different viewpoints, thus making the project results stronger.

> Well it is great because we were really interdisciplinary and it has just been amazing. We all have really different strengths and different levels of experience in our different capacities, right, we have some that are more senior, some that are more junior than me, and so we all have something to learn and although it creates challenges in terms of time because we all want to talk about it and learn, but at the same time I think it gives us a lot of strength because we can challenge each

other on different capacities and on different viewpoints and challenge different assumptions that would otherwise have been just let go because if team members work in the same discipline they just have these assumptions that they work [with]—Similar beliefs and we all challenge it, like, "What about that and what about that?" And although it is a more challenging work environment, I think it produces much stronger results, more valuable and more—yeah, I think it makes the program stronger. (T2-I1-RA1)

The multidisciplinarity, the teamwork I learned a lot about [educational research] that I didn't know, so much so that after the project was over I took courses in Education and so now I understand better the language that I talk to with him [the RA] or whatever. Before he [the RA] would explain to me and so I learned a lot and it was an experience to work in a group, in a team, and also it is combining [Applied Science] with Education, which are two different styles of disciplines, right, so I'm becoming more humanistic kind of thing so it was really a very good thing. And also it made the workshop much more professional, the program more professional—everything is more solid. (T2-I1-Fac)

Learned something or benefited from each other

All eight members in both team said they had learned something or benefited or were inspired by other team members.

Some members said they had learned from the expertise of other team members.

Actually especially having RAs with good research background, that really helped us to situate the good research practice because even though I [am doing] all that now I'm quite distanced from that, right, so it is refreshing and all that—"Okay, we need to think about that, we haven't done that." Fine-tuning the whole research proposal, that was interesting. (T1-staff)

Yeah, I remember—so when we were talking about the initial survey creation, this was before the term had started and we were just looking at survey questions and [the other instructor] and I had some ideas about questions to ask and we were talking to the [RA] about this and the [RA] said, "Well, we shouldn't ask that question because the metrics aren't very well-defined. Ask a question like this because people understand the metrics around it." And [the other instructor] and I were just like, "Wow, okay, there is really something to this!" We don't have any idea about survey creation, so that I felt inspired that there is a definite expertise that comes with the creation of [surveys]. So that was really nice to see and very inspiring for us. (T1-Fac2)

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I mean we all—again, we all had really different and have different strengths and like one of the biggest things like I say I learned from [the other RA] was she recognizes her own challenge in working within this project and she utilizes this beautifully, you know, strategies to help herself help us, right, so she will write things down. Every time we meet she has a document ready. Like project management, like, "Here is what I want to talk about, here is what we discussed, here is what we agreed on," and it is on track, right, and that is something that I need to learn how to do because I'm like, "Oh, there is this idea and this idea and this idea." Yeah, and [the faculty member] is also—she is so passionate about what she does and she just wants—and it is good because on one hand it is very challenging because every time we agree on something she will come back with something new—"Let's look at this, let's look at this!" But at the same time it keeps us from being stagnant, it keeps fresh blood moving, right, it is part of this gives us passion to, "Hey, there is this great thing that could be done, we have to consider it, we have to look at this, we have to look outside ourselves every time." … At the same time there is a constraint of time, right, so it is these two things, right. We have the resource constraints but at the same time we want to incorporate as many ideas as possible to keep ourselves saturated in ideas and passionate. (T2-I1-RA1)

So we had to learn—they had to learn—the [Education experts] needed to learn a bit about the vocabulary of [our discipline], we had to learn about the vocabulary in Education, so we met a lot and so we were more interested in how we worked, so we were meeting—at times we were meeting once a week, I think, or every two weeks or once a week—I can't remember now—but we met a lot and we discussed a lot and so the outcome of that was a revised workshop maintaining the main contents but yet organized much nicer, and then we started offering that new version of the workshop and the research assistants joined with us and so sometimes it would be the four of us running the workshop with the students. (T2-I2-Fac)

Definitely. I think one of the biggest—the person who I have learned a lot from has been the other RA who has been on this team for a very, very long time so I came to understand how this project grew and once I had that overall perspective of oh, so this is how the project evolved, these were some of the things they experienced, and this is where they might want to go to, I all of a sudden I knew what my role was, right, in the sense that I knew some of the challenges that they were experiencing in terms of trying to maintain a little bit of structure and I knew that I could contribute in that way and so did the other RA.. (T2-I1-RA2)

The RAs in both teams said that they were inspired by other team members' dedication to teaching and/or ways of working with other people.

I mean almost all the students said that he's a really good teacher. And you know that came through … you know when he was talking

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about teaching stuff, he really cares about teaching which you know to a certain extent is very rare in university. So you know in a certain sense it's nice to see someone has that kind of passion for teaching and I guess that's kind of inspiring.   (T1-RA)

Sure, sure, and I think I am always inspired by one of the team members' dedication to the students, no matter what is about the students, it really brings you back to that I think, and then keeps it all grounded, and why are we doing what we are doing, another one is just being very tolerant to other people's ideas … so really moving away from that, even when you have you know a pretty nice plan, it doesn't mean that it can not be critiqued or evaluated, and in fact those things are valuable.   (T2-I2-RA1)

One of the RAs in Team 2 expressed the idea that when working with someone with a similar background or perspective it could be helpful to the project to bounce ideas off the other person.

…and so they met with her [the other RA] today and she will be starting and that makes me feel good, 'cause we speak the same language, and also I know she is familiar with technology, uh I am pretty sure that is going to be helpful for me as well to have someone to bounce ideas off, and uh, because I am missing that now, that I am alone. And usually the critical part is less I guess to do with the whole data analysis part, but when you are designing a workshop, it would be nice to have someone to brainstorm with, or to design with, it is probably more critical now than in the past, and I didn't have anyone, or I wouldn't have had anyone had they not found her…   (T2-I2-RA2)

Networking and learning opportunity for graduate students

In Team 1, the RA mentioned that engaging in this project was a good opportunity for him since he continued to work with other members in the team after the project.

I think certainly we came to the work quite well together, like we continued to work on a few things afterwards. … like working on publishing—like, you know, presenting the results and stuff like that. Yeah, like I had already kind of worked with [staff] a little bit but through this I came to work with [staff] quite a bit more.   (T1-RA)

He also stated that the involvement of graduate students into a project team is a great learning experience for students, and he expressed his idea of getting more students involved in this with supports in place. His suggestion included having a system that could benefit students, as a kind of learning cycle.

...so it is a great learning opportunity, I think. I think that is one of the great things about it so I think it would be great if students could be involved in this way more often, not just for faculty, I think for students it is a great opportunity. But I do think there needs to be some sort of supports in place. Like I said one of the issues is that there isn't the kind of expertise around or the people with free time so finding some way of maybe taking people who aren't quite—you know, graduate students, maybe master students or students who are just not as confident in doing this type of thing, you know, having them engaged and then maybe having someone who is more knowledgeable help them or something like that ... Because it is a great learning experience so I think it would be great if we can take someone who isn't right at that point where they can do this by themselves and have them involved in a project. You know, help them learn how to do it and then now they could help other people in the future or something. It would be great if we had some system like that. ... I think that's the thing—so I learned a lot, you know, and I think it would be great if other people could learn from it. (T1-RA)

5.2.2. *Challenges of teamwork*

Some team members perceived that working in a team also brings some challenges.

Time/scheduling concern

Some members expressed a concern about time and scheduling of the team members.

...there is always logistical challenges, you know, organizing schedules and bringing people together, things can take way longer than you ever imagined they will because you make one tiny step every two weeks. ... (T2-I1-Staff)

We couldn't do it without a team, right? It's good, we are working really nicely, I'm telling you, we meet in Skype meeting and things, to get a general meeting with everybody it's quite complicated because of the schedule. (T2-I2-Fac)

Well there is always challenge in teamwork. The major one is just being able to find a time that everyone can meet. (T1-Fac2)

Compartmentalized expertise weakens efficiency

The RA in Team 1 also pointed out that multidisciplinarity can have a downside if there is not an effort made to integrate everyone.

...but I think to me it is a problem when the expertise is so compartmentalized that other people can't fully understand—that no single person can fully understand the entire project, I think that that became a bit of a problem because there are so many things that you just wouldn't—like you can't like—there is just no way you can fully comprehend and optimally design a project if you don't understand all the particulars, you know. I mean you don't have to know everything but like even a general overview and I don't think anyone on this project—especially at the beginning like I said—has a full general understanding of how everything works.

like if everybody has different expertise, how do we work together in a way that we can actually share expertise in an effective way and really have a dialogue about how that all works rather than you do this, you do that, this is what you are good at—you know—and then we all just assume that we are doing the right thing. But I think a lot of research is done that way unfortunately, it is not ideal, but that is what happens so I would say that is the main challenge—just integrating things together well. (T1-RA)

Another RA in Team 2 expressed similar feelings, that the multidisciplinarity of team members could sometimes bring difficulty to reach understandings.

I am not sure whether or not this is a new learning, or just more confirmation on what I already suspect in the past, but working in a multidisciplinary team is very difficult, because you don't share necessarily the same language, or you don't use language in the same way, and as a result your conversations might, you might be talking at cross purposes, meaning you are using the same words, you think you understand each other but you don't, and then, or you never get to the point of understanding, so yeah, that can be, I mean, learning how to navigate the, uh, so the different working styles that people have, is not always easy, …. (T2-I2-RA2)

5.2.3. *Suggestions on teamwork*

Share expertise efficiently

One of the RAs had some suggestions on how to share expertise efficiently.

So I think a better system of being able to draw on everyone's expertise would be …—if there was some way to maybe have someone who knows more in general to maybe just help manage more projects but be less involved in any one individually. (T1-RA)

More discussion and negotiation

Another suggestion was made by the RAs in Team 2 to alleviate this concern of multidisciplinary weakness.

> ...but a little ambiguous in the beginning as to where we are going and there seem to be a little bit more, uh, misunderstandings at least, or just you know, people seeming to not always understand one another, and there was a lot of discussion I think in the end that was actually fruitful, like some tension is fruitful because it does make you think about what you want to do, but I think people have to discuss it, instead of like, you know, we always want everything to work smoothly, but I think sometimes discussion, and being very straightforward about where things should go and also, but at the same time being open to hearing another person can make you realize, "ok this is how far I want to go, this is how far we need to go, and this is ideal," you know, or "here we just don't agree, "and I think that's extremely important to be open about it, but also to be open about expressing it, articulating it, but also to be open in terms of realizing that other people may not agree or being open to other people's ideas because it actually may be better for a particular situation.   (T2-I2-RA2)

5.3. Finding 3 - Satisfaction

Most team members indicated that they were satisfied with all aspects of their project experience, including the support provided, the process of conducting the project, the findings of the project and the dissemination of the findings.

5.3.1. *Satisfied with the supports*

Many team members expressed their satisfactions about the support they received. One of the faculty in Team 1 said "I think we got all the support we needed and then even more probably…Oh yeah, we were absolutely satisfied with the support." (T1-Fac 2)

A few members mentioned that they are satisfied with the supports from educational research experts outside the team.

I mean we had great support. [Education expert] was a great support, really, and she helped us—the way how she helped us was first to put our grant in a form or the proposal that was proper for this kind of research, we didn't have any experience with that before, and really just thanks to her guidance we were able to put what we wanted to do in the right form. Secondly, once when the grant was approved, [she]helped us to find the research assistants and without that, again, we wouldn't have been able to do this project. So that was really, really crucial I think. And then we had the support from our Department in a way that the Department was already to allow us to do this survey. We had the support from [the centre one of our team members serves]—I think that they were able to provide some money also for this project, so all together that was a quite positive experience ...   (T1-Fac1)

I believe [a new aspect of support are] individuals who do some literature review on behalf of grant recipients, so that's something we are gonna explore taking advantage of, be wonderful to have some, you know, people who have skills in literature review, people finding us relevant articles, that's something that we definitely want to take advantage of   (T2-I2-Staff)

The grants provided funding to each team, thus they could hire RAs to join the project team and this was seen as a great benefit.

...while the thing is, thanks to the grants, we can pay [RAs], without the grant, we wouldn't be able to pay these experts in Education, right? So my background is in [discipline], I have taken some courses in Education, ... but they are experts in Education, without the grant, we would not be able to hire them. And both [the other instructor] and I are very, very busy, so without these extra people that we can pay them, we would not have reached this far, right? Because the two of us, we were running that, doing some surveys, that was it, ... with these research assistants, then we started with the pre and post, and I took a course about research methods, there I was like "Ok, now I see what we were talking about here, right? ... so [RAs] would explain things, and I was like "how do we", and [RA] has some background in [my discipline], so she was kind of like translating ....   (T2-I2-Fac)

You know, the research assistants brought experience and expertise in research methodology --qualitative research methodology and learning outcome development and that sort of thing, so it really informed what we were doing a lot more, I think—yeah.   (T2-I1-Staff)

...other than that the [RA] came in and they give you such a—data collecting and analyzing—that part went smoothly and then the writing of the report—I think it went smoothly.   (T1-Staff)

5.3.2.   Satisfied with the process

Many team members mentioned, in different ways, that they were satisfied with the process of conducting the project.

In both teams, some members expressed their delights with having a better view of student learning processes as well as their own involvement with students.

> And you can see things unfolding you can see how students are interacting with it and so when we were delivering the workshop say in [course], there was really good discussion and students really appreciated it, good feedback, uh, and so that's the big delight.
> (T2-I2-Staff)

> I guess the delight is actually knowing that I'll be—I'm working on something that I think is useful, that you know you are going to be helping other people in terms of learning. It is kind of exciting to be able to have the opportunity to work with—to do something that makes a difference in a very practical way and because when we conduct research, at least what I have found with my limited experience in that area, is that a lot of things we do go into the journals and to conferences—it doesn't directly impact the students.
> (T2-I1-RA2)

> That felt really good because it meant that there was something we were doing in the classroom that was affecting these students in terms of the material that was being presented and that was not coming across in the videos. If it was coming across in the videos then these students wouldn't say there was a difference and that they appreciated them, so there was something that we were doing in the classroom and that was really nice to see.   (T1-Fac2)

Both the RAs in Team 2 expressed their delights at having the project they worked on recognized as being successful and attracting a proposal to adapt it for another Department. As one of them stated:

> Delights. I think we are finally at the stage of acceptance within the organization and the institution, and having the possibility to talk to the instructors, you know, involving other stakeholders, I think it's a great thing because at the time, you know, three people running a program, just sort of, like really small scale, and now that we have this grant and we are expanding to [another Department] …, it's another stakeholder group, it's another population, so really being able to see it [be used in another Department], … has been really nice, because I think it will bring a fresh perspective …   (T2-I2-RA1)

A few members also said one of the delights was to see the progress of their projects.

> Well to be able to continue to consolidate this thing and to expand, it's a challenge to expand…, so it's becoming more scientific in a sense educationally speaking, and now we have incorporated another type of measurement, that's quite challenging and interesting, I don't know, so the delight is to keep advancing. And see that the students seem to be getting something from it, you looked at those surveys and you say, ok, this was influencing them. (T2-I2-Fac)

5.3.3. *Satisfied with the project findings*

Some team members mentioned that they are particularly satisfied with the findings of their projects.

> I think that we worked together, and we produced, and we had results and that is also kind of a surprise when at the end of the project and I was putting this report together - when I compared what we put in our application for the grant and how we described the project and then at the end we did almost everything we wanted! (T1-Fac1)

> Yeah, it was surprisingly good quality. I guess another thing that surprised me was actually how well the results turned out. The correlations were all very, very strong—at least the good results. There were some very strong and clearly non-random correlations, like there were correlations that was as high as I think .6 or .7'ish and those are very, very high especially in social science [research]. I mean they were Spearman correlations so they were just by rank, but that's fine. It was really good in that sense. Yeah. The main thing I was surprised about was how well the results turned out because to be honest when I started the project I was pretty certain the results would not be very good, I mean because it is a non-random sample, we were not using a validated instrument. I did find one scale, the stuff about student interaction is from a validated instrument, but the vast majority of the items I made up. … But the results turned out very, very well both in terms of sample, quality and in terms of the results were very strong and for the most part had clear or relatively simple interpretations that made sense so that was surprising in a way. I was pleasantly surprised by the results of the study. (T1-RA1)

> … we created a whole [revised] model putting everything together so it makes more sense—we now give the students a message and we run the workshop according to that message so we are all very proud of the result—yeah. (T2-I1-Fac)

5.3.4. Disseminating project findings

Grant recipients are required to share their findings with at least colleagues in their Department. The findings from these two projects were shared in a number of ways.

> Yeah, so this is the first time we did a research like this kind of comparison and when I talked about this to other people here in [my academic unit] they were really impressed with the research and the findings so I think that has kind of initiated the need to do more research..., so this kind of research will actually help people to understand when they are designing courses and also planning teaching, so I think this is a good start but we need to do more.
> (T1-Staff)

> The revised version, yeah. And we even created—we found ourselves offering the workshop as training material for future opportunities and analyze that data and wrote a paper—wrote a paper about this new version and explained a little bit the change to the new version and how now there was an alignment between learning outcomes and the workshop and the survey. (T2-I1-Fac)

> ...then also that [there has been an] opportunity to share [our findings] and engage in conversations [with others] - that has come up quite regularly, right, so that is an additional benefit, I guess.
> (T2-I1-Staff)

> And, you know, the community has been really helpful. I know that when [support staff] and [faculty] presented their poster people get interested and ask questions and those questions drive us, right.
> (T2-I1-RA1)

5.4. Finding 4 - Challenges

A few members also mentioned some challenging moments or feelings related to being involved in the project

5.4.1. Project complexity

Many members in Team 2 perceived the complexity of the project which was a bit challenging for them.

> Well one of the things I learned, you know, was how detailed the learning outcome development process is. You know, how complex, how messy [chuckle], kind of messy, complicated, time-consuming—I

mean all really worthwhile, right, really worthwhile exercises, but they didn't come easily, you know. We've really worked hard [chuckles]. A lot of discussion, four people discussing and then trying to reach a common understanding of what we thought the learning outcomes should be, … so it was very complex.　　　　　　　　　　(T2-I1-Staff)

The challenges may be this whole organization that the whole proposal has so many components so it has been quite an interesting process. And the timing, we have to accommodate the different courses and the fact that we have to train more people.　　(T2-I1-Fac)

I'll say this—I think it made us all realize that this project is multifaceted and by that I mean—multifaceted—just very complex. Because the rigor introduced by this quantitative evaluation—[made us think]—is it meeting its goals, is it doing what we want it to do, what is its effectiveness and relevance? So because we had to answer that question, we had to give ourselves the smaller questions—what is our population, what is our goal … And I think that by narrowing down the questions we came up with so many different goals and objectives that we had and we really realized how complex it was. … But the whole idea behind it, what we tried to do, the sort of big picture behind it was so big, [and] this new project is an expansion to [another Department] …, it's a different [group of] faculty saying, "Hey, this is valuable," and it is not just valuable to [the Department where the project previously conducted], it is valuable to different majors, right, and so I think that was one of the biggest things was realizing there is so much behind this and we have to start slowly unpacking it if we want to make it better—yeah.　　　　　　　　　　(T2-I1-RA1)

5.4.2.　Workload

Some members in both teams also considered the heavy workload as challenging for them.

… Um, I don't know, see what happens with this is that you work in—there are moments that are very intense and I'm working on the [workshop program] day and night almost, and then there are some weeks that we don't because it is not the time to run them, so the way this whole thing is that sometimes I'm so, so stressed with time it is just ridiculous, … I think we are fine, it is just sometimes it is very time-consuming.　　　　　　　　　　(T2-I1-Fac)

When we were about to write the report then that kind of took more time than I expected and one of the reasons was that actually at the end our report is more than 300 pages when you put everything together. When you put everything together it was really like a thick book. So maybe the fact that I didn't understand how big that task was - maybe that was the reason that I was kind of impatient to put that report together.　　　　　　　　　　(T1-Fac1)

>Actually I did this on top of my workload so sometimes I had to work from home, like extra work, this is because it is not part of my job kind of thing, so I wish I had more time dedicated in there for especially the teaching part. (T1-Staff)

The support staff member in Team 1 expressed her willingness to do more of this kind of inquiry project, but she also pointed out that since only continuing faculty are eligible to head up grants, she has to find a faculty member to get the grant so that's the challenge for her.

>… actually I want to do more because we are planning courses and … I want to know whether that is the most effective way whether it has an impact on student learning so I want to do more research on that so that's why I said to [Education expert]— could we do more? … The grants are only for faculty members so I have to [team up] with the faculty members to get the grant so that's the only challenge for me to do the research. (T1-Staff)

6.   Discussion

The purpose of this study is to explore the comprehensive experiences of faculty members (and other team members) in conducting action research. To remind the readers, this study was designed to investigate the following two questions.

1. What do faculty members (and other team members) perceive they have learned from the process of investigating teaching and learning as an action research project?

2. How do faculty members (and other team members) describe their experiences in conducting an action research project?

By using qualitative inquiry, the data was analyzed and the four major findings were presented in the previous chapter showing multiple perspectives of the team members. The finding that faculty members (and other team members) indicated they had improved their professional knowledge in the action research process addressed the first research question. Findings related to the experience of being involved in the process of doing action research attended to the second research question.

This chapter provides a discussion and interpretation of these findings. The structure for discussion is organized by two broad categories:

1. The development of professional knowledge through action and reflection in conducting action research;

2. Experiences in the process of conducting action research:

• Experience of teamwork, including benefits and challenges during the process.

• Satisfaction with support provided, the process of conducting the project, the findings of the project and disseminating of the findings

• Challenges experienced in conducting the project.

6.1. Category 1 - The development of professional knowledge through action and reflection in conducting action research

The first research question asked: What do faculty members (and other team members) perceive they have learned from the process of investigating teaching and learning as an action research project? As reported in the findings, all the team members perceived improvement of professional knowledge including: Knowledge of students and student learning; Knowledge of pedagogy and instructional design; Learning about educational research; Changes made to teaching; Plan on future inquiry; Experience of conducting a project.

6.1.1. *The dynamic process of doing action research and the effects on teaching practice*

As discussed in the conceptual framework section in Chapter 1, Theall and Centra (2001)'s model frames my study as it highlights the dynamic process of action research and the effects of this on day-to-day teaching practice. The theory and knowledge about teaching and learning, the process of doing research and the improvement of pedagogical and professional knowledge interact with one another and co-develop in a dynamic way and this is consistent with what I have found in this study. Therefore, the discussion of these aspects cannot be viewed separately.

Both project teams used surveys to collect data and based on the findings, project team members reported that this improved their understanding about student learning:

> And the other thing was [the learning software] was stated by many students to be a frustration, a point of frustration. Yeah. I think it was more of a frustration for, if I recall the data correctly, a lot of frustration for the online students, the distance ed students rather than the face-to-face students, and I think this had something to do with the face-to-face students had the drop-in tutorial centres where they could go and they could get more help with weekly assignments and this included the online questions as well, they could print off the question, bring it in to the tutorial centre and then work with a TA and try to understand it. (T1-Fac2)

And one of the things I found in [the survey] that students have this issue with effort regulation, meaning that they don't regulate their effort, or, well, in a sense that may not be persist in doing, they may not persist on working on a particular problem or on their work as well as they should, another problem was help seeking, they won't seek help unless they should, I mean when they should, and it's confirmed in my interviews.   (T2-I2-RA2)

In these two examples, the knowledge of student learning for the faculty member and RA in different teams was derived from the data they collected in the project. By using tools such as surveys they were able to increase their knowledge about the student learning. This learning process during action research is also described by Walser (2009), who conducted an action research project and then published it: "In addition to helping me improve instruction, the self-assessment exercises helped me get to know the students better both academically and personally" (pp. 304-305).

On the other hand, by using tools such as surveys to collect data about students and thus paying more attention to the students, the faculty members accumulated more knowledge about pedagogy and instructional design. The increased learning of pedagogy and instructional design, in turn, helped faculty become more and more cognizant of the importance of interaction with students. As one of the faculty members (T1-Fac1) in Team 1 said "I think that what I learned from the project is really that what we say in the class, the way how we interact with students really matters and I think that I'm aware of that more than before." Another faculty in Team 2 described how she interacted with students and how the knowledge learned from the interaction influenced her instructional (workshop design in this case) design process.

Well the feedback that we received is absolutely used in the workshops, … there is one part in the workshop where we discussed different problems that students may face and we have a discussion and we always ask them to tell us what their solutions are, but after a while I start telling them, and I tell them things from previous workshops and I tell them, "In some previous workshop this was mentioned or this was mentioned," so I've collected lots of anecdotes and suggestions from previous students, so we are directly, directly using the feedback from the students. Not only because of the surveys—that's why I was telling you—there are two sources where we hear from the students: the workshops themselves because the students are giving their suggestions, and the surveys, and very often it's in the workshops when they mention, "I would recommend that this is done in this situation," and then it comes the next workshop

and I say, "Well, this student mentioned this", or we have a set of things that we always make sure that we mention … So I'm learning from the students and I'm passing it to the students literally, directly, right.   (T2-I1-Fac)

Other researchers have also discussed how action research projects have improved or changed their involvement with students, as a result of increasing their understanding about the students and student learning. In Walser (2009)'s study, the author expressed that "…the self-assessment exercises helped me improve my interactions and relationships with students" (p. 304). And in Kember (2002)'s study that described an initiative that aimed for quality enhancement of teaching and learning through supporting academics to engage in action research projects, one of the long-term outcomes of the initiative was: teaching became more student-centred (p. 93).

6.1.2.   Reflection

Trigwell and Shale (2004) indicated reflection is one of the major elements of practice in their model of the scholarship of teaching. The reflection, together with teaching, evaluation, communication and learning composed the practice component of scholarship of teaching, which essentially captures the action research process - the activities faculty members or other team members are involved in when conducting action research projects.

In Clarke and Hollingsworth's (2002) interconnected model of professional growth, it is suggested that "change occurs through the mediating processes of 'reflection' and 'enactment' " and "change in one domain leads to change in another" (p. 950).   The four distinct domains are: 1) the personal domain including teacher knowledge, beliefs and attitudes, 2) the domain of practice focused on professional experimentation, 3) the domain of consequence focused on salient outcomes, and 4) the external domain providing sources of information, stimulus or support. I argue that in my study, there is evidence that the reflection process enabled team members' change in different domains. To illustrate, their refection in doing educational research (e.g., reflection on survey results) increased their knowledge about students, and then by reflecting on this newly gained knowledge, they changed their understanding about student learning which led to changes in their teaching practice. In this whole process,

reflection is like a catalyst that prompted change and professional development. What is obvious in my findings, and consistent with what the models discussed about reflection, is that knowledge about teaching and learning and educational research cannot easily be accumulated and reinforced without team members' reflections throughout their action research process, as well they became more reflective by doing action research.

For example, this member in Team 1 learned something useful about teaching through his reflection on students learning in the action research project.

> I think a lot of that had to do with, like I said, the fact that there was something to do every week, just to keep students engaged—so, yeah, I mean I did learn something useful that I didn't apply teaching [before this time].   (T1-RA)

In Team 2, one of the members pointed out that by doing action research, she became more intentional, explicit and reflective about pedagogy and instructional design (workshop design in this case).

> Yeah, definitely it reveals something about teaching to me. So we took a much more—in teaching the workshop, let's say, we took a much more intentional … you know, the idea of having the learning outcomes and then designing the workshop from there and then following through to see if students actually got the learning outcome, so it was much more intentional than I think our previous approach. I think our previous approach was maybe a bit more intuitive, right….so this is much more intentional, much more deliberate …   (T2-I1-Staff)

West (2011) supported this perspective by saying, "Reflective teachers are always searching for ways to improve their teaching. When this reflection becomes intentional and systematic, they are engaging in teacher research. This type of research, sometimes called action research, can help bridge the gap between theory and practice by addressing topics that are relevant to practicing teachers" (p. 89). In this statement, we can see that doing reflection or being reflective teachers is recognized as a typical feature of practicing action research.

Some other empirical studies also reported that by being involved in action research, participants became more reflective about their practice. For example, In Kember (2002)'s study, the outcome of action research was examined. One of the long-term outcomes is: "developing capacity to reflect upon their own teaching" (p. 95). And

Kember also described the reflection process, "First, the process of reflection led to insights into better approaches to teaching and a greater understanding of student learning. Secondly, and perhaps more importantly, by engaging in this collective reflection the participants realised the importance of reflecting on their teaching and hopefully should adopt a reflective stance in the future." (Kember, 2002, p. 96)

Although these empirical studies concluded that by being involved in action research, participants became more reflective in their teaching practice, they did not specifically link this to teaching practice as do these two individuals in my study.

> ...it's an opportunity for me professionally to evaluate and assess and reflect on what, you know, the work that I do with students in many contexts, right, so it has a broader impact on me personally/professionally in terms of my interactions with students than just [this program]   (T2-I1-Staff)

> The other part of the project—major learning experience out of the project—was creating an online course when you know it was going to be difficult to begin with, speaking just in terms of [my discipline]. It seems to be one of those courses that students really need a guide on the side, an experienced person—TA, tutor marker, instructor—to bounce questions off and speak with about... so that we knew was going to be difficult—doing [my discipline] over distance education. And we tried to alleviate this problem a little bit by doing the video content but it was still quite difficult for the students to get a hold of this material, to get the help that they required, and most of face-to-face students get help in our drop-in workshops, our drop-in tutorial centers, and so they have a person that they can talk to, sometimes the instructor. But with the online classes it was just through the text chat rooms and that part we found needs to be improved.   (T1-Fac2)

6.1.3.   *Exploring the process of conducting action research*

What I found in this study is that many team members described the process of conducting action research as a process of exploration and discovery. This seems to be consistent with Carr & Kemmis's (1986) widely cited definition of action research in which they identify one of the features of action research as follows: "the project proceeds through a spiral of cycles of planning, acting, observing and reflecting, with each of these activities being systematically and self-critically implemented and interrelated; …" (pp. 165-166)

A member from Team 2 mentioned the discovery process explicitly, "So we kind of—it was a discovery in a sense, which makes sense now, but how the three components needed to be aligned" (T2-I1-Fac). And another member of Team 2 supported this:

> ...right now we are doing a needs assessment for the second workshop and within the context of [the discipline] through interviews and gathering student survey data and things like that—but what we learned in that first project and intend to apply here is the idea of, you know, looking at learning outcomes and then from there designing the workshop and then from there designing surveys kind of thing, so that process that we stumbled upon kind of in the first grant we now have a process in place. (T2-I1-Staff)

Not only was instructional design described as an exploration process, learning about educational research was also described in these terms. A faculty member in Team 1 mentioned that conducting action research is a somewhat novel experience for them, and brings another lens to look at education in his field:

> Sort of the experience has now underlined a lot of the things that I'm doing in the future as well. We are looking at more of these grants and trying to pursue the understanding of education [in my discipline], ..., from a few different lenses now from the content perspective through the material that we teach, and what needs to be done for the other courses. But now from this perspective of what is working, what is not working, how can we use inquiry to understanding how we can better change the courses for the benefits of our students and faculty so, yeah, it has just given me another lens to look at stuff with and I'm very appreciative of that.
> (T1-Fac2)

The idea of exploring and discovery could also describe the team members' experiences in learning how to conduct the action research projects. This was especially true for Team 2. They reported learning a lot from conducting their first two projects and were applying that to their third at the time of this research. As one of the members stated:

> We are planning more than before, a whole description of how the needs assessment will be, how the program will be, we are planning much more, we are looking ahead much more, before it was less planned, and more "ok, let's do this, let's do that". So now we are more planning (T2-I2-Fac)

In another example, another member of Team 2 described learning how to work things out and how to make the project progress more smoothly.

> … regular team meetings, you know, with the whole team, the research assistants, and [faculty] and myself, so you know, we kind of in [Workshop1] developed this system of getting together with team meetings, and we've continued that now even [as] the team make up has changed, you know, that kind of process continues, well we have this kind of regular team meetings. And decision making process is kind of the same … we kind of have a better sense what everybody's role would be. So that certainly carried forward, uh, the idea of delivering surveys, when we do workshops at the beginning and the end of the semester and also immediately follow the workshops, that's something we developed when we were in small grant, and now we've continued that here. The sort of revision process that we do so whenever we were working on a document that we circulated and we give feedback and input, you know, it's really I think continued from that first [grant project]. (T2-Staff-I2)

6.1.4. *Becoming more professional practitioners by doing action research*

Ponte, Beijard and Ax (2004) argued that "Teachers can use action research to try to gain insight into their practice. Developing professional insights through action research is about knowledge that teachers develop themselves. So, action research is conceived as a strategy teachers can use to make their work more professional" (p. 593). Referring to action research in higher education, Norton (2009) stated the fundamental purpose of pedagogical action research is "to systematically investigate one's own teaching/learning facilitation practice, with the dual aim of improving that practice and contributing to theoretical knowledge in order to benefit student learning" (p. 59). In this study, there are many examples of members' reporting an improvement in their teaching practice. Equipped with this different kind of knowledge resulting from reflection through action research, the members described feeling more professional, more intentional and more systematic in how they approached their teaching practice. For example, they reported being able to make better decisions which ultimately benefited their students. One team member remarked: " … it allowed us to become more formal with whatever we were doing … we approached it much more systematically." (T2-I1-Staff)

Theall and Centra (2001) in their Scholarship-Improvement-Practice Synergy model discussed the relationship between research, theory and practice in scholarship of teaching. They argued that the scholarship of teaching builds professional knowledge because it involves not only the use of existing research and theory, but also the application of the scholarly process of action research to produce new understanding. McGee (2008), in describing the outcomes of an action research project that aimed to improve professional development experiences for a group of English as second language advisers, described one of the main areas of success as: "bridging the gap between theory and practice by reconstruction of professional knowledge" (p. 243).

In this study, the RA in Team 1 was able to put into practice his knowledge of theory and research methodologies, and by doing so, he improved his understanding of doing educational research

> I mean there is always the difference between theory and practice, right, and how specific anything is. Like I know research methods, I've read about inquiry into teaching or evaluations and all sorts of things like—but this is the first time I sat down and like actually did a teaching inquiry project specifically, you know, like I knew the theory of it, I knew how to do research. I guess it is probably the first time I've done research on someone's teaching in a course that was happening. (T1-RA)

> … , like it was a really good learning experience, you know. Like I knew survey design before, of course, but I got better at it by working on this, I got better at statistical analysis, I gained a lot of insights about teaching by working in a team. I learned a ton from this project—you know. Like I learned a lot more from this project than I did from many courses I've taken, you know, so it is a great learning opportunity, I think. (T1-RA)

6.1.5. Lasting effects on teaching practice

In Kember (2002)'s study, a "lasting effect on teaching" (p. 92) was concluded to be one of the long-term outcomes of an initiative that aimed for quality enhancement of teaching and learning through supporting academics to engage in action research projects. As stated in his study "Many participants said they had acquired a deeper understanding of teaching and this led to a greater willingness to employ more innovative approaches to teaching" (p. 93).

This statement of the benefits of action research is supported by the findings of this study. Many team members mentioned that they had started to make some changes in their day-to-day teaching practice because of being involved in the project, and some of them also started making plans to do further investigation.

In the following excerpt, a faculty member from Team 1 explained how he used his knowledge of using surveys, gained from doing the project, in another course.

> I mean one of the surveys I've done in a class was just how were students doing their homework assignments? The assignment has been handed out on Tuesday and it is due on the following Monday— when do you most frequently work on it? Is it the two days before it is due, the weekend? ... There is a whole bunch of questions related to that, which are just merely for informal gathering of information for myself just so I can get a feeling for how the homework assignments are being used, and from that maybe give more direction on the homework assignment itself saying, you know, have the good majority of questions from this grouping done by such and such a day and then work on these questions for the next few days after that, etc., so giving some more structure on the homework assignment based on these informal findings. (T1-Fac2)

Similarly, a faculty member in Team 2 expressed that what she learned has prompted her to explore other teaching and learning questions in other courses.

> I'm doing things that have nothing to do with these grants [which focus on the workshop] in my own courses now so I'm doing other explorations related—in fact I thought of maybe I could do another small grant, but it wouldn't be [this program], right, so I've become more into this style of work and developing new tools for my courses, right, and then investigate and so now I'm much better at building the surveys after we learned about the surveys and how to evaluate and get the feedback from the students. (T2-I1-Fac)

In addition to taking action on teaching practice, what the team members learned also is leading to planning future inquiry. For example:

> So this project seems to have seeded our interests in this as sort of a more future endeavor so we are starting another teaching and development project in the Fall and we hope to do many more of them from the basis on this project that we initially worked on so, yeah, it certainly opened our eyes that there was something we could certainly do here. (T1-Fac2)

In summary, the first finding of this study indicated that the most important outcomes of being engaged in the action research projects was knowledge of students and student learning, knowledge of pedagogy and knowledge about educational research. All are important aspects of professional knowledge, are tightly related and were co-developed in a dynamic way through participation in action research. But in addition to describing the outcomes of the action research process, team members also talked about the process of reflection. It was the reflective process, an integral part of action research, that led to the development of professional knowledge and the improved professional practice. The actual 'doing' of action research was described by many team members as an exploration or discovery process, a systematic process of learning and development. Most interesting was that many team members described making or planning changes to their practice outside of the project, for example to other courses they taught. As Greenbank (2007) stated, "educational action research represents an opportunity for improving teaching and learning and developing the knowledge and skills of those participating in the process." (p. 97).

6.2. Category 2 - Experiences in the process of conducting action research

This section focuses on findings related to the second research question: How do faculty members (and other team members) describe their experiences in conducting an action research project? In the previous chapter, team members discussions of their experiences in being involved in conducting the project were presented and included reference to: the satisfactions and challenges they experienced and their experience of teamwork. This section focused on the discussion of these findings.

6.2.1. Experience of teamwork

Overall, all members in both teams valued teamwork. Among their descriptions about their experience of teamwork, the multidisciplinary team composition was most frequently mentioned.

Multidisciplinary team composition benefited both the projects and team members.

As mentioned by some team members, the composition of members from different disciplines made the completion of the projects possible and also made the program results stronger. For example, one of the members in Team 2 stated that the team brought much greater richness, and the amount that could be accomplished was greater than could be accomplished by a single person.

> Well certainly there is much greater richness [of] expertise, … and so it certainly bringing all of that together makes very rich amount of experience to draw on, which I think no one single person could ever match, right? Also there is distribution of labour, right? Which is immensely helpful, you can get so much more accomplished than any one of us could do alone, you know, dividing and conquer.
> (T2-I2-Staff)

Another team member mentioned that interdisciplinary teams could bring different strengths and capacities from different people, and members with different viewpoints can challenge each other and thus produce much stronger results.

> Well it is great because we were really interdisciplinary and it has just been amazing. We all have really different strengths and different levels of experience in our different capacities, right? … but at the same time I think it gives us a lot of strength because we can challenge each other on different capacities and on different viewpoints and challenge different assumptions that would otherwise have been just let go …I think it produces much stronger results, more valuable and more—yeah, I think it makes the program stronger.
> (T2-I1-RA1)

In addition to the benefits for conducting projects, this multidisciplinary team composition also benefited and inspired team member in terms of supporting their learning and changes in both expertise and attitude towards teaching.

> … this experience working with [RAs], you know, as people from Education and with that kind of background that really helped us to understand better what we are doing ourselves. You know, if you are a [discipline] teacher for many years you think, "Oh, this is just another class." But [the RAs] helped us to understand that data better and to get message clearer than we would do that ourselves. (T1-Fac1)

Sure, sure, and I think I am always inspired by one of the team members' dedication to the students, … keeps it all grounded, and why are we doing what we are doing. Another one is just being very tolerant to other people's ideas and not let anything if that's not out the box it doesn't belong kind of idea, so really moving away from that, even when you have, you know pretty nice plan, it doesn't mean that it can not be critiqued or evaluated, and in fact those things are valuable.   (T2-I2-RA1)

The teamwork also brought some extra benefits for the RAs. As mentioned by the RA in Team 1, he considered working with faculty and support staff as a great learning experience and an opportunity for building networking. He also suggested engaging more graduate students into this kind of project.

It was a great learning experience and ……. they were great people to work with and I'm still working with them on other things—that's another thing too, it's a great networking thing.   (T1-RA)

…so it is a great learning opportunity, I think. I think that is one of the great things about it so I think it would be great if students could be involved in this way more often, not just for faculty, I think for students it is a great opportunity.   (T1-RA)

Project teams are not a common characteristic of action research projects reported in the literature. I found only a few other empirical studies that mentioned project teams. In Wright, Finelli, Meizlish and Bergom (2011)'s research, the authors described the Investigating Student Learning (ISL) program to fund faculty and faculty / postdoc / graduate-student teams to pursue SoTL research on courses and curricula. The ISL grants created a structured role for graduate students and postdoctoral research fellows as co-applicants and co-investigators with faculty. They concluded that "This participation benefits both the projects and the students" (p. 52). However, the authors didn't give detailed descriptions about how this team composition benefited projects and the people.

Downside of multidisciplinarity and the possible solutions

What I didn't learn from the current literature, but emerged in this study, is that the multidisciplinary team composition can also have some downsides, such as the difficulty to sometimes reach common understandings and the difficulty of integrating different knowledge, as reflected in the following examples.

...but I think to me it is a problem when the expertise is so compartmentalized that other people can't fully understand—that no single person can fully understand the entire project, I think that that became a bit of a problem because there are so many things that you just wouldn't—like you can't like—there is just no way you can fully comprehend and optimally design a project if you don't understand all the particulars, you know.   (T1-RA)

I am not sure whether or not this is a new learning, or just more confirmation on what I already suspect in the past, but working in a multidisciplinary team is very difficult, because you don't share necessarily the same language, or you don't use language in the same way, and as a results your conversations might, you might be talking at cross purposes, meaning you are using the same words, you think you understand each other but you don't, and then, or you never get to the point of understanding, ...   (T2-I2-RA2)

Some suggestions have been proposed by members in this study, for example, one of the RAs suggested having more negotiation in teamwork.

.... it's very difficult to negotiate the professional aspirations as well as timely interests of a large group, our large mixed group that is mixed of educational professionals, students, faculty and faculty at different levels, have different agendas, ... it's very hard to perceive what that something would look like before you start working in it, when you start working in it, it become clear that different people need something very different from this, from working on the project, and then it becomes a push and pull of agendas, and it becomes really, really challenging, so what I have learned is that it required a lot of negotiation to push a project like this forward, ...   (T2-I2-RA1)

In summary, in this study the general experience of teamwork was reported to be positive. With teamwork and multiple expertise from different members, the teams were able to complete the project more efficiently and probably had stronger results. The downside of teamwork reported by a few team members was also not surprising, in fact, teamwork per se is a complex concept, however the issues related to efficiency and expertise integration and communication is beyond the scope of discussion in this study. What I learned from the team members is that although there are some downsides, (such as how to integrate expertise more effectively and how to communicate and understand each other better), this will not affect the progress and the completion of the project in a major way. In addition, solutions such as more discussion and negotiation were proposed by the team members of this study, and these suggestions are convincing since they were based on the experiences of those involved. All in all, based

on the feedback from the team members in this study, one can clearly see that the benefits of working in multidisciplinary teams were well recognized, and thus this multidisciplinary team composition is worth advocating. In fact, organizers or coordinators of university level teaching and learning development programs should consider this multidisciplinary team approach to action research projects.

6.2.2. Delightful and satisfied experiences

Team members expressed their satisfied experiences in different aspects and in different ways. Overall, the team members were satisfied with the general experience of conducting action research.

Supportive environment

The two project teams were supported through an initiative at Simon Fraser University, the Teaching and Learning Development Grant program (TLDG). The initiative provided supports in many different ways (detailed description has been included in Chapter 3). Many team members said they were satisfied with the supports in doing action research and this was one of the delights they experienced in the process.

> Very much so, I mean I think [Education expert] was just an amazing support. Yeah. And what is also important, you know, in a gentle way, so it was never like, "Oh, you do this, you do this, you do this." It was always, "Oh, what if, … So that was also helpful that she was rather leading us through this than telling us like to do, to do, to do.
> (T1-Fac1)

> So I guess the grant—the grant made a big difference because if we hadn't had the grant we would not have been able to hire [the RAs] and without [the RAs] we wouldn't have had that influence from [Education] and by having that it made all … more formally research-based and so it changed qualitatively the work that we had already started to do and to me I learned a lot and I want to study more …
> (T2-I1-Fac)

In these two examples, we can see that the members very much appreciated the supports they received from the grant program, and the supports were meaningful to them. The money provided by the grants allowing the hiring of the RAs and the outsider support from Education experts together created a supportive environment for

conducting action research. One of the faculty members in Team 1 at the end of the interview expressed his appreciation of the chance to work with people in Education and to receive supports from the grant in conducting such a project. He discussed the merits of collaboration between faculty in different disciplines and researchers from Education and believed that everybody can benefit from this collaboration.

> Well if I should try to put some conclusion on this is the following—that if you want to really understand teaching and how our teaching influences students at this post-secondary level, then you really need to find mechanisms-- how to put instructors and researchers from Education together, you know. That is an experience for me that I didn't have before and I think that if we do this more that could help everybody, that could help instructors to do a better job, that could help students to get a better experience, and that would help our institution just to be a better place to work and to study.   (T1-Fac1)

In fact, many universities have initiated university wide programs to support action research as a faculty development strategy (e.g., Gray, Chang & Radloff , 2007; Kember , 2002; Wright, Finelli, Meizlish & Bergom, 2011; McGee, 2008). The evaluation of the university level program indicates that participants benefit from the supports of the program in terms of the professional development experiences. And the findings in this study confirmed that. In addition, what team members said clearly indicated that they appreciated this opportunity and the supports they received, this is encouraging for those leading this kind of university wide initiative.

Progress, findings and student learning

Members also expressed their satisfaction of seeing the project progress, seeing improvement in student learning, and seeing the findings of the project.

One of the biggest satisfactions reported by team members was about student improvement. As one member stated about the workshop:

> To see the students, the student feedback seems to be quite consistently positive on how they experience the workshop [the focus of the project] and that it is relevant to what they need or want or what is going on in their lives, they say they enjoy it, many of them say they would like more of that kind of thing, so it is delightful from a couple of different perspectives, right.   (T2-I1-Staff)

Members also enjoyed the interaction with students and valued the merits of student feedback that they learned to value through conducting the project, for example:

> … lots of beautiful information, the students really tell you lots, because some of them really write very, I was marking them, yesterday, so that's why I have them very fresh, and I even write to them, and they tell me, "oh, I would like to do this, but my family this and that," I mean, they tell you quite personal information, so … you were talking about satisfaction, sometimes it's really nice to read this …, because there are questions that we asked them, "ok, how do you compare this to what you did before," right? So that's something very satisfactory also, so delightful, the delight in a sense is to see how this is good for the students, and they are telling you [about it], right?
> (T2-I2-Fac)

This view is supported by Walser (2009), who described an action research project focused on implementing self-assessment as an instructional strategy and investigating the effectiveness of the strategy in two courses: "I was sometimes surprised at how open and thoughtful students were in their responses" (pp. 304-305).

Team members in this study also reported they were satisfied with the results of their project, they were delighted to see that they did something useful for students in conducting the project, like one faculty said, "in the end I think that we produced something that I hope is at least for us, for me, for sure it was useful" (T1-Fac1). In addition, they were also happy to see the progress of the project.

> I mean it is a very gratifying kind of process, right. You know, the discussions and the team, the four of us together—I guess there is regular opportunities for kind of eureka moments and regular opportunities to see progress, you know, to see something building, building, building, building, that's really delightful. …   (T2-I1-Staff)

The progress of the project and the improvement of student learning are two major goals that both project teams were pursuing. The original purpose of doing action research was to investigate questions related to teaching and learning, and thus student improvements and learning outcomes were their ultimate pursuit. Seeing their project progress smoothly and support student learning was actually a reward to team members. And this delightful experience motivated the team members to put more effort into research and teaching and thus make action research a nice learning cycle. Other action researchers, such as Herington and Weaven (2008), expressed similar views.

Their study presented how they used action research as an approach to exploring methods of improving the learning styles and outcomes of university students. They believed "the experience to be both challenging and rewarding" (p. 126).

Disseminating

In Carr & Kemmis's (1986) definition of action research, they mentioned action research as a project that "involves those responsible for the practice in each of the moments of the activity, widening participation in the project gradually to include others affected by the practice,…" (pp. 165-166)

As described by two team members from both teams, the team had many chances to share and disseminate the project findings to the community both inside and outside the university.

> So we learned quite a lot from this project and then what we would like to do—we did a few presentations but we are thinking of writing a paper on that because we would like to share this knowledge with all the other people … so it would be great if we can do more of this kind of research to inform our practices. (T1-Staff)

> … I have had a number of opportunities to share this with others, right, so it is really interesting how it-- is of interest to the broader university community and— (T2-I1-Staff)

In Trigwell and Shale (2004)'s model of the Scholarship of Teaching, the authors discuss teachers engaged in the scholarship of teaching making public the way in which they have made learning possible: "It is not just teachers' knowledge that is made public, it is also the practice, or more specifically the pedagogic resonance, that has made learning possible that is made public" (p. 531). As in these two examples, the sharing and disseminating of the project findings were not only viewed by members as sharing of knowledge, it was also a pursuit of resonance with others with similar interests, and this process is a delightful experience. Also as Trigwell and Shale (2004) said, this process has made the learning possible.

6.2.3.   Challenges experienced

Complexity of the project and workload

Some team members (especially members in Team 2) perceived that the complexity of the project was a bit challenging for them. As some of the members stated:

> Yeah, absolutely, so it has come with challenges, what is our purpose, because there are lots of things that we want to do with the [Program], there is lots of questions that we want answers, there is lots of developments that we think are useful. … But really committing to a goal and carry that through, that's been a great challenge, I think in theory, it's a positive thing to have a continuation, but they have to have very clear goals on how they build upon each other and that's not always easy to do this.   (T2-I2-RA1)

The challenges were further stressed by the time constraint of the team members.

> …so working within the constraints of time and balancing the desire to produce more, to do more, to incorporate new ideas and different things that we encounter and not keep it small because there is so much room for potential growth so that has been one of the bigger challenges.   (T2-I1-RA1)

Based on their description, the desire to accomplish more and the constraints of time (i.e., team members had different roles and responsibilities in university) were the major reasons for the team members to view the project as complex and challenging. A similar situation was reported by a member in Team 1:

> Actually I did this on top of my workload so sometimes I had to work from home, like extra work, this is because it is not part of my job kind of thing, so I wish I had more time dedicated in there for especially the teaching part.   (T1-Staff)

These expressions are actually not surprising. The multiple roles of team members and busy schedules determined that they have to find balance of using their time; otherwise, it can be a bit challenging. More important than that, different members brought different views and even some pre-project goals into the project. How to negotiate that between members and set up a common goal as early as in the beginning

stage of the project, is a important strategy that could make the project less challenging and complex.

6.3. Conclusion

In this study action research is shown to be a successful mechanism in supporting faculty (and other team members) to investigate questions about teaching and learning and to enhance professional development generally. The three models that provide a conceptual framework for this study (Trigwell & Shale, 2004; Theall & Centra, 2001; Clarke & Hollingsworth, 2002), explain why action research should have this effect. And the first finding of this study is consistent with what the models discussed. Specifically, Trigwell and Shale's model (2004) includes three interrelated components – knowledge (knowledge of discipline, knowledge of teaching/learning, conceptions of teaching/learning, knowledge of context), practice (teaching, evaluation/investigation, reflection, communication, learning) and outcome (student learning, documentation, teacher learning, teacher satisfaction). The model explains how the process of action research is informed by the prior knowledge of the team members as well as adds to that knowledge and how the process or practice of action research leads to observable outcomes. The findings of my research are positioned in all three components of the model. The team members developed their professional knowledge through the action research practice, and the process and practice led to the outcomes such as team members' learning and satisfaction. Theall and Centra (2001)'s model includes the dynamic relationship of the different aspects of the action research process. The theory and knowledge about teaching and learning, the process of doing research and the improvement of pedagogical and professional knowledge interact with one another and co-develop in a dynamic way and this is consistent with what I have found in this study. With regards to this study, Clarke and Hollingsworth's (2002) interconnected model of professional growth helps to explain the mechanism for change in teachers' professional development, emphasizing the importance of enactment and reflection. It is suggested that "change occurs through the mediating processes of 'reflection' and 'enactment' " and "change in one domain leads to change in another" (p. 950). The evidence in my study, which is consistent with the centrality of refection in the model, shows that the reflection process enabled team members' change in different domains. More

specifically, knowledge about teaching and learning and educational research cannot easily be accumulated without team members' reflections throughout their action research process. In addition, the first finding that team members improved their professional knowledge is also supported by some other studies in current literature, including many empirical studies which describe student learning outcomes and teacher learning outcomes.

Second, what only appears in a few other studies is how faculty member (and other team members) actually experience the process of doing action research and how far reaching are the benefits. In this study, the findings show that the experiences of the process in conducting action research were various and plentiful as described by team members. The discussion of these findings together with those about enhanced professional knowledge development portrayed a more in-depth experience of members doing action research than has been previously reported in the literature.

This study also suggests other possibilities for future research. First, the findings of this study concerning teamwork could be further investigated, specifically more studies to understand better the dynamics of multidisciplinary teams and how productive work is generated in this context. Secondly, due to the scope of this master thesis, this study selected only two cases or projects, further research involving many more cases could be instructive. Finally, this was an aspect of investigation over time in this study (interviews of the team where the project was being conducted) but more study conducted over time and while the project is being conducted could be very interesting.

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Appendices

Appendix A.

Ethics approval letter and Research consent form

SFU OFFICE OF RESEARCH ETHICS

Street Address	Mailing Address	DIRECTOR 778.782.6593
Simon Fraser University	8888 University Drive	MANAGER 778.782.3447
Multi-Tenant Facility	Multi-Tenant Facility	FAX 778.782.6785
Room 230, 8900 Nelson Way	Burnaby, BC Canada	
Burnaby, BC Canada	V4A 1S6	
V5A 4W9		

http://www.sfu.ca/vp-research/ethics/

May 11, 2012

Qi Zhang
Graduate Student
Faculty of Education
Simon Fraser University

Dear Qi,

RE: Exploring the experiences of faculty-led teams in conducting SFU Teaching and Learning Development Grant projects
-    Appl. #: 2012s0203

I am pleased to inform you that the above referenced Request for Ethical Approval of Research has been approved on behalf of the Research Ethics Board. This approval is in effect until the end date May 10, 2015, or only during the period in which you are a registered SFU student.

The Office of Research Ethics must be notified of any changes in the approved protocol. Request for amendments to the protocol may be requested by email to ▇▇▇▇▇▇ In all correspondence relating to this application, please reference the application number shown on this letter and all email.

Your application has been categorized as "minimal risk" and approved by the Director, Office of Research Ethics, on behalf of the Research Ethics Board in accordance with University policy R20.01, http://www.sfu.ca/policies/research/r20-01.htm. The Board reviews and may amend decisions or subsequent amendments made independently by the Director, Chair or Deputy Chair at its regular monthly meetings.

"Minimal Risk" occurs when potential participants can reasonably be expected to regard the probability and magnitude of possible harms incurred by participating in the research to be no greater than those encountered by the participant in those aspects of his or her everyday life that relate to the research.

The REB assumes that investigators continuously review new information for findings that indicate a change should be made to the study protocol or consent documents and that such changes will be brought to the attention of the REB in a timely manner.

...../2

SIMON FRASER UNIVERSITY   ENGAGING THE WORLD

Please note that it is the responsibility of the researcher, or the responsibility of the Student Supervisor if the researcher is a graduate student or undergraduate student, to maintain written or other forms of documented consent for a period of 1 year after the research has been completed.

If there is an adverse event, the principal investigator must notify the Office of Research Ethics within five (5) days. An Adverse Events form is available electronically by contacting █████████

All correspondence with regards to this application will be sent to your SFU email address.

Please notify the Office of Research Ethics at ███████ once you have completed the data collection portion of your project so that we can close the file.

Best wishes for success in this research.

Sincerely,

████████████████████

Dr. Hal Weinberg, Director
Office of Research Ethics

c: Dr. Cheryl Amundsen, Supervisor

/jmy

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Consent form for Team 1

Research consent form [2012s0203]

This research is being conducted under the permission of the Simon Fraser Research Ethics Board. The chief concern of the Board is for the health, safety and psychological well-being of participants.

Title: Exploring the experiences of faculty-led teams in conducting SFU Teaching and Learning Development Grant projects

Investigator: Qi Zhang, MA student , Faculty of Education, Simon Fraser University, █████████

By filling out this form, I consent to participate in the study " Exploring the experiences of faculty-led teams in conducting SFU Teaching and Learning Development Grant projects".

I understand that:

The purpose of this study is to explore the comprehensive experiences of faculty members, student research assistants (and others that may be involved) in carrying out Teaching and Learning Development grant projects at SFU.

The investigator will only approach PIs with grants that have gone through ethics to participate. The investigator will first contact the PI for consent to participate. If the PI consents, the investigator will then seek consent from each team member.

The investigator foresees no risks associated with my participation in this study.

Participants may refuse to participate or withdraw from the study at any time; this will have no adverse effects on the evaluation of their project.

Data will include: 1) all submitted documents related to the teaching and learning development project including the initial workshop form, project proposal versions, and final report, 2) interview transcripts. All the data collected from the interviews will be recorded and transcribed and will be kept together with all the original documents collected on a password-protected computer. After the completion of data analysis, the data will be transferred to an external hard or flash drive and stored in a locked room for three years before being erased.

As a participant, I understand that I will not be identified by name or academic department in the reporting of the findings of this research.

By consenting to participate, I agree to:

Give permission to the researcher to access the documents that I have already submitted to Dr. Cheryl Amundsen related to the teaching and learning development project including the initial workshop form, project proposal versions, and final report.

Participate in a semi-structured interview in which questions about my experiences in conducting the teaching and learning development project will be asked.

If you wish to obtain results of this study upon its completion, please contact Qi Zhang at ████████████
Any concerns or complaints should be directed to Dr. Cheryl Amundsen, Faculty of Education at ████████████████████████ or Dr Hal Weinberg, Director, Office of Research Ethics at ████████████████████████

In agreement with the above, I affix my signature.

Participant's full name:

Signature: Date:

Consent form for Team 2

Research consent form [2012s0203]

This research is being conducted under the permission of the Simon Fraser Research Ethics Board. The chief concern of the Board is for the health, safety and psychological well-being of participants.

Title: Exploring the experiences of faculty-led teams in conducting SFU Teaching and Learning Development Grant projects

Investigator: Qi Zhang, MA student , ███████████ , Faculty of Education, Simon Fraser University.

By filling out this form, I consent to participate in the study " Exploring the experiences of faculty-led teams in conducting SFU Teaching and Learning Development Grant projects".

I understand that:

The purpose of this study is to explore the comprehensive experiences of faculty members, student research assistants (and others that may be involved) in carrying out Teaching and Learning Development grant projects at SFU.

The investigator will only approach PIs with grants that have gone through ethics to participate. The investigator will first contact the PI for consent to participate. If the PI consents, the investigator will then seek consent from each team member.

The investigator foresees no risks associated with my participation in this study.

Participants may refuse to participate or withdraw from the study at any time; this will have no adverse effects on the evaluation of their project.

Data will include: 1) all submitted documents related to the teaching and learning development project including the initial workshop form, project proposal versions, and final report, 2) interview transcripts. All the data collected from the interviews will be recorded and transcribed and will be kept together with all the original documents collected on a password-protected computer. After the completion of data analysis, the data will be transferred to an external hard or flash drive and stored in a locked room for three years before being erased.

As a participant, I understand that I will not be identified by name or academic department in the reporting of the findings of this research.

By consenting to participate, I agree to:

Give permission to the researcher to access the documents that I have already submitted to Dr. Cheryl Amundsen related to the teaching and learning development project including the initial workshop form, project proposal versions, and final report.

Participate in multiple semi-structured interviews in which questions about my ongoing experiences in conducting the teaching and learning development project will be asked.

_____

If you wish to obtain results of this study upon its completion, please contact Qi Zhang at ██████████
Any concerns or complaints should be directed to Dr. Cheryl Amundsen, Faculty of Education at
████████████████████████ or Dr Hal Weinberg, Director, Office of Research Ethics at
████████████████████

_____

In agreement with the above, I affix my signature.

Participant's full name:

Signature: Date:

Appendix B.

Guidelines for the proposal and final report

SFU

Teaching and Learning Development Grants:
Project Proposal Guidelines
(Project proposal drafts should be 3 pages maximum)

Final proposals for the Teaching and Learning Development Grants will address the following criteria.

1.

Title of project:

Principal Applicant and Status (tenured/tenure-track/lecturer):

Collaborators and their Status (tenured/tenure-track/lecturer/sessional/staff/other):

2. **Description of the proposed project. Please include the following:**

A. **Brief summary and rationale for what you want to do:** What problem are you trying to address? Why is the problem important? How do you propose to go about understanding/solving this problem? What is the context in which the project will be conducted (e.g., course name or program name)? How does this project idea fit with course or program goals? How are findings expected to contribute to student learning and to your learning?

B. **Question(s) to be investigated:** Form your question(s) to specifically address the problem you describe above. The question(s) should be specific enough that you can collect evidence to answer it. (Keep in mind a focus on student learning as you develop the question(s).)

C. **Carrying out the project:** General description of how the project will be conducted, including what information/data will be collected and how it will be analyzed/summarized to answer the questions you have identified in 'B' above. The following table may help you to organize your description. For each question, identify the evidence you will collect, and explain how it will be analyzed or summarized.

Question	Evidence to be collected	Explanation

D. **Intellectual property (if applicable):** Description of how copyright issues will be addressed. Intellectual property will be covered by SFU intellectual property policy.

SFU

E. **Timeline**: Description of timeframe for the project. Enter each activity or milestone, and place a "+" in the grid for the duration of each activity. Include explicitly a start date for the project.

Activities and Milestones	2013											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Start Date for the project												

F. **Local Dissemination**: It is required that you disseminate the findings of your project/what you have learned to your department or program colleagues. What are your initial ideas about how to do this most effectively?

G. **Broader impact**: Describe your initial ideas about how any practices and/or products developed might be useful to colleagues at SFU or at other universities. Or, how the project fits with your department/Faculty's strategic plan or the 2010-13 Academic Plan.

3. **Budget request**

A. Present the budget required to support the project and a justification in the table below.

Specify and justify which items you are asking to be covered. This can, for example, include project specific personnel costs (e.g. RA), instructional materials and other related costs. If you plan to hire an RA, please detail what that individual's responsibilities will be. Enter the rate (e.g., $20/hr for a masters student, $25/hr for a doctoral student), estimated number of hours, and the total amount. For other types of expenses, enter the cost in the "Amount" column. Review the eligible and ineligible expenses at: http://www.sfu.ca/teachlearn/tlgrants.html.

Item	Rate	# hours	Amount	Justification
Total				

B. If applicable, estimate the continuing operating and capital costs of the course or program after the termination of these funds. How will these costs, if any, be covered?

If you require assistance, please contact us at: ▮▮▮▮▮▮▮

SFU Teaching & Learning Development Grants:
A Teaching and Learning Centre (TLC) & Institute for the Study of Teaching and Learning in the Disciplines (ISTLD) Partnership

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SFU

Teaching & Learning Development Grant:
Final Report (suggested maximum 4 pages)

1.   Title of your project

2.   Your name and co-applicants

3.   Please summarize your findings using the question(s) you investigated as an organizer (take these directly from your final grant proposal). Provide the results of your analysis for each information/data source.

4.   In carrying out your project, did you do anything differently than had been planned (based on your project proposal)? If yes, please describe.

5.   How did you disseminate your findings amongst your department/school colleagues? Any interesting reactions? Do you have plans for a broader dissemination of your findings? If yes, please explain.

6.   How have you (or how do you plan to) apply the findings of your project to your teaching practice?

Note: You may also choose to do a poster instead of a written report. Essentially the poster will include the same information as addressed above. If you choose a poster, you must commit to presenting it at the Annual SFU Teaching and Learning Symposium in May of each year. A TLC staff member will assist you in developing the poster. Of course, the poster is yours and you may choose to present it at external conferences as well, as many grant recipients have done.

Examples of already submitted final reports and posters can be viewed at: www.sfu.ca/istld

An electronic version of this form can be downloaded at (click on "Handouts"): www.sfu.ca/istld

Please submit your final reports to Cheryl Amundsen & Cindy Xin at ▮▮▮▮▮▮▮▮

SFU Teaching & Learning Development Grants:
An Institute for the Study of Teaching and Learning in the Disciplines (ISTLD) & Teaching and Learning Centre (TLC) & Partnership

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Appendix C.

Interview protocol

Interview guide for project team who has completed a project (i.e. Team 1)

1. Please describe your role in the project team.

STUDENT AND TEACHER LEARNING

2. In general, what did you learn through being involved in the project?

3. What did you learn about the students in the course in which the study took place?

4. (Faculty only)What did you learn about your teaching practice? Is there anything you would change in your teaching or the way you support student learning as a result of what you learned?

5. Was there anything in the findings reported in your final report that you found surprising? What was most interesting in your findings?

6. In doing this project, you were involved in investigating teaching as a research project. Had you thought about teaching this way before? Would you engage in this type of an investigation again (formally or informally)?

THE PROCESS OF CONDUCTING THE PROJECT

7. What went smoothly in carrying out the project?

8. How did the team work together? What were the benefits of doing the project as a team? What were the challenges?

 9. Were there moments when you felt you were inspired or learned something important from other team members?

10. Is there any further support you wish you would have had in conducting this project?

CONCLUSION

11. By reflecting back on the final report or what we have discussed so far, is there anything else you would like to add that would help me understand your experience in being part of this project and the meaning of that experience to you?

Interview guide for project team that currently conducting a project (Team 2's second round interview)

1. Please describe your role in the project team.

STUDENT AND TEACHER LEARNING

2. What have you learned so far?

3. What did you learned so far about the students in the course in which the study is taking place?

4.(Faculty only) What have you learned about your teaching practice so far? Is there anything you would change about your teaching or how you support student learning as a result of what you are learning?

5. In doing this project, you are involved in investigating teaching as a research project. Had you thought about teaching this way before? Would you engage in this type of an investigation again (formally or informally)?

THE PROCESS OF CONDUCTING THE PROJECT

6. What have been the biggest delights?

7. How does the team work together? What are the benefits of doing the project as a team? What have been the challenges encountered so far?

8. Have there been moments when you feel you have been inspired or learned something specific from other team members?

9. Is there any further support you wish you had in conducting this project?

CONCLUSION

10. Is there anything else you would like to add that would help me understand your experience in being part of this project and the meaning of that experience to you?

Interview guide for Team 2 in the beginning stage of their current project (Team 2's first round interview)

STUDENT AND TEACHER LEARNING

I know that you are really just beginning this current project and I know that you have done a previous project that focused on the [Program in the Department]. I would like to start with some questions about the previous project.

1. Can you briefly describe that previous project for me?

2. In general, what did you learn through being involved in the previous project?

3. What did you learn about the student learning in the previous project?

4. What did you learn in the previous project about the Academic Enhancement Program that you are using in the current project? In other words, did you learn something that influenced how you are going about this current project? How did that project lead to your current project?

5. Was there anything in the findings reported in your final report(poster) that you found surprising? What was most interesting in your findings?

6. In doing the previous project, you were involved in investigating teaching as a research project. Had you thought about teaching this way before?

PROCESS OF CONDUCTING THE PROJECT

7. I understand that you are in the process of developing a needs assessment for this current project. Can you tell me about how you are going about this? What have learned so far from your beginning development of the needs assessment?

8. What have been the biggest delights?

9. How does the team work together? What are the benefits of doing the project as a team? What have been the challenges encountered so far?

10. Have there been moments when you feel you have been inspired or learned something specific from other team members?

11. Is there any further support you wish you had in conducting this project?

CONCLUSION

 Is there anything else you would like to add that would help me understand your experience in being part of this project and the meaning of that experience to you?