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Exploring the Experiences of Faculty-led Teams in Conducting Action Research

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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 those who work with them) experience the process of doing action research. In order to explore team members' in-depth experience about what they learned and how they experienced conducting action research, this study documented the experiences of two action research project teams supported through an initiative at Simon Fraser University, the *Teaching and Learning Development Grants 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 satisfaction with the experience of conducting action research.

On a suggéré que la recherche-action était un moyen efficace pour aider les professeurs d'université à améliorer l'enseignement et l'apprentissage. Toutefois, on semble ne pas avoir beaucoup de détails sur la manière dont les professeurs (et ceux qui travaillent avec eux) font l'expérience de la recherche-action. Afin d'explorer l'expérience profonde des membres d'un groupe relative à ce qu'ils ont appris et comment ils ont vécu cette recherche-action, cette étude documente les expériences de deux groupes qui ont participé à un projet de recherche-action dans le cadre d'une initiative organisée par le programme des TLDG (Teaching and Learning Development Grants) de l'Université Simon Fraser. Grâce à la méthodologie des études de cas, divers types de données ont été recueillies et analysées au moyen d'un processus itératif. Les résultats ont montré que la participation au projet avait permis à tous les membres des groupes d'acquérir des connaissances professionnelles. La plupart des membres ont indiqué qu'ils avaient vécu une expérience de travail de groupe positive et qu'ils étaient contents d'avoir mené des activités de recherche-action.

Higher education has undergone rapid change in the past few decades. A feature of that change is a growing demand for external assessment of "quality" (Blackwell, Channell & Williams, 2001; Maguire & Gibbs, 2013). Teaching quality associated with student learning outcomes is one area that has become the focus of intense scrutiny and review. One way institutions have responded is with grants that support faculty members in investigating teaching practice and student learning. At our institution, we have initiated the Teaching and Learning Development grants program (TLDG) (www.sfu.ca/tlgrants.html) which provides small grants (up to $5000 CAD) and other support to enable faculty to identify questions about teaching and learning of interest to them, conduct a systematic investigation, and share their findings with colleagues.

In this paper, we use the term *action research* to describe the process that faculty undertake in carrying out their investigations. We use this term because our focus is on the research process itself rather than the outcomes of the project or dissemination of findings. Action research has been widely suggested as a useful way to support university faculty to improve teaching and thus, student learning. There are many published accounts of individual faculty members' investigations, describing what they did and what the student learning outcomes were (e.g. Ham & Davey, 2005; Walser, 2009). However, there is relatively little published about what faculty and those who worked with them experience and learn by engaging in the action research process itself.

In this study, we document the experiences of two grant project teams (faculty member(s), graduate student research assistants and staff). Our focus was on what was learned about teaching and student learning and how the research process was experienced, including teamwork. We also wanted to know what delights and challenges were experienced in carrying out the projects. A case study approach was 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?

What we sought, different from those studies in the current literature, is a more comprehensive understanding of individual experiences to inform those who want to take part in action research about the potential benefits and possible difficulties. As well, we aim to provide educational developers with information that can aid them in planning ways to better facilitate faculty research processes.

We begin with a brief overview of the related literature and the design of the TLDG program.

Related Literature

Descriptions of the action research process are fairly consistent in both the K-12 and post-secondary literature. Kemmis and McTaggart (2000), describe the action research 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), referring to the K-12 context, argue that "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). Norton (2009), referring specifically to higher education, used the term *pedagogical action research* to suggest 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).

In 1992, Kember and Gow argued that while at the K-12 level there was an abundance of literature investigating action research, there was scant reference to action research in the context of higher education. This situation has somewhat improved over time based on our search of the literature. We located three studies that found positive benefits of the action research process at the program level. McGee (2008) investigated an action research approach used to create more effective teaching and learning situations for English as Second Language advisers. The main areas of success were reported as: "a focus on practice and situated in practice"; "cycles of review and reflection"; "bridging the gap between theory and practice by reconstruction of professional knowledge"; and "fostering a culture of learning" (pp. 242-244). 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. The findings concluded that there was evidence of "a lasting effect on teaching"; "teaching becoming more student-centred"; "learning about how to conduct action research"; "a developing capacity to reflect upon their own teaching"; and "developing teamwork skills" (pp. 91-99). In Wright, Finelli, Meizlish, and Bergom's (2011) study investigating a program to fund faculty postdoc / graduate-student teams to pursue action research, the focus was on courses and curricula. They found that nearly all teams agreed that "their experience with their project would change their approach to teaching" (p. 53).

The second set of studies we identified reported the results of individual action research projects. There are a large number of these studies authored by individual faculty investigators, all focus on a description of the project and the student learning outcomes (e.g., Ham & Davey, 2005; Herington & Weaven, 2008; Raubenheimer & Myka, 2005; Walser, 2009). While, in this study, we also describe the project conducted by each team, we take a broader view than these studies in that we are also interested in the individual's experience of the research process itself and of teamwork. Our review of the literature failed to identify any study with such a focus.

Teaching and Learning Development Grant Program (TLDG)

The TLDG program is administered at our university by a partnership between the Institute for the Study of Teaching and Learning in the Disciplines and the Teaching and Learning Centre. One hundred and thirty grant projects have been funded since late 2011; 81 projects have been completed and final reports were written, and 49 projects are currently in progress. The program is designed to address two broad goals: (1) support faculty members to enhance their knowledge and practice as related to teaching and learning, and (2) engage faculty in teaching as a socially situated practice. These two goals reflect action research as a process that begins with a faculty member's core interest in their own disciplinary teaching practice, and also includes the importance of fostering conversations and community around teaching as a means of enacting systemic change across the institution. The main program design elements linked to these two goals are listed below, and a brief description of each program design element (in italics) follows.

- two 2-hour proposal development workshop sessions (Goals 1 & 2)
- one-to-one feedback with facilitators until proposal is finalized (Goal 1)
- research and methodological supports during the conduct of the project (Goals 1 & 2)
- identification of literature relevant to the project (Goals 1 & 2)
- 2-3 luncheon meetings per year for those currently conducting projects (Goal 2)
- a final report or poster (Goal 1)
- sharing of project findings with departmental colleagues (Goal 2)

Instructors arrive at the first *proposal development workshop* session having submitted their initial project idea via email. Other instructors who are co-investigators, or graduate students who will be research assistants (RAs) often accompany the main applicant. The focus of the first session is to clarify the questions/purposes of the project, forming the structure of the investigation. In between the first and second sessions, initial proposal drafts are submitted for feedback to all who attended the workshop. Workshops are designed to support instructor discussion, networking and collaboration between and around project ideas across the institution. Experienced educational researchers/developers facilitate each session. After the second session, *one-to-one feedback* continues between instructor and facilitators until the proposal is finalized, thus this is a formative rather than a competitive process (i.e., all finalized proposals are funded).

During the conduct of the project, our project team (comprised of educational researchers, educational developers, a postdoc and PhD students) provide support with development of data collection instruments, data analysis and additional support as needed. For example, we offer consultation on the design and analysis of surveys/questionnaires. We also provide support in *identifying literature* relevant to projects as a way to connect instructors to the broader scholarly conversation and to further address our second goal.

Two to three times each year we bring instructors and other team members (RAs, other faculty or staff) together for *luncheon meetings*, as a way to share experiences and make connections between projects.

Final reports or posters are required for each project. The final reports return to the questions from the original proposal and present the analysis of the data they have collected to address each question. We also seek information on the impact of the project to teaching practice and how the project was disseminated, especially to *departmental colleagues.* Project descriptions and final reports are uploaded to the grants website providing a public record of each project.

We differ from most grants programs with our second goal, placing greater focus on going beyond individual knowledge to also intentionally develop conversations around these projects and to situate the project in the local academic workplace (Boud, 1999). This goal is consistent with current reviews of the professional development literature that emphasize the importance of integrating development with everyday work practices (Amundsen & Wilson, 2012; Webster-Wright, 2009). First, we encourage projects to be conducted in teams (which most are). Second, we facilitate conversations from the beginning through the proposal development workshops, continuing with the luncheon meetings, research supports and literature identification. Furthermore, we emphasise local dissemination to departmental colleagues, rather than external audiences, as we feel this is where projects may have their greatest teaching development value (Kreber, 2013).

The Two Projects Investigated

One of the projects we investigated was completed, and the other was in process at the time of our data collection. Teams consisting of faculty member(s), graduate student research assistant(s), and a support staff member conducted each project. This team composition seems to be fairly unusual, at least in the published literature. The most common composition and collaboration is either an educational researcher or teacher educator in a university with school teachers as researchers (e.g., Megowan-Romanowicz, 2010; O'Connor, Greene, & Anderson, 2006) or university faculty as researchers with educational developers as coordinators (e.g., Barazangi, 2007). There were only a few descriptions of teams like those featured in this research (e.g., Wright et al., 2011).

Team 1 - Faculty of Science

The two faculty members of Team 1 had developed and taught an online version of a large course (over 200 students were enrolled), and the online version was created to be parallel to the on-campus version by incorporating recorded lectures, and similar homework problems and exams. One of the faculty members taught the face-to-face version of the course, and both faculty members supervised the online version. In addition to the two faculty members, the project team included a 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 who served as an RA based on his expertise in the development and analysis of surveys. The primary research question driving the project investigation was: In the two versions of the course (face-to-face and online) taught by the same instructor, what are the differences in terms of student perceptions of the learning environment?

Team 2 - Faculty of Applied Science

The two primary investigators in this project team were a faculty member and a support staff member who worked together on three TLDG projects[1]. Their initial motivation was to address the high drop out rate amongst first and second year students. To do that, they developed a workshop focused on learning strategies that was integrated into lower division courses. Their first grant project focused on further analyzing the feedback about the workshop 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. 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 the first author began to interact with this team. When she conducted the first interviews, they were in the beginning stages of the third project, and at the time of the second round of interviews, they were nearing the end of the third project. The project team for the third project consisted of a faculty member, a learning support staff member, and two RAs who possessed expertise in educational research.

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[1] Faculty can be awarded a maximum of $15,000 in a five year period.

Data Collection and Analysis

We wanted, as noted above, to focus on one project that was completed and one project that was in progress. We 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[2]. We reviewed the projects that met these three criteria and found that several projects met the criteria for completed or in progress work and had ethics approval; only two met the criteria for including a staff member. We contacted the project leaders of these two teams by sending them an email. After receiving their agreement to participate, and with their permission, we emailed the other project team members and asked their willingness to participate. All team members in both teams agreed to participate.

Ethics approval was obtained from the University Office of Research Ethics before collecting data. Before the start of the first interview, each participant was asked to review and sign a consent form.

Two sources of data for this study were the finalized grant proposals and final reports. These were primarily used to familiarize the first author with the projects and to aid in the construction of the interview protocol. Twelve semi-structured interviews comprised the third, and primary, source of data. Interview protocols were developed using the two research questions as a starting point, augmented by the contents of the grant proposals and the final reports and by our review of the relevant literature (see Appendix). Interview(s) were conducted with each member of the two teams. For Team 1 that had already completed the project, one interview for each team member was conducted in order to capture their experiences on a retrospective basis. Questions guided participants 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. The intention was not to compare the two interviews, but to track experiences as they unfolded at two different times in the conduct of the project. Eight audio files were transcribed verbatim by a professional transcriptionist and four were transcribed by the first author. Transcriptions were returned to those interviewed to correct/change/add/delete as they felt appropriate. Two individuals made a few changes.

The analysis of interview data adopted an "inductive" form (Creswell, 2008) moving from the raw data (i.e., interviews transcripts) to general codes and themes. The first author read through the transcripts and wrote down memos in the margins about thoughts and comments that came to mind in order to acquire an overall 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). The data was next uploaded into Maxqda to facilitate further coding. The categories remained flexible and open to change throughout the entire analytic process. During this iterative process, we also developed a codebook with the names of the emerging codes, definitions of them and examples from the data. Once new codes ceased to emerge, we grouped the data by codes and looked to see whether any codes could be eliminated or collapsed. The two authors engaged in an inter-coder reliability process (Bloomberg & Volpe, 2008). Greater detail

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[2] Not all projects require ethics approval. See Simon Fraser University's website (www.sfu.ca/tlgrants.html) for clarification.

of the case study methodology employed and the procedures followed are included in Zhang (2013).

The main codes and subcodes were:

Table 1
Codes

Main codes	Subcodes
Professional knowledge development	Knowledge of students and student learning Knowledge of pedagogy and instructional design Learning about educational research Changes made to teaching Plans for future inquiry Experience of conducting a project
Teamwork	Benefits of teamwork Challenges of teamwork Suggestions for teamwork
Satisfaction	Satisfaction with support provided Satisfaction with the process Satisfaction with the project findings Dissemination of project findings
Challenges	Project complexity Workload

Findings and Discussion

We identified four major findings and have organized this section accordingly. The first major finding addresses research question one and the other three respond to research question two.

- Finding 1: All 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 working as a team 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.

Each of the four sections below begins with a table showing the codes related to the finding and example excerpts reflective of each subcode. Individual and team affiliation is not included with quoted excerpts in consideration of providing anonymity. Instead each excerpt is

followed by Fac 1, 2, 3 or RA 1, 2, 3 or Staff 1, 2. In this way the reader know the role of the person and that the excerpt came from different faculty members, RAs, or staff.

Finding 1 - Professional Knowledge Development

Table 2 provides the subcodes related to Professional Knowledge Development and provides example excerpts from the data for each subcode.

Table 2
Professional Knowledge Development

Professional Knowledge Development	Excerpts from the Participant Interviews
Knowledge of students and student learning	...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 that was—if I can say surprise—but a realization that kind of came from this experience. (Fac1)
Knowledge of pedagogy and instructional design	…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... (RA2)
Learning about educational research	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... (Fac1)
Changes made to teaching	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...(Fac2)
Plans for future inquiry	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 … (Fac1)
Experience of conducting a project	Because we got into some habits of certain things in [the first grants] this time with a different team composition we challenged [ourselves] a little bit, like why are we doing it that way? You know, will this be more efficient? … 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 …. (Staff2)

The first finding, as reflected in the excerpts in Table 2, is that all of the team members perceived that they had developed aspects of professional knowledge through participating in the project. The most important aspects of professional knowledge referred to by participants concerned: knowledge of students and student learning, knowledge of pedagogy, and knowledge of educational research. In the first excerpt of Table 2, the faculty member notes their surprise at the student feedback, reflecting the learning benefit of systematically collecting feedback from students. In both projects, faculty and staff spoke of valuing their deepening understanding of educational research and the value of these methods to investigate teaching. Descriptions of specific changes to teaching to the course investigated, as well as more generally, were noted by participants in both teams as was the interest in conducting further investigations. 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). These aspects of developing professional knowledge are tightly related and seem to have been co-developed through participation in the action research process. This dynamic aspect of action research is a central element of Theall and Centra's (2001) Scholarship-Improvement-Practice Synergy model.

A key characteristic of action research, according to some researchers, is that it invokes reflection on practice which leads to the development of professional knowledge and improved professional practice (e.g., Kemmis and McTaggart, 2000). Clarke and Hollingsworth's (2002) interconnected model of professional growth helps to explain why this connection is a reasonable assumption to make based on repeated cycles of enactment and reflection. 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" (p. 89). We found some evidence of the connection between reflection, professional knowledge development and improved practice as reflected in this statement from a participant.

…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 project]. (Staff2)

The actual "doing" of action research was described by many of our participants as an exploration or discovery process, a systematic process of learning and development.

Finding 2 - Perspectives on Teamwork

Table 3 provides the subcodes related to Perspectives on Teamwork and provides example excerpts from the data for each subcode.

Table 3
Perspectives on Teamwork

Teamwork		Excerpts from the participants
Benefits of teamwork	Complementary knowledge/ expertise	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. (Fac1)
	Learned something from each other	Yeah, I remember—so when we were talking about the initial survey creation ... We don't have any idea about survey creation, so that I felt inspired [by the RA] 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. (Fac2)
	Networking and learning opportunity for graduate students	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 [one of the members] a little bit but through this I came to work with [one of the members] quite a bit more. (RA1)
Challenges of teamwork	Time/scheduling concern	…there are 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. … (Staff2)
	Compartmentalized expertise weakens efficiency	...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. (RA1)
Suggestions for teamwork	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. (RA1)
	More discussion and negotiation	... 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 ... (RA3)

As reflected in the example excerpts in Table 3, overall, team members perceived that they experienced many benefits from working in teams. A few team members also pointed out some challenges with teamwork and provided suggestions for improvement. The different, but complementary, expertise of different members was noted, and many participants noted that because of the team, they were able to complete the project more efficiently and probably had stronger results. Conducting action research in teams is not a common characteristic of action research projects reported in the literature, as we noted in the introduction to this paper. We found only a few other empirical studies that mentioned project teams (e.g., Kember, 2002; Wright et al., 2011). Although Wright et al. (2011) concluded that teamwork benefitted both projects and students , and Kember (2002) noted the development of teamwork skills, these studies did not provide detailed descriptions of how team composition benefited or challenged the progression of projects or the action researchers themselves.

What we did not learn from the current literature, but also emerged in this study, is that the 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 excerpts in Table 3. At least one participant, as noted in the last excerpt in Table 3, proposed more discussion and negotiation as a solution to some of the teamwork challenges experienced. All in all, based on the feedback from the team members in this study, one can clearly see that the benefits of working in teams were well recognized, and that teamwork in conducting action research may well be worth advocating.

Finding 3 - Aspects of Satisfaction

Table 4 provides the subcodes related to Aspects of Satisfaction and provides example excerpts from the data for each subcode.

Table 4
Aspects of Satisfaction

Satisfaction	Excerpts from the participants
Satisfaction with support provided	I mean we had great support. [Education expert] was a great support, really, and she helped us—the way 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 the grant was approved, [she] helped us to find the research assistants ... 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 …(Fac1)
Satisfaction with the process	Well to be able to continue to consolidate this thing and to expand, it's a challenge to expand, ... 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. (Fac3)
Satisfaction with the project findings	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! (Fac1)
Dissemination of project findings	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… (Staff1)

Most team members indicated that they were satisfied with all aspects of their project experience including with, as noted in Table 4, the support provided, the process itself, the meaningfulness of the project findings and how the findings were disseminated. In fact, many universities have initiated university wide programs to support action research and cite the benefits from a professional development perspective (e.g., Gray, Chang, & Radloff , 2007; Kember, 2002; McGee, 2008; Wright et al., 2011). Our findings confirmed this. Participants in our study clearly indicated that they appreciated this opportunity and the supports they received; this is encouraging for those leading this kind of initiative.

The improvement of student learning was a major goal of both projects. It was rewarding to team members to have their project progress so smoothly and to know they were supporting student learning. One team member (see excerpt in Table 4) uses the term "delight". The fact that it was such a motivating experience prompted team members to continue to engage in the action research process. Other action researchers, such as Herington and Weaven (2008), described similar findings. They used action research as an approach to exploring methods of improving the learning styles and outcomes of university students and found "the experience to be both challenging and rewarding" (p. 126).

As illustrated in the last excerpt in Table 4, the sharing and disseminating of the project findings were not viewed as a one-way process. This simple act of sharing also had benefits to the action researcher in realizing the importance of the project findings and also the action research process itself. Roxå and Martensson (2009) note the power of conversations between faculty about teaching and learning, yet also note that they are uncommon in higher education and advocate environments that encourage such conversations. If action research can serve as a prompt for these kinds of conversations, then we can see how the benefits of action research might be broader than only the development of individual professional knowledge.

Finding 4 –Challenges

Table 5 provides the subcodes related to Challenges and provides example excerpts from the data for each subcode.

Table 5
Challenges

Challenges	Excerpts from the Participant Interviews
Project complexity and workload	Well one of the things I learned, you know, was how detailed the learning outcome development process is. You know, how complex... 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. (Staff2) …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. (RA2)

A few team members also mentioned some challenging moments or feelings related to being involved in the project. As illustrated in the excerpts in Table 5, 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. These expressions are actually not surprising. The multiple roles of faculty and other team members and busy schedules determined that they have to find balance in using their time; otherwise, it can be a bit challenging. This finding has led our grants project team to offer more support for research activities (e.g., survey development and analysis) and 'just in time' consultation.

Conclusion

In this paper, the action research process is shown to be a viable way to support faculty (and other team members) in the investigation of questions about teaching and learning of interest to them. Our findings show that faculty appreciated the support in the development of their grant proposal, the support as needed in the conduct of the project and some reported that they benefitted from sharing their findings as much as the person they shared with. We were

pleased to see how much team members said they valued following research procedures, especially ways to systematically collect student feedback. All participants identified aspects of professional knowledge development, as it applied to both the particular course that was the focus of their investigation and more generally to other teaching contexts. As others have noted, action research, and especially the prompted reflection on practice, seems to be a valuable process in the development of teaching and learning in higher education and should be supported institutionally. What only appears in a few other studies is how faculty members experience action research when conducted as a team. Most of our participants found this a rewarding experience and noted the strength of multiple perspectives and expertise, and sharing of the workload. There were also a few challenges noted, but solutions were offered. Overall, we think that teamwork should be encouraged.

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Appendix
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 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

12. 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?