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Investigation of Action Research within a Professional Learning and Development
Model

by

Megan Joyce St.Croix

A dissertation submitted in partial fulfillment
of the requirements for the degree of

Doctor of Education
in
Leading and Learning

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2020

Investigation of Action Research within a Professional Learning and Development Model

by

Megan Joyce St. Croix

This dissertation is completed as a partial requirement for the Doctor of Education (EdD) degree at the University of Portland in Portland, Oregon.

Approved:

REDACTED <small>Nicole Ralston (Mar 20, 2020)</small>	03/20/2020
Chairperson	Date
REDACTED <small>Benjamin Gallegos (Mar 20, 2020)</small>	03/20/2020
Committee Member	Date
REDACTED <small>Rebecca Smith (Mar 20, 2020)</small>	03/20/2020
Committee Member	Date

If applicable:

REDACTED <small>Elise M. Moentmann (Mar 20, 2020)</small>	03/20/2020
Additional Committee Member	Date
REDACTED	03/20/2020
Additional Committee Member	Date

Approved:

REDACTED <small>Bruce Weitzel (Mar 20, 2020)</small>	03/20/2020
Graduate Program Director	Date
REDACTED <small>John Watzke (Mar 20, 2020)</small>	03/20/2020
Dean of the Unit	Date
REDACTED <small>John Watzke (Mar 20, 2020)</small>	03/20/2020
Dean of the Graduate School or Representative	Date

Abstract

There is not a single professional learning and development (PLD) model that is effective for all educators. Student and teacher needs vary from classroom to classroom, and it is essential to consider all these needs when creating a PLD plan. This study examined the extent to which educators perceive action research as having the capacity to facilitate engagement in Teaching Quality Standard (TQS) Competency 2, or engagement in “career-long professional learning and ongoing critical reflection to improve teaching and learning” (Alberta Education, 2018c, p. 4). More specifically, this study sought to understand teacher perceptions of the process of planning, executing, and evaluating a research-based process within their practice. This mixed-methods study contributed to the body of knowledge around PLD and action research through observations ($n = 25$), surveys ($n = 38$), and interviews ($n = 6$). The importance of this study is the high school educators’ (teachers, counsellors, and administrators) perspectives and experiences about the supports, the challenges, and how responsive action research was to TQS Competency 2.

This study led to important findings regarding action research as a potential model. A teacher leader implemented the action research model, and over 23 hours and 40 minutes were allotted for educators to work on their action research projects. The key findings of this study are: (a) action research must be job-embedded, (b) action research decisions were evidence-informed, (c) the action research process must be an ongoing process supported with time, (d) action

research enhances teaching practices, and (e) collaboration supports action research. Finally, action research can be an effective and potential PLD model in education.

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Dedication

To my children – be resilient and curious, and above all, have integrity.

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Chapter 1: Introduction

Internationally, there has been – and continues to be – a high focus on improving and developing teaching and teachers (Campbell et al., 2016). Consequently, professional development is a “multi-million-dollar solution” (Timperely, 2011, p. 1) employed to increase learning and decrease the disparity between low and high achieving students. Both teachers and leaders regard professional learning highly; therefore, there is an abundance of it. Unfortunately, much of the professional development that teachers attend is perceived as meaningless to the teachers' practice because it is brief and void of depth (Timperely, 2011). There is an abundant supply of professional development offered by many companies and organizations without checks and balances. Without accountability, often, the quality of professional learning is weak and inadequate (Hill, 2009).

Because of the variation in quality, measuring the effects of professional development is doubly necessary (Hill, 2009). Tracking professional development effects can ensure that teachers both improve their practice and promote learning gains for students. Evidence of professional development should focus on student learning (Cohen & Hill, 2001; Garet, Porter, Desimone, Birman, & Yoon, 2001; Hill & Ball, 2004).

The results regarding professional development run parallel to the findings of professional development in Canada. To determine the effects of professional development, Campbell et al. (2016) conducted a study on *The State of Educators' Professional Learning in Canada*. “The purpose of the study [was] to understand, value, appreciate, and respect the rich mosaic of educational experiences and diversity of approaches and outcomes from professional learning within and across

province and territories” (Campbell et al., 2016, p. 2). There were three notable findings from the study. The first finding determined that there is not a standard professional development model that works for all. Professional development – like classroom instruction – needs to be differentiated to the needs of the students and teachers. The next finding concluded that all professional development models thrived when there was a combination of “evidence, inquiry, and professional judgement” (Campbell, 2016, p. 15). The final discovery involved identifying the challenges of professional development models across Canada. There was a notable inequity in the amount of time and allocation of funds provided to teachers across Canada. Additionally, there was an imbalance between the system-directed and self-directed professional learning across the country (Campbell et al., 2016). Campbell et al. (2016) concluded that education systems number one prerogative is to provide excellent learning opportunities for both educators and students.

Providing time and resources for educators is necessary to participate in quality learning experiences. In 1999, the Alberta Initiative for School Improvement (AIS I) created a project to improve student learning across Alberta. The project funded over 1,800 initiatives from 2000 to 2014. The Alberta government provided over \$500 million for the AIS I projects (Parsons & Beauchamp, 2012), and teachers utilized the money to respond to issues or needs within their school community (Hargreaves, Crocker, Davis, McEwan, & Sahlberg, 2009). “AIS I can be thought of as a large series of quasi-experiments, with student learning, achievement and other performance indicators as dependent variables (outcomes) and the various project interventions as independent variables (or treatments)” (Hargreaves et al., 2009, p. 10). Overall, the AIS I project had positive effects on student achievement, pedagogical strategies, and leadership

capacity (Parsons & Beauchamp, 2012; Hargreaves et al., 2009). Unfortunately, several budget cuts to education and the AISI ended. Without funding from the Alberta government, districts had the responsibility to create and initiate professional learning opportunities without additional funding from the government (Campbell et al., 2016). Professional development models and initiatives are now up to the discretion of the school districts, schools, and individual teachers without funding from the government (Campbell et al., 2016).

Creating a professional development model that responds to the needs of educators, schools, and districts is a balancing act. First and foremost, embedding professional development into the everyday work of teachers is essential. Dufour (2004) suggests that professional development and the day-to-day work of teachers should not be mutually exclusive. DuFour (2004) suggests that professional development should align with the school vision and goals, encourage staff to work in new ways, be results-driven, and have a sustained commitment from staff. District and school professional development can be used as a vehicle to support system changes and current priorities (Campbell et al., 2016). It is essential teachers attend professional development sessions specific to areas that align with their goals (Hill, 2009). For a teacher to be able to respond to the area of needs within their practice, they must have the freedom to work on self-directed professional development (Campbell et al., 2016). In a Canadian national survey including over 8,000 teachers, 56% of teachers stated that they had the autonomy to make judgements about their professional development; however, 54% of these respondents believed that this autonomy had deteriorated over the past five years (Canadian Teachers' Federation, 2014). In the same survey, respondents reported that some (60%), most (28%), or all (5%) of their professional development was

mandated. Having a balance of system-directed and teacher-directed professional development is necessary (Campbell, 2016). These statistics prove that there is an imbalance in the PLD model, and considering teachers' professional needs is essential.

A Shift to Think about Professional Learning and Development

It is unacceptable that a vast number of teachers believe that their professional development autonomy has deteriorated. Teachers benefit most from professional development when they would like to learn about a gap in their professional knowledge (Guskey, 2009). Ergo, education is not a one-size-fits-all model, and the application of the professional development knowledge in practice might be quite different than the theory. Professional development assumes that teachers can only develop via "sit and get" sessions. Accepting that professional development only comes in the form of conferences or workshops is unacceptable (Fullan & Hargreaves, 2016). Fullan and Hargreaves (2016) argue that:

Professional development involves many aspects of learning but may also involve developing mindfulness, team building and team development, intellectual stimulation for its own sake, reading good literature that prompts reflection on the human condition, taking sabbatical leaves to provide service in poor countries or communities, and reinvigorating teachers' love for their subject. (p. 4)

Either professional or personal development improve the educator and the communities in which they serve. Within the workplace, professional development must focus on learning that is job-specific to educators' practices.

Moreover, Fullan and Hargreaves (2016) identify: "professional learning is often like student learning – something that is deliberately structured and increasing

accepted because it can (to some) more obviously be linked to measurable outcomes” (p. 3). Table 1 illustrates the different outcomes achieved when high or low levels of professional development or professional learning are present.

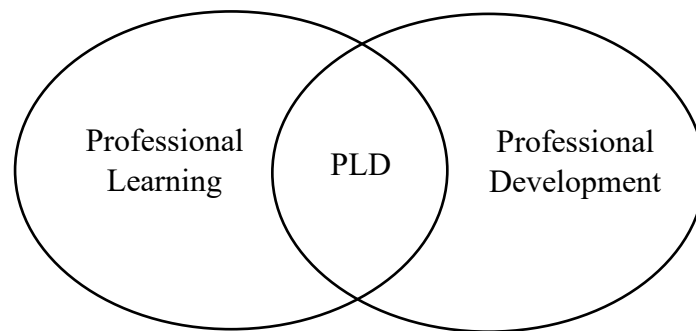
Table 1

Interaction Between Professional Learning and Professional Development

Levels of Professional Development (PD) and Professional Learning (PL)	Outcome	Characteristics
Low PD & Low PL	Ineffective Ingénues	<ul style="list-style-type: none"> - When 40% or more of the teachers turn over every year - Work autonomously with little collaboration - Prohibited from collaborating those outside your school
Low PD & High PL	Eggheads and Sociopaths	<ul style="list-style-type: none"> - Forced professional learning based on little evidence - Able to learn but unable to apply knowledge
High PD & Low PL	Caring Craftspeople	<ul style="list-style-type: none"> - Growth occurs as either a person, professional, or group but job-specific work is not improved - Educators not challenged to improve - Often the culture of the workplace is developed, but learning is not focused or deliberate
High PD & High PL	Moral, Mature Professionals	<ul style="list-style-type: none"> - Learning is continuous - Learning is responsive to the needs of the students and the school community - Teachers grow both individually and collectively - Educators become confident, skillful leaders who can apply theory to practice - A professional community is built based on trust

Note: The information in this table is from *Bringing the Profession Back In: Call to Action* by Fullan, M., & Hargreaves, A. (2016). Retrieved from <https://learningforward.org/docs/default-source/pdf/bringing-the-profession-back-in.pdf>

As shown by Table 1, a system that embraces both high professional learning and high professional development is ideal. As a result, Fullan and Hargreaves (2016) propose that the term professional development and learning (PLD) is adopted where there is an overlap of professional learning and professional development. PLD represents the best of both PD and PL; Figure 1 depicts the relationships between the three terms.



*Figure 1. The Relationship Between Professional Learning, Professional Development, and Professional Learning and Development. From *Bringing the Profession Back In: Call to Action* by Fullan, M, & Hargreaves, A. (2016).*

Retrieved from <https://learningforward.org/docs/default-source/pdf/bringing-the-profession-back-in.pdf>

Due to the nature of this study, the definitions outlined by Fullan and Hargreaves (2016) will be accepted for the terms: professional development, professional learning, and PLD.

Professional learning and development sustainability. The PLD design must be thoughtful and meaningful. Additionally, PLD models must be sustainable. When PLD is sustainable, teachers have the flexibility to make decisions about where they expend their energy. Additionally, there is time embedded within teachers' schedules to focus on PLD (Darling-Hammond & Richardson, 2009; Fogarty & Pete, 2010). Yoon, Duncan, Lee, Scarloss, and

Shapley's (2007) analysis of research determined that PLD of less than 14 hours did not have positive effects on learning. The PLD experience with the highest effects on learning was maintained over 6 to 12 months for 30 to 100 hours (Yoon et al., 2007). Professional learning can be job-embedded when "support is visible, available, and accessible all day, every day" (Fogaty & Pete, 2010, p. 33).

When teachers engage in PLD, there is a systematic inquiry method with specific goals developed in a collaborative setting. "A professional process of inquiry and judgement are important to bring together a range of evidence and expertise" (Campbell et al., 2016, p. 4). Campbell et al. (2016) identified examples of different professional learning models across Canada. Many districts in Alberta, British Columbia, and Ontario engage in inquiry-projects within their professional learning models, some lasting from 12 to 18 months (Campbell, 2016). The inquiry projects that were classified as the strongest had "external expertise, resources, funding, and time" (Campbell, 2016, p. 10). PLD requires time – if implemented correctly, it can solve "entrenched education problems for underachieving student populations" (Timperely, 2011, p. 5). Bransford, Brown, and Cocking (2000) suggest that before engaging in the inquiry process, teachers must have a depth of understanding for the content they teach, understand a conceptual framework that supports their process, and actively collect data. The goals in a PLD model revolve around improving student learning, and there is a shared understanding of professionalism in education.

Alberta's professional standards. Schools must consciously implement a PLD plan that is meaningful to teachers. Additionally, Alberta schools also must adhere to Alberta's professional standard (Alberta Education, 2018a). The first professional standard from the ministerial order is outlined in the *Teaching Quality*

Standard Applicable to the Provision of Basic Education in Alberta (Alberta Government, 2013). In September 2019, Alberta Education implemented a new standard for teachers and, for the first time, there is a standard for leaders and superintendents. The *Teaching Quality Standard* (TQS) applies to all certified teachers; the *Leadership Quality Standard* (LQS) applies to all principals and school division leaders; the *Superintendent Leadership Quality Standard* (SLQS) applies to all superintendents and chief deputy superintendents.

Holding all teachers, leaders, and superintendents all to a high standard strives to ensure that Alberta students will continue to receive excellent educations across the province. There are common themes between the old and new standards; however, some key differences exist. The TQS, LQS, and SLQS are user-friendly in comparison to the previous TQS from 1997, and the competencies are more concise. These competencies include indicators that describe ways to achieve the competencies. The new competencies include First Nations, Métis, and Inuit education, a competency for teachers to enhance pedagogy in literacy and numeracy, and an expectation for teachers to create inclusive learning environments (Alberta Education, 2018b). For this study, the term *Indigenous* – a culturally appropriate term – will also be used for *First Nations, Métis, and Inuit*.

Alberta's professional learning standard. Similarly, the three standards, TQS, LQS, and SLQS, continue to include a competency focused on professional learning. The TQS professional learning competency states: “A teacher engages in career-long professional learning and ongoing critical reflection to improve teaching and learning” (Alberta Education, 2018c, p. 4). The indicators of this competency are:

(a) Collaborating with other teachers to build personal and collective professional capacities and expertise; (b) actively seeking out feedback to enhance teaching practice; (c) building capacity to support student success in inclusive, welcoming, caring, respectful and safe learning environments; (d) seeking, critically reviewing and applying educational research to improve practice; (e) enhancing understanding of First Nations, Métis and Inuit worldviews, cultural beliefs, languages and values; and (f) maintaining an awareness of emerging technologies to enhance knowledge and inform practice. (Alberta Education, 2018c, p. 4)

The LQS professional learning competency states: “A leader engages in career-long professional learning and ongoing critical reflection to identify opportunities for improving leadership, teaching, and learning” (Alberta Education, 2018d, p. 4). The indicators of this competency are:

(a) Engaging with others such as teachers, principals and other leaders to build personal and collective professional capacities and expertise; (b) actively seeking out feedback and information from a variety of sources to enhance leadership practice; (c) seeking, critically reviewing and applying educational research to inform effective practice; and (d) engaging members of the school community to build a shared understanding of current trends and priorities in the education system. (Alberta Education, 2018d, p. 4)

The SLQS professional learning competency states: “A superintendent engages in career-long professional learning and ongoing critical reflection, identifying and acting on research-informed opportunities for enhancing

leadership, teaching, and learning" (Alberta Education, 2018e, p. 4). The indicators of this competency are:

(a) Communicating a philosophy of education that is student-centred and based on sound principles of effective teaching and leadership; (b) collaborating with teachers, principals, school jurisdiction leaders and other superintendents to build professional capacities and expertise; (c) actively seeking out feedback and information from a variety of sources to enhance leadership practice; (d) seeking and critically-reviewing educational research and applying it to decisions and practices, as appropriate; (e) providing leadership to support school authority research initiatives, where appropriate; and (f) engaging teachers, principals, school jurisdiction leaders, school community and local community members to establish a shared understanding of current trends and priorities in the education system. (Alberta Education, 2018e, p. 4)

Three indicators within the professional learning competencies are common between the three sets of standards: (a) collaboration amongst teachers, leaders, and school jurisdictions, (b) seeking and applying educational research, and (c) actively seeking feedback.

Professional growth plans. The TQS, LQS, and SLQS indicators urge educators to grow professionally. The indicators in the quality standards, although worded differently, identify that both teachers and leaders alike have the responsibility to seek knowledge grounded in research, collaborate, and both seek and provide feedback. It is a common expectation for educators and leaders to outline their professional goals in a document at the beginning of the school year. According to Donaldson and Posluszny (1985), professional growth plans (PGP)

should include: "(a) teacher strengths and weaknesses, (b) annual goals, (c) short-term objectives, (d) strategies to meet objective, (e) criterion levels, and (f) achievement dates" (p. 171). Often PGPs are fueled by a mix of a teacher's past experiences and the needs of the school year to come. Furthermore, Harris (2008) argues that focusing teacher goals on trying out various tools or resources, focus on instructional techniques, concentration on school culture or organizational change, or change beyond the school walls.

Creating a plan to accomplish professional goals is common across many different education systems internationally. In Singapore, educators can take up to 100 hours of professional development opportunities per year through their Ministry of Education. Teachers have a meeting with their principals and vice-principals at the beginning of the year to decide which professional development sessions they will take (Bautista, Wong & Gapinathan, 2015). In Australia, there is an Australian Professional Standards for Teachers, which requires teachers to create a professional plan in all provinces. For instance, in the Australian Capital Territory, all teachers must set their professional goals with their principal for the year in a document called Professionals Pathway Plan (Santiago, Donaldson, Herman & Shewbridge, 2011).

In September, all educators in Alberta must create and implement a professional growth plan (PGP) that outlines the professional development activities for the upcoming school year. The PGP outlines an educator's commitment to learning. The plan must include: (a) measurable outcomes that reflect the needs of the educator, (b) be closely connected to the TQS, and (c) must consider the education direction and goals for the school, district, and government (Alberta Teachers' Association, 2018). Alberta teachers are held accountable to

their PGPs by the principal or a group of teachers assigned by the principal. A principal does not have the authority to include a teacher's PGP in his or her evaluation. Therefore, PGPs are indeed a way for teachers to reclaim their professional growth while promoting life-long learning (Fenwick, 2004).

Action Research

One method of encouraging teachers to achieve their PGP goals that promote exploring research, collaborating, and gathering data and feedback is action research. Action research – a model that has been around for a long time – requires researchers to create a plan, execute their plan, and then evaluate their plan (Lewin, 1946). Action research within a PLD model provides time to staff to try something new in their practice, collect data, analyze the results, and then reflect and improve. Bassey (1999) defines action research as a process that "uses systematic and critical inquiry" (p. 41) through the evaluation of a system before and after a change was implemented. One of the fundamental differences between most professional development in education and action research is that action research begins with teachers identifying an issue within their practice from the inside out (Elliot, 1988; Harris, 2000). Engaging in action research means that teachers must continuously analyze their work and reflect on their practice (Stenhouse, 1975).

Furthermore, action research is most effective when teachers work collaboratively and draw from the expertise of colleagues, coaches, and consultants. There is little evidence, however, on providing teachers with the professional freedom to choose their own professional development experience, and on measuring the effects of their experience with action research within a professional learning model. Unfortunately, Fullan (1991) identifies that the

process of encouraging the teacher to pursue a goal with ambiguous circumstances is challenging. Compounding this issue include the state of a teacher's confidence, capacity, expertise, and amount of time to conduct action research properly (Robson, 2002). Additionally, Mockler and Groundwater-Smith (2015) argue that the action research process encourages teachers to challenge their own "beliefs and perceptions" (p. 4) because they must critically analyze their practice and unveil practices that might not be as effective as they thought. Dadds (2003) addresses this idea of teachers feeling unnatural in the action research process

We may be entering into a process by which we deconstruct some basic, historically rooted views of ourselves. In such processes, our existing images of the professional self will be challenged, questioned, rethought and reshaped to some degree. These processes are necessary if change and development are to occur, and self-study is to lead to learning. We cannot escape them, nor the discomfort they may bring if we value our commitment to professional development. (p. 288)

In this quotation, Dadds (2003) suggests that calling on teachers to engage in action research is challenging because teachers are required to challenge assumptions about their practice. Additionally, the action research process can be both time-consuming and uncomfortable for educators. Action research requires teachers not only to identify an issue within their practice but also to develop a new method or practice to measure later (Mertler, 2016). The teacher should not already have a predetermined answer when choosing a change initiative (Mertler, 2016). Before engaging in the action research process, James and Augustin (2018) identify that teachers must be willing to question their practice while having the liberty to make choices within their school context. Action research is not the

everyday work of teachers; it is instead more systematic and collaborative (McLean, 1995; Mertler, 2016), with a focus on improving teaching and learning (James & Augustin, 2018). Two conditions must exist to ensure action research is successful for teachers. First, trust must exist between colleagues. Second, critical relationships must exist that are sustainable, resilient, and tenacious (Day & Hadfield, 2004).

Particular research has investigated a specific cause and effect relationship within small cohorts of teachers who are interested in analyzing data. For example, Elliot (2007) completed a longitudinal ethnographic study with 200 early-childhood teachers who completed action research within their practice. All teachers reported: (a) having a positive experience with their action research projects, (b) altering their teaching practices, (c) receiving significant learning gains, and (d) increasing their early literacy knowledge. The teachers also reported that the action research process had a positive impact on student achievement. In the conclusion of this study, Elliot (2007) reflected that “job-embedded professional development such as action research supports authentic learning and offers educators valuable insights into their practice” (p. 41).

Research Gap

There is an abundance of research on PLD (Campbell et al., 2016, Cohen & Hill, 2001; Darling-Hammond & Richardson, 2009; Fogarty & Pete, 2010; Fullan & Hargreaves, 2016; Garet et al., 2001; Hargreaves et al., 2009; Hill & Ball, 2004; Parsons & Beauchamp, 2012; Timperely, 2011; Yoon et al., 2007). Additionally, there are multiple studies internationally about a variety of programs and initiatives implemented within schools to improve practice (Beauchamp, 2012; Campbell et al., 2016; Canadian Teachers’ Federation, 2014; DuFour, 2004; Hargreaves et al.,

2009; Parsons &). There are gaps in the research in the category of educational action research, however. Much of the action research in schools has occurred at the post-secondary level with pre-service teachers or with small cohorts of subject-specific teachers (Elliot, 2007; Kennedy et al., 2018). Few studies exist a large school staff engages in action research. There have also been no studies to understand how PLD models align with the Alberta TQS.

Purpose Statement

The purpose of this mixed-methods study was to investigate the extent to which educators perceive action research as having the capacity to facilitate engagement in TQS Competency 2, or engagement in “career-long professional learning and ongoing critical reflection to improve teaching and learning” (Alberta Education, 2018c, p. 4). More specifically, this study sought to understand teacher perceptions of the process of planning, executing, and evaluating a research-based process within their practice. This study was guided by the following research questions that investigate how specific indicators of TQS Competency 2 meets the professional learning needs of teachers:

- (a) To what extent does participating in action research facilitate teachers collaborating with other teachers to build personal and collective professional capacities and expertise?
- (b) To what extent does participating in action research facilitate teachers actively seeking out feedback to enhance teaching practice?
- (c) To what extent does participating in action research facilitate teachers building capacity to support student success in inclusive, welcoming, caring, respectful and safe learning environments?

(d) To what extent does participating in action research facilitate action seeking, critically reviewing, and applying educational research to improve practice?

(e) To what extent does participating in action research facilitate enhancing understanding of First Nations, Métis, and Inuit worldviews, cultural beliefs, languages, and values?

(f) To what extent does participating in action research facilitate maintaining an awareness of emerging technologies to enhance knowledge and inform practice? (Alberta Education, 2018c, p. 4)

Significance

This study is significant to the PLD of teachers, especially considering that a tried and true PLD model does not exist. Additionally, there is not a consistent funding model for PLD at the provincial, district, or school level. With no funds and a professional learning model that is inconsistent from school to school, it is challenging to determine the effective PLD models.

This study must consider the foundational principles of PLD models. First, responding to the professional learning needs of educators is incredibly essential. Campbell et al. (2017) identified in a summary of the state of professional learning in Canada that teachers valued a balance between system-directed and teacher-directed professional learning. Campbell et al. (2016) also concluded that when teachers have the flexibility to choose their professional learning, there is more flexibility to identify learning needs connected to their context. The Alberta Teachers' Association (2016) conducted a study about teachers' professional development experiences, seeking to understand professional autonomy and choice provided in developing and meeting the goals identified in your professional

growth plan. The data was collected from local Alberta PD committees in conjunction with their Economic Policy Committees, who were to meet as a group and construct responses. In total, 72% of Alberta's school divisions ($n = 72$) submitted the survey. Within the study, 39% of respondents reported having a high level of autonomy, 44% responded to having some degree of autonomy, and 16% responded having little autonomy. These results are concerning because a similar study conducted in 2014 found 47% of respondents felt they had a high level of autonomy (Alberta Teachers' Association, 2015). Action research has the potential to provide a method for teachers to be autonomous in their professional learning

Second, teachers must have job-embedded time to work on their professional goals. In Alberta, research indicates that teachers do not have sufficient time for such self-directed learning. Campbell (2017) identified that 76% of teachers had 0 to 2 days for self-directed professional development, 19% of teachers had 2 to 4 days for self-directed professional development, and 6% of teachers had 5 to 7 days for self-directed professional development.

Conversely, the survey determined the number of school-based teacher professional development experiences. The results of the study showed that 20% had 0 to 2 days, 40% had 2 to 4 days, 24% had 5 to 7 days, 11% had 8- to 10 days, 2% had 11 to 14 days, and 2% had more than 14 days that were school-directed (Campbell, 2017). These numbers reveal that most professional development days are school-based, leaving little job-embedded time for teachers to work on their professional goals. As a result, creating time for teachers to work towards and achieve their goals could be achieved through an action research model. As a result, providing time for educators within this study is fundamental.

Third, teacher efficacy and work-life balance are abundantly crucial in Alberta's teaching and professional learning context. Froese-Germaine (2014) conducted a study that discussed the factors that influence the high points and low points of PLD and the factors that influence teacher efficacy and work-life balance throughout the school year. The participants of the study included 117 secondary teachers and 44 elementary teachers at a summer conference, and all teachers taught in Alberta. Of these teachers, 59% identified that it was "Very Important" to "Provide more relevant and engaging professional learning opportunities" (Parsons & Stiles, 2014, p. 16). This study also identified that teachers wanted the opportunity to participate in positive, collaborative professional development. This study also highlighted the issue that over half of the participants did not have access to professional development during the day. That one-third of the participants had no control over their professional development. Teachers are more engaged when professional development targets their goals and the context of their classrooms (Parsons & Stiles, 2014). This study aims, through action research, to ensure that educators can have autonomy when working on their professional goals.

Adult Learning Theory/Andragogy

In this study, analyzing educators' perspectives and experiences towards action research within a professional learning model is the focus. Having a solid understanding of how adults learn, process, and act on knowledge is vital to this study. When choosing a philosophical approach to guide teaching techniques, two options currently exist: pedagogy and andragogy (Forrest III & Peterson, 2006). Knowles (1972) differentiated the difference between pedagogy and andragogy. Pedagogy is "the art and science of teaching children" (p. 32), whereas andragogy

is the “art and science of helping adults learn” (p. 32). How adults learn within an action research model is the focus of this study; therefore, this study is grounded in andragogy.

Knowles (1978) identified that adults have a variety of interests and responsibilities between recreation, family, work, and community; therefore, adjusting adult education to fit with these other demands is necessary. All the participants in this study were engaged in action research while teaching and staying involved in extra-curricular activities within their school community. Setting aside a time and place that is convenient for teachers to work on their action research is critical (Knowles, 1975). Adult education also must be malleable with the variances in ages; the readiness of each participant is going to vary (Knowles, 1978). Additionally, the skill set necessary for the workforce is always evolving, and adult education must be responsive to these changes (Rada, 1980).

Knowles (1978) argues that adult learners are self-directed and their motivation to learn changes based on life experience, needs, and interests. They are often goal-oriented, learning-oriented, or activity-oriented. Furthermore, the best way for adults to learn new skills is through experience and when there is a direct application of the knowledge (Knowles, 1972; 1978). Unlike pedagogy, adult learners have a vast amount of experience that they can draw. The teacher must understand that adult learners have a rich body of knowledge, and the inquiry of new knowledge is mutual between the teacher and pupil (Knowles, 1978).

Cunningham (1993) identified that the power of the group has a considerable influence on the individual because the group provides status and stability. As a result, the adult education setting is often spontaneous and unpredictable because driving the content and discussions are the pupil's experiences (Knowles, 1978).

When students apply their life-experiences, it increases the learning for the others in the class (Goddu, 2012).

Because of the diverse and ever-changing needs of the adult learners, Knowles (1972; 1978) advocates that the design for learning must be focused primarily on the learners' needs. The first step in adult education is to create a healthy learning environment that promotes "informality, mutual respect, physical comfort, [and] collaboration" (Knowles, 1972, p. 36). When the environment is rich, the learner will be a more active participant in return (Knowles & Bradford, 1980). A large piece to consider when facilitating adult learners is setting the climate that encourages self-directed learning (Forrest III & Peterson, 2006; Goddu, 2012; Knowles, 1972). Knowles (1971) continues that adult learners should have a voice when planning a program or course to increase engagement and is parallel with the learners' needs.

After setting the climate and creating a plan for the program, Knowles (1972) reveals that diagnosing needs based on "knowledge, understanding, skill, attitudes, values, and interests" (p. 38). The facilitator must understand the needs of the learner while considering how to connect the material to the needs of society, the profession, and an academic institution (Knowles, 1972). Knowles (1972) identifies the next step of the planning process is to create activities and lessons based on the first four steps of the model and then acting on the plan. Finally, he identifies that there is an evaluation process at the end of the learning experience. From his experience, grades are not the best way to motivate adults. Adults often have a desire to learn (Knowles, 1978) and can benefit from a self-reflection process (Knowles, 1972). Knowles' andragogical framework is for the formal education setting; however, the points that he makes also apply to a professional

learning setting in education. The theoretical framework for this study investigating the extent to which educators perceive action research as having the capacity to facilitate engagement in TQS Competency 2 (Alberta Education, 2018c) is Knowles' Adult Learning Theory.

Summary

The goal of PLD is to develop educators into being “moral, mature craftspeople” (Fullan & Hargreaves, 2016, p. 4) within a system with high professional learning and high professional development. PLD is a system where both professional development and professional learning interact. As a result, schools must create PLD models that are sustainable and encourage educators to improve their practice. The best way to accomplish this goal is through action research. Action research encourages educators to create a plan, execute the plan, gather the data, and then reflect on their practice (Lewin, 1946; Stenhouse, 1975). As a result, educators have time to work on professional goals that are meaningful and may make an impact on their practice. The purpose of this mixed-methods study was to investigate the extent to which educators perceive action research as having the capacity to facilitate engagement in TQS Competency 2. This study included a large school staff with complex professional needs; therefore, it filled a research gap. Much of the research thus far has been completed in fields not related to education or on a smaller scale with a small group of educators.

The following chapter will outline a review of the literature. The literature will include a review of professional growth plans, PLD, and action research and how these models can increase student achievement and support teachers in the classroom. Chapter 3 will outline the methodology of this study. This study was a mixed-methods study and utilized interviews, observations, and surveys to collect

data. Chapter 4 will present the results of the study. Finally, Chapter 5 will then describe the conclusion, discussion, and implications and the limitations of the study, and areas of future research.

Chapter 2: Literature Review

Understanding how educators engage in action research is necessary for this study. This section will explore the literature regarding PLD, action research, professional growth plans (PGP), and how these three key pieces overlap. More specifically, this chapter will unpack PLD in a variety of contexts across different studies. A potential model for PLD is action research. Action research will be defined and described as well as the dimensions and assumptions that exist within action research in education. The goals identified by the teacher drives action research. Embedded within both the PLD and action research literature review, Professional Growth Plans (PGP) will be discussed. PGPs are an important element of the Alberta education system and essential within both the PLD and action research models. All the methods and research will be viewed through an andragogy lens.

Professional Learning and Professional Development

The preliminary stages of PLD begin with teachers identifying what students need to know and the values of the communities they serve. Furthermore, teachers can improve their practice when they have a solid understanding of their students' profiles, for they can better address the needs of the students. The teacher can then create goals and PLD foci to address these needs and refine their practice. Through inquiring about how to meet the needs of the students best, the teacher can build knowledge and adapt to new or persistent issues. The central purpose of all PLD must be improving student learning (Fullan d& Hargreaves, 2016).

Furthermore, all teachers and administrators must have the mindset that schools teach all students. Teachers need to shift their views from assessing students for credentialing to a reflection on their teaching practices. The students'

assessment results inform teachers' PLD. When teachers lack a depth of knowledge in their practice, they are keener to implement a new idea without fully understanding its implications on students learning. Teachers develop knowledge about their practice by trying new things and reflecting on the process (Timperley, 2011). This study will consider all factors of quality PLD to ensure that educators have a positive and meaningful PLD experience.

The State of Educators' Professional Learning in Canada study identified key components and features of PLD. Within this study, Campbell et al. (2016) completed a thorough literature review of effective PLD and included empirical evidence from Canadian studies. The researchers categorized the ten findings of PLD into three categories: quality content, learning design and implementation, and support and sustainability (Campbell et al., 2016). Figure 2 outlines a summary of their 10 findings.

Key Components and Features of Effective Professional Learning Identified in Review of Research Literature		Key Findings from Study of Educators' Professional Learning in Canada
Quality Content	Evidence-informed	Evidence, inquiry, and professional judgement are informing professional learning policies and practices
	Subject-specific and pedagogical content knowledge	The priority area identified by teachers for developing their knowledge and practices is how to support diverse learners' needs
	A focus on student outcomes	A focus on a broad range of students' and professionals' learning outcomes is important
	A balance of teacher voice and system coherence	The appropriate balance of system-directed and self-directed professional development for teachers is complex and contested
Learning Design and Implementation	Active and variable learning	There is no "one-size-fits-all" approach to professional learning; teachers are engaging in multiple opportunities for professional learning and inquiry with differentiation for their professional needs
	Collaborative learning experiences	Collaborative learning experiences are highly valued and prevalent within and across schools and wider professional networks
	Job-embedded learning	Teachers value professional learning that is relevant and practical for their work; "job-embedded" should not mean school-based exclusively as opportunities to engage with external colleagues and learning opportunities matter also
Support and Sustainability	Ongoing in duration	Time for sustained, cumulative professional learning integrated within educators' work lives requires attention
	Resources	Inequitable variations in access to funding for teachers' self-selected professional development are problematic
	Supportive and engaged leadership	System and school leaders have important roles in supporting professional learning for teachers and for themselves

Figure 2. Key Component and Features of Professional Learning Identified in

Review of Research Literature. Note. From *The State of Educators' Professional*

Learning in Canada by Campbell et al. (2016). Retrieved from

<https://learningforward.org/docs/default-source/pdf/learning-forward-report-the-state-of-educators-professional-learning-in-canada.pdf>

The list that Campbell et al. (2016) created is robust. The next sections will explore each of the categories by including a review of the literature review and empirical studies for each category.

Quality content. The first consideration when creating PLD is that it must include quality content that is essential for teachers. Campbell et al. (2016) discovered through a literature review that PLD must be evidence-informed,

include subject-specific and pedagogical content knowledge, be focused on student outcomes, and have a balance between teacher voice and system coherence.

Evidence-informed. PLD must be informed by evidence and data in conjunction with a professional knowledge base and judgement (Campbell et al., 2016). Fogarty and Pete (2010) identify that “if schools are to replace ineffective practices with research-based, teacher-tested, proven best practices, there must be measurable results, or the efforts will never be maintained or sustained” (p. 34).

Traditionally, evidence to improve schools has been driven by research, student achievement, and teacher knowledge. Although these pieces of information are valuable, seldomly do they provide definitive answers (Timperely, 2010). Instead, Timperely (2010) argues that school leaders need to “support teacher to interpret and use the available evidence to inform and improve their own leadership practice” (p. 2) or “develop school-side systematic, evidence-informed cycles of inquiry that build the relevant knowledge and skills” (p. 2). An evidence-informed cycle includes five stages. First, the school leader has to assess holes in teachers’ knowledge. Second, the school leader must help teachers to increase their knowledge and skills. Third, as a result of the teachers’ new knowledge and skills, the students have new learning experiences. Fourth, the impact of the students’ new learning experiences is realized. Finally, determining the gaps in students’ knowledge, and then continuing the cycle again. Through this cycle, school leaders and teachers are continuously using data to inform their next step. For this cycle to be successful in schools, teachers must work collaboratively with other teachers and school leaders when analyzing and making decisions based on the data available (Timperely, 2010).

Subject-specific and pedagogical content knowledge. A consistent need in the area of PLD is for educators to continue their education in pedagogical practices and understand how to support all learners – including learners with complex needs (Campbell et al., 2016). This PLD focus can come in a variety of forms. Fullan and Langworthy (2013) suggest that teachers should engage in “deep learning goals enabled by new pedagogies and accelerated by technology” (p. 4). With the rapid pace of technologies changing, educators now require more training in the areas of computational thinking, coding, and technology integration in the classroom (Campbell, 2017). Another burning area of need in Canada’s classrooms today is a deeper understanding of how to support First Nations, Métis, and Inuit students (Canadian Teachers’ Federation, 2015) and how to respond to the recommendations within the Truth and Reconciliation Commission of Canada (Truth and Reconciliation Commission of Canada, 2015a). Finally, the Alberta Teachers’ Association (2015) identified that Alberta teachers are also interested in gaining more knowledge and skills to support students with complex medical and learning needs. Campbell (2017) reveals that the best way to respond to these areas of need is by educating educators through PLD. However, focusing on pedagogical content knowledge does not imply that all pedagogical strategies will work for all teachers. Cordingley et al. (2015) stated that a pedagogical content focus in PLD is “rooted in developing content knowledge to underpin such strategies and exploring how they work for different groups of pupils are not likely to achieve their potential” (p. 5).

Additionally, providing subject-specific PLD is equally as important. Kamanzi, Riopel, and Lessard (2007) reported that only 50% of 4,569 educators across Canada felt that they had mastered the content of their subjects at the

beginning of their careers. Each subject and its respective curriculum are unique, so PLD can help meet these unique teacher needs. Shulman (1986) describes:

The curriculum is represented by the full range of programs designed for the teaching of particular subjects and topics at a given level, the variety of instructional materials available in relation to those programs, and the set of characteristics that serve as both the indications and contraindications for the use of particular curriculum or program materials in particular circumstances. (p. 10)

Providing PLD sessions that seek to fit all subject areas are ineffective. PLD models must consider each subject and grade level when delivering messages to educators (Campbell et al., 2016).

A focus on student outcomes. Focusing on both student and professional learning needs is necessary (Campbell et al., 2016). Teachers have a responsibility to understand what motivates students. Once a teacher understands the students in their class, then student-centred teaching practices can become goals on a teacher's PGP. Some ways to achieve student-centred teaching practices might include changing the learning environment, assessment strategies, methodologies, or the pace of the lessons (Frasineanu & Ilie, 2017). When PLD is deep and substantial, the level of education provided to students will increase (Killion & Kennedy, 2012).

Education is a basic right for all children in Alberta. Therefore, Alberta teachers must value and embrace inclusion when creating their PGPs. Teachers are required to know who the students are in the classroom and if they require special resources or attention. It is impossible for teachers to know which inclusion strategies will be effective. Teachers must be willing to make themselves

vulnerable to the fact that some of their inclusion tactics are not going to be successful the first time (Skytt & Turville, 2012).

Teachers must also set a respectful tone within the classroom that values diversity and equality. This is especially important when addressing and increasing understanding of First Nations, Métis, and Inuit worldviews, cultural beliefs, languages, and values. Elmore (2000) argues that for this to happen, educators must be equipped with culturally responsive practices. Therefore, any prior assumptions and practices must be altered (Abrams & Gibbs, 2000). These changes come in the form of supporting, evaluating, and mentoring educators about culturally responsive practices (Sobel, Taylor, & Anderson, 2003) in conjunction with administration support (Smylie, 1995). Considering culturally responsive teaching will be necessary when discussing the results from this study.

A balance of teacher's voice and system coherence. “The appropriate balance of system-directed and self-directed professional development for the teacher is complex and contested” (Campbell et al., 2016, p. 3). Dufour (2011) reveals that time provided for both system and self-directed PLD must be job-embedded. Job-embedded time includes providing supports to educators that are available and accessible all day (Fogarty & Pete, 2010). O’Neill (2008) argues that school districts need to fix the problem, process, and system to solve achievement problems.

Additionally, there must be a goal with a solid process to support it. To solve the process, district leaders must have a plan outlined with steps to improve the process. Implementing initiatives and sending teachers to professional development does not solve a process. District leaders must think at a deep level and have sustainable plans that will solve the process. O’Neill (2008) argues that

innovations, initiatives, and programs are not going to decrease the achievement gap or improve an education system. Leaders must create measurable, step-by-step goals to improve education within a district continually.

In Alberta, every school district must complete a three-year education plan. This three-year plan must include mechanisms for ensuring: (a) all students are successful, (b) there is no achievement gap between Indigenous and all students, (c) all schools are inclusive, (d) the teachers and school authority leaders are excellent, and (e) the education system is well run. These plans must be submitted to the province every three years and posted on the district's website. Likewise, each school in Alberta must submit an education plan to its respective school district. The school education plan must include strategies to ensure: (a) each student is successful, (b) the teaching and leadership within each school is superb, (c) the education system is administered successfully, and (d) all Indigenous students are successful. The Alberta government outlines specific outcomes under each requirement for the one- and three-year plans. The outcomes are graduation rates, diploma completion, accountability pillar surveys, and program accessibility to students. Furthermore, some districts require their teachers to consider and align their PGPs to the three year and one-year education plans (Alberta Education, 2016b).

Learning design and implementation. Creating space and opportunity for teachers to be actively involved when designing and implementing PLD is necessary. For PLD models to achieve this, the PLD must include active and variable learning, collaborative learning experiences, and job-embedded learning (Campbell et al. 2016).

Active and variable learning. There is no single PLD model that works for all educators. Educators require the opportunity to engage in many different forms of PLD that are both interactive and practical (Campbell et al., 2016). Teachers must be actively engaged in training that is applicable rather than theoretical (Knowles et al., 1998; Zemke & Zemke, 1981). Knowles (1972) described how adult learners want to apply their new knowledge immediately. Furthermore, Darling-Hammond and Richardson (2009) argued that PLD also enhances teachers' pedagogical and content knowledge. Additionally, PLD identified that adult learners like to access PLD through face-to-face interactions, web-based, and collegial conversations (Forgarty & Pete, 2010).

In Taiwan, the Readers' Theater Teaching Program (RT) is an example of a PLD model that requires active participation from teachers and focuses on improving student learning. Lin, Cheng, and Wu (2015) studied two veteran Grade 7 teachers who used the RT program over two years. The focus of the first year was for the teachers to learn, design, and implement the RT program into their classrooms. Overall, the teachers engaged in 54 hours of RT PLD. The focus of the second year of this study was to measure the students' reading fluency. The study was a qualitative case study and measured the RT through a "professional development interview, pre/post subject matter exams, teacher interviews, surveys, classroom observations, and student's Reading Fluency Test" (Lin, Cheng, & Wu, 2015, p. 67). On a survey, one teacher included: "I learned more from the RT program than in any professional activities I have ever attended. I am most excited about the knowledge I gained. Moreover, I also used RT in my classroom" (p. 70). Overall, the participants of this study had a positive experience and increased their knowledge about reading fluency. Additionally, the average scores from the pre-

test to the post-test for the students in the RT program increased by 36%. When educators are actively engaged and have measurable goals, there is increased success of the PLD model.

Collaborative learning experiences. Fogarty and Pete (2010) argued that in addition to having access to several PLD opportunities, PLD must also be collegial. When teachers have opportunities to create solutions together, this type of PLD is the best way to improve a school (Schmoker, 1996). When educators work collaboratively, “they establish clear benchmarks and agreed-on measures to monitor progress (DuFour, 2011, p. 59). Carroll (2009) agrees that “quality teaching is not an individual accomplishment; it is the result of a collaborative culture that empowers teachers to team up to improve student learning beyond what any of them alone can achieve alone” (p. 13).

One challenge of PLD is that teachers are “reluctant to put themselves under the microscope and truly scrutinize the effectiveness of their efforts” (Guskey, 2009, p. 227). As a result, it is challenging to encourage educators to collaborate because not all educators are willing to change their practice. Sanders, Parsons, Mwavita, and Thomas (2015) tackled this issue through collaborative autoethnographic research. The study took place in a school division that had a high teacher turn over, and there was little trust between teachers and administrators. Additionally, the student population was of low-socioeconomic status.

The researchers were hired by a senior administrator to work with teachers to help improve literacy. Working with the teachers and building rapport with the teachers was challenging because the teachers were fearful that the researchers were evaluating their practice. Of the four researchers, they each had specific roles

in supporting literacy while working as collaborative ethnographic researchers. Two of the researchers created and planned the material for the teachers. One of the researchers strategically planned the research and directed the team. The last researcher was a doctoral student who supported the team with the writing process (Sanders et al., 2015).

After collaborating with the teachers, the researchers' findings fell into four themes. The first theme was "working with marginalized instructors" (p. 233). The researchers had a variety of interactions with teachers. The researchers had developed relationships quickly with the teachers who displayed confidence in their craft. These teachers were willing to have researchers in their classrooms and share their goals. Conversely, the teachers who struggled with teaching methods and content knowledge were the most resistant to the researchers. The researchers had to position themselves as not being in the schools to sanction teachers but rather to help them by establishing mutual trust and respect. The second theme was "principals as gatekeepers" (p. 234). The research team generally found they were welcomed into the schools they were assigned. Unfortunately, in some cases, support from the administration was perceived as a threat to some teachers. In one school, there was so much resistance from the principal that the researchers were not able to affect change. One of the researchers reflected about an interaction they had with the principal. The principal was abrasive and unwilling to interact with the researchers. He did not view them as being valuable to the school, and the researchers were not able to engage positively with the school.

If a strong relationship was not established with the school principal, there was no opportunity to work within that school. The third theme of the study was "developing trust and credibility to build relationships" (p. 235). The teachers often

viewed the researchers as researchers and not as knowledgeable educators that would understand their work. The researchers had to shift their approach from giving lectures to working alongside the teachers.

Additionally, the researchers determined that interpersonal trust was not the same as collegial trust. Therefore, the researchers made more of an effort to share their teaching experience and stories with the cooperating staff. The researchers were more trusted and perceived as more credible when the staff would speak highly about the researchers with each other. The final theme of Sanders et al.'s (2015) study was "making connections with individuals" (p. 235). The most progress was with teachers who the researchers worked with one-on-one. Understanding the needs of both the students and teachers provided a platform for the researchers to have a meaningful role.

Most importantly, the researchers "suggestions and ideas for instruction were most readily adopted or accepted when a teacher felt confident in his or her own pedagogical knowledge, felt safe and supported in the position held at school, and possessed agency" (Sanders et al., 2015, p. 235). Unpacking Sanders et al. (2015) study is essential to this study and PLD research. Sanders et al. (2015) were candid about their collaboration journey with the schools and added a valuable lens to settings that might be more challenging or difficult. Educators collaborating with a research team or other colleagues have potential and pitfalls. Combatting and understanding the pitfalls of collaboration will be a necessary consideration for this study.

Job-embedded learning. Current research on teacher learning provides a clear message about PLD: it must be job-embedded. Campbell et al. (2016) reiterate that PLD must be relevant to teachers' work and providing time to

collaborate and work with others outside of their school. Furthermore, job-embedded PLD facilitates learning that serves teachers to improve their pedagogical strategies to, in turn, improve student achievement (Darling-Hammond & McLaughlin, 2011; Hirsh, 2009). Croft, Coggshall, Dolan, Powers, and Killion (2010) comprised a list of examples and non-examples of job-embedded PLD. When PLD is job-embedded, it occurs either before, during, or after class and is focused on the “current students” and “issues of actual practice” (Croft et al., 2010, p. 3-4).

Job-embedded PLD focuses on the students to which the teacher was assigned. Examples of job-embedded PLD include: (a) action research, (b) case discussions, (c) coaching, (d) critical friends’ groups, (e) data teams/assessment development, (f) examining student work, (g) implementing PGPs, (h) lesson study, (i) mentoring, (j) portfolios, and (k) professional learning communities (Croft et al., 2010; Brown-Easton, 2008; Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009). Good job-embedded PLD must be planned out and well-executed. Table 2 provides examples of how to support job-embedded PLD at the provincial, district, and school levels (Croft et al., 2010).

Table 2

Supporting and Facilitating Effective Job-Embedded PLD at the Provincial, District, and School Level

Level of Leadership	Methods to Support and Facilitate Job-Embedded PLD
Provincial Level	<ul style="list-style-type: none"> - Help build a shared vocabulary - Provide technical assistance and funding - Identify successful job-embedded practices with the province - Build comprehensive data systems to inform job-embedded PLD decisions
District Level	<ul style="list-style-type: none"> - Engage in long term strategic planning for human capital development - Work to develop school practices that foster continual PLD - Help principals identify instructional leaders - Help principals plan job-embedded PLD - Help principals plan collaborative learning time - Create opportunities for teachers to become instructional leaders and job-embedded PLD facilitators
School Level	<ul style="list-style-type: none"> - Emphasize the importance of continuous learning for all staff members - Develop a school culture where learning is essential to professional practice - Identify and support instructional facilitators - Use student data performance to drive job-embedded PLD

Note: The information in this table has been adapted to fit a Canadian context from an American context and is from *Job-Embedded professional development: What it is, who is responsible, and how to get it done well* by Croft et al. (2010). Retrieved from <https://files.eric.ed.gov/fulltext/ED520830.pdf>

There are many ways to implement job-embedded PLD at the provincial, district, and school level. Sometimes, the teachers can also source out third-part support with a specific skill set to support their job-embedded PLD initiatives. For example, Ernst, Clark, and Bowers (2016) aimed to increase the quality of PLD in the areas of science, mathematics, engineering, and technology. More specifically, the research team recognized that there was a lack of good PLD in the areas of

technology, design, and engineering. As a result, they created an online course for 32 teachers over two years to directly improve a teacher's ability to manage, monitor, and adjust learning environments; contribute to a learning community; and increase self-assessment by using their job-embedded PLD model. Collecting data for this study included the following methods: interviews, artifacts, video capture, and quantitative analysis of the teachers' ability to manage, monitor and adjust learning environments. Additionally, summative assessments measured the students' competency of the subject-matter from the online PLD. This study was an example of job-embedded PLD because the teachers were able to apply their new knowledge to their classrooms directly, and the PLD was, in turn, reactive to the teachers' classrooms because of the ongoing data that teachers provided. The online PLD model worked within this context because the delivery was seamless and specifically targeted the participating teachers. Additionally, the online model improved teaching practices and promoted individual growth.

Support and sustainability. For PLD to be sustainable, educators must have support in the form of time and resources. Additionally, school leaders are key players when creating PLD plans and models.

Ongoing in duration. Within PLD, the big picture must be identified, have a long-term plan developed, have regularly scheduled team meetings, offer many options for staff to participate, and have guidance through collaboration and coaching (Campbell et al., 2016). "The most complete form of self-directed learning occurs when process and reflection are married in the adult's pursuit of learning" (Brookfield, 1985, p. 58).

Highly valuing ongoing support within PLD was a focus for a study completed in Oregon, including 22 school districts and 140 elementary schools. An

initiative called Effective Behaviour and Instructional Support Systems (EBISS) was used as a platform to “install, implement, and sustain a continuum of effective school-wide academic and behavioural practices, designed to culminate in measured improvements in important student outcomes” (Chaparro, Smolkowski, Baker, Hanson, & Ryan-Jackson, 2012, p. 466). The study occurred for two years and focused explicitly on reducing behaviour issues within schools and increasing literacy scores. The study was successful overall; there was an increase in positive behaviours, and there were statistically significant improvements in literacy. The exciting aspect of this study was the implementation of the PLD. PLD was ongoing and delivered at the individual, school, and district levels. Some examples of PLD included how to analyze reports, administer the literacy assessment tools, create leadership teams, and plan sessions on effective pedagogical practice for literacy and classroom management strategies (Chaparro et al., 2012). Having a common goal and providing ongoing supports for districts and schools to be successfully allowed this PLD model to be successful and sustainable.

Resources. PLD does not have a chance to be successful unless educators have access to resources (Campbell et al., 2016). The New Brunswick Teachers’ Association (2016) conducted a survey with 741 respondents to investigate teachers’ professional learning. The three barriers of PLD reported in the study were funding (53% of respondents), inconvenient timing (81% of respondents), and increased workload (54% of respondents).

Funding affects whether educators will engage in PLD (Yashkina, 2016). The government funds public schools; therefore, the government also funds PLD. When the government decides to cut funding, then the PLD connected to the funding is reduced too, as was the case with the AISI initiative described in

Chapter 1 (Hargreaves et al., 2009; Parsons & Beauchamp, 2012). Collective agreements outline the amount of personal PLD monies educators have access to (Campbell, 2017). Campbell (2017) revealed that personal PLD ranged from \$100 to \$2,500 per teacher across Canada. Teachers who did not have a permanent contract or who lived in rural areas had the least access to personal PLD funding. Ziemke and Ross (2014) have suggested some cost-effective strategies to support educators with their PGPs. Some of the cost-effective PLD educators can participate include: (a) engaging in a collegial book study, (b) developing peer mentoring relationships, (c) online collaboration, (d) complete research about areas of interest within a teacher's classroom or school, (e) take online courses, and (f) reflect on pedagogical practices. Ziemke and Ross (2014) also believed that teachers should capitalize on the strengths and resources of their colleagues to develop professionally as well. Collegial relationships that focus on PLD can happen authentically or through mentorship programs by partnering with a less experienced teacher with a veteran teacher (Ziemke & Ross, 2014).

Another tension with PLD is the amount of time available to educators. Teachers often engage in their PLD on their own time to make up for the lack of time during school hours (Campbell, 2017). A Fort McMurray school division altered the school schedule to increase the number of PLD days to 14, where 9 were school-based and 5 were district-based. The school-based PLD days were up to the discretion of the school leadership and can include small or large group activities where the activities and initiatives are focused on school-specific data and foci. The district goals, on the other hand, are focused on district initiatives and provide educators from different schools to collaborate (Campbell et al., 2016).

Supportive and engaged leadership. School leaders are responsible for supporting PLD for all staff members. Leaders can support and help teachers inquire through reflecting and reviewing assessment information together. Principals, although not knowledgeable in all subject areas, should consider their staff as "their class," where the goal is to increase learning for all staff members. The complexities of the classroom are too vast for a teacher to navigate alone. When leaders do not have enough knowledge to support a teacher, they have the responsibility to seek out experts who could best support the educator. External experts are invaluable to the process because they bring a fresh perspective that can challenge or support the status quo. Simply supporting and responding to the most engaged teachers is not enough; leaders need to support *all* staff members. When teachers feel unsupported or judged, they are not as likely to engage in an inquiry process. Furthermore, the teachers will not participate in PLD if they do not feel as though their learning needs or their students' learning needs are being met (Campbell, 2016).

When leaders engage staff in PLD opportunities, Fullan (2005) identifies that the entire system is engaged in problem-solving. The entire system represents all teachers, leaders, and those with expertise within the division. Eventually, the teacher should be able to control more of their learning and seek out expertise to deepen knowledge within a specific area when necessary. The PLD process should become self-regulated.

Understanding the effects of leadership on PLD was the focus of a qualitative study at an elite, private school in Karachi. Nooruddin and Bhamani (2019) sought to understand the role of leadership and its key factors to be successful. The study included two school leaders, both of who view PLD as

important and meaningful to education. Moreover, both leaders believed that PLD must be continuous, job-embedded, and of high-quality, with a focus on student and teacher needs. Through comprehensive interviews, the researcher determined that leaders play an integral role in PLD. When the school culture around PLD is positive, teachers should be comfortable observing other teachers' lessons and providing feedback in a relaxed environment. Additionally, convincing teachers to engage in learning is important. To overcome issues associated with teacher apathy and weak school culture, the school leader must model engagement in PLD and plan enriching tasks for teachers (Nooruddin & Bhamani, 2019).

School leaders also play a key role in supporting teachers with their professional growth plans. Currently, Alberta does not have a necessary protocol to follow when teachers construct their professional growth plans. In the state of Florida, teachers with less than three years' experience develop their PGPs with a mentor teacher (Ziemke & Ross, 2014). The mentor teacher and the beginning teacher have a pre-observation meeting, classroom observation, and post-observation meeting before developing the lesson plan. The pre-observation meeting is an opportunity for the beginning teacher to discuss the lesson plan with the mentor teacher. The conversation focuses on how the lesson is related to the curriculum, how the teacher plans on managing the classroom, and how the teacher plans on assessing the students. The observation is both formative and summative with the objectives based on long-term teacher development. The purpose of the post-observation is for the mentor teacher to discuss with the beginning teacher the strengths and weaknesses of the lesson. The beginning teacher then writes his or her PGP based on the feedback given by the mentor teacher in the post-observation meeting (Ziemke & Ross, 2014). Brennan, Thames, and Roberts (1999) argued that

there are mutual benefits in partnering a beginning teacher with a mentor teacher. Beginning teachers can develop their identity as a teacher and refine their pedagogical skills. Mentor teachers, on the other hand, can enhance their analytical skills as they breakdown the teaching profession and curriculum.

When implementing professional growth plans effectively, the principal naturally becomes an educational leader (Sullivan, 2010). When principals have an active role in their teachers' PGPs, principals can manage expectations, relationships, and standards (Hall, 2007). Donaldson and Posluszny (1985) believe that immediately after the teacher and administrator have a conversation regarding the PGP at the beginning of the year, the roles and responsibilities of both parties should be determined. Conversely, when principals show interest and engage in the PGP of the teacher, then the teacher has a higher chance of being successful in achieving his or her goals (Sullivan, 2010). Evaluations and supervision throughout the entire year are ways that principals can be actively involved. Effective evaluations have pre-observation and post-observation meetings, rather than the administrator simply observing a teacher semi-annually without any further dialogue (Donaldson & Posluszny, 1985).

Understanding the relationship between the administrator and the teacher is key during the PGP process. Audet's (2005) study separated teachers and administrators into two groups and collected feedback through questionnaires and interviews to determine the effectiveness of the teacher-administration meetings regarding PGPs at the beginning of the school year. Both the teachers and administrators agreed that the interviews did not feel authentic, caused anxiety, and the evaluation criteria for classroom observations should be available to teachers. The teacher-participant group also found that often the interviews with the

administration were cancelled or cut short, and there were inconsistent efforts from the administration regarding pre- and post- classroom observations. Additionally, Audet (2005) determined that teachers would like to have more release time in their schedule to meet with colleagues or administrators to work on their PLD goals. The role of the administrator can be a facilitator of collaboration and value distributed leadership in maximizing a staff's efforts. The administrators, on the other hand, found that there was not enough time in their schedules to effectively follow through to help teachers with their PLD goals.

Fullan (2016) offered some solutions to the tension between teachers and administrators. Fullan suggested that administrators can develop professional capital through social, human, and decisional capital. Human capital is the relationships and interactions between professionals. Social capital is the sense that teachers must be a part of a greater and potentially more collaborative community. Decisional capital is deciding how to use the efforts of human and social capital to accomplish the goals of the school. Administrators who spend a greater part of their energy supporting teachers one-on-one do not have enough time to support anyone effectively. Also, these administrators are often so focused on human capital that social capital and student achievement go to the wayside. Fullan is not suggesting that administrators forget about human capital and individual classroom instruction, but rather creating a culture of continuous learning. If a school focuses on continual learning and development, then the social capital will increase by drawing on the strengths of the human capital within a teaching staff. The role of the administrator is to make good and deliberate decisions to increase the decisional capital by drawing on the strength of human and social capital. As a result, creating a positive environment to maximize social capital while creating

challenging instructional goals for the school to tackle is on the shoulders of the administrator. Teachers can align their PGPs with the goals to that of the administration and use the expertise of the other teachers within the building to achieve their goals.

Sullivan (2010) determined that when the school culture valued PLD, the teachers were more likely to have a positive attitude towards PGPs. When teachers get along on a social, emotional, and intellectual level, there is a greater chance that teachers achieve PGP goals through PLD (Audet, 2005).

Action Research

The key aspect of this study is identifying the effects of action research on PLD. Lewin (1946) was one of the first scholars to define and utilize the action research process. According to Lewin (1946), action research involves comparing the cause and effect of various social actions. He recognized that research, as conducted in other fields, such as medicine, is not like the social sciences because a specific diagnosis does not always exist. Therefore, to legitimize the research, social scientists need solid methodologies to produce better social science research. Rather than "hoping" an action works, Corey (1954) believed that action research would shift the language to "beginning to know." The best individuals to initiate action are those directly invested in education (Hopkins, 1993). To achieve this investment, Lewin (1946) argued that action research requires both laboratory and field experiments, a range of fact-finding methods, and a solid process.

Lewin (1946) stated that action research includes a three-step process: planning, executing, and fact-finding. The planning process identifies ways to reach the desired goal and initial action to begin the process. Because action research is a process that includes people and different contexts, the plan is often

malleable and differs from the original process. In this study, the teachers' PGP will drive the goals of the action research plans. After planning, the researcher executes the plan and then evaluates the plan by analyzing the data. After the analysis, the action research process is modified based on the results, and the cycle begins over again (Lewin, 1946).

Action research definitions. Many researchers and scholars have defined action research. Hopkins (1993) and McLean (1995) identify action research as improving practice. Bassey (1999) defined action research as a process that "uses systematic and critical inquiry" (p. 41) through the evaluation of a system before and after a change was implemented. McNiff, Lomax, and Whitehead (1996) have the most thorough definition of action research, they state:

...there must be praxis rather than practice. Praxis is an informed, committed action that gives rise to knowledge rather than just successful action it is informed because other peoples' views are taken into account. It is committed and intentional in terms of values that have been examined and can be argued. It leads to knowledge from and about educational practice. (pp. 7-8)

McNiff et al. (1996) discuss action research as a process that is informed, committed, and reflexive. For action research to be generalizable, Corey (1953) argued that action research must generate educational knowledge rather than for staff development, and there must be a strong emphasis on the *action* (Corey, 1957). Teachers should not only grow individually, but they should also contribute meaningful knowledge that will influence other classrooms and teachers. "Rather than an expectation that each teacher would move a significant distance along her learning continuum, all teachers were expected to produce outcomes which would

move the general field forward" (Johnston & Proudford, 1994, p. 11). Action research links to practice and theory (Noffke, 1997; van Manen, 1990b). Noffke (1997) argues that action research "bridges the traditional theory-practice, knowledge-action gap" (p. 306). Although Somekh (1995) and Zeichner (1993) identify that action research does not materialize into generalizable results that impact the field of education.

The dimensions of action research. Noffke (1997) identified that action research has three different dimensions: personal, professional, and political.

Understanding the context and complex content and processes of the work of various members, as well as the orientation they took, is central to understanding the particular constructions of their professional, personal, and political dimensions of action research in current works (Noffke, 1997, p. 312).

Often the decisions educators base their action research goals and decisions on identity and experience (Griffiths & Davies, 1993). Noffke (1997) continues that teachers also choose action research to enhance knowledge, gain a better understanding of the practice, or increase job satisfaction. Through the action research process, some teachers gain a better understanding of personal and collective values; however, self-reflection, although important, is insufficient in the action research arena. Linking action research back to Lewin's (1946) argument that action research should address social issues, the personal dimension in action research can be biased (Dolby, 1995; Noffke, 1991). Dolby (1995) and Noffke (1991) argue that teachers have their values and experience, are in a position of power, and are often not underprivileged. Teachers' positions and biases may prevent teachers from choosing action research issues that address or solve social

issues within the communities they teach. Teachers also have a responsibility to carry out action research professionally; therefore, the claims they are making about their practice must be legitimate. Furthermore, teachers have a professional responsibility to share their findings to support colleagues and grow the professional body of work (Noffke, 1997).

The final dimension is the political dimension. The political dimension highlights the importance that action research must respond to social issues (Lewin, 1946; Noffke, 1997). Bogdan and Biklin (1992) state the process of action research is "citizens attempting to influence the political process through collecting info" (p. 2). When teachers engage in action research, they tend to have more power over their work (Patterson, Santa, Short, & Smith, 1993). Fals-Borda and Rahman (1991) suggest this occurs because action and research lend itself to knowledge and power. Noffke (1997) underlines the importance of action being the most important influence on social issues and that answering to political agendas is insufficient.

The assumptions of action research. Van Manen (1990a) identifies that often action research "lacks substance" (p. 152) and is threatened by five assumptions: (a) the democracy assumption, (b) the external knowledge assumption, (c) the reflection/action assumption, (d) the change assumption, and (e) the teacher-as-researcher assumption. The *democracy assumption* is when the teacher views their relationship with the researcher as democratic because the teacher believes that the researcher has more knowledge and experience. Van Manen (1990b) argues that the relationship between the teacher and the researcher should be more symmetrical, especially when exploring and strengthening pedagogy. Rather than the relationship being democratic, the relationship should

be “agogical” - “learning from and with someone who can deepen my action-sensitive understanding” (van Manen, 1990a, p. 153).

The *external knowledge assumption* occurs when the education system adopts theory from an external source and applies it directly rather than identifying how theory and practice can coexist. Van Manen (1990a) identifies that “in practical situations, theory always arrives late, too late to inform practice technically or instrumentally, then in the daily practice of living, we are forever at a loss for theory” (p. 154). Quite often, a theory is created through reflection after the action has happened (Schleiermacher, 1964). The *reflective or action assumption* identifies that reflection is not measurable; therefore, communicating improvement cannot happen. Van Manen (1990a) proposes that teachers adopt the ideas of “pedagogical thoughtfulness and pedagogical tact” (p. 154). This notion encourages teachers to make decisions that are thoughtful and have a sensitivity to the pedagogical actions they choose.

The *change assumption* is when teachers expect a change to occur in the action research process; however, there is also a need to reflect on making better decisions in the future actively. This point bleeds into the next assumption, the *teacher-as-research assumption*. Van Manen (1990b) suggests that there are questions that are asked within action research that do not have answers. Through the action research process, teachers are consistently evaluating and monitoring the process to identify limitations and strengths (Mertler, 2016). Van Manen (1990a) concludes his reflection about action research with the following question:

Certain qualities are probably essential to good pedagogy: a sense of vocation, a love or caring for children, a deep sense of responsibility, a thoughtful maturity, a tactful sensitivity towards the child’s subjectivity, an

interpretive intelligence, a pedagogical understanding of the child's needs, an improvisational resoluteness in dealing with young people, a passion for knowing and learning the mysteries of the world, a moral fibre for standing up for something, a certain worldliness, a sense of active hope in the face of prevailing crises, and not least, a basic dose of humour and vitality. This is a tall order for any human being. Yet, underlying this suggestion is the crucial question: Does a person who lacks any of the just cited qualities possess the pedagogical fitness required for educating young people? How can action research concern itself with sponsoring the pedagogical fitness? (pp. 156-157)

In this study, educators are required to engage in a ten-month long process that will challenge current assumptions and create opportunities for reflection. Considering the amount of time and effort required by the educators, it is necessary to support this process with time and resources.

Action research in education. According to Burns (2010), action research has many advantages in education. Action research helps educators improve their practice through constant evaluation and reflection of their practice, promotes collaboration, provides opportunities to be driven by evidence, and it empowers teachers because they owned the process (Burns, 2010). The Alberta Teachers' Association (2019) reveals that action research increases educators' PLD. For example, "action research can (a) focus on the teaching and learning process, (b) be used to solve problems or institute change, (c) be used to document teacher professional growth, (d) create communities of action, (e) help teachers become responsible change agents of school improvement, and (f) create a culture and process of continual educational change" (Alberta Teachers' Association, 2019, p.

3). Action research in education can either be an individual or collaborative effort and the action research data gathered can be either qualitative or quantitative (Alberta Teachers Association, 2019).

Action research is a large undertaking, and it is important to understand how to implement it in education. The Alberta Teachers' Association (2019) presented a detailed 11-step action research process, outlined in Table 3, that was developed by David Townsend. Townsend used this action research process with teachers in Alberta.

Table 3

Eleven Step Action Research Process

Steps	Characteristics of Each Step
Define the Focus or Problem	<ul style="list-style-type: none"> - Ask the right questions. - Reflection begins.
Collect Information	<ul style="list-style-type: none"> - Read the literature, consult colleagues, talk to experts. - Reflection continues.
Make Sense of the Information	<ul style="list-style-type: none"> - What is relevant? - What is doable? - What can be modified and adapted to suit the circumstances?
Share the Information	<ul style="list-style-type: none"> - Share your preliminary conclusions with your team. - Be prepared to deal with conflicting information.
Plan Action	<ul style="list-style-type: none"> - Share individual intentions with members of the team. - Build personal commitment and group support. - Develop a plan of action.
Take Action	<ul style="list-style-type: none"> - Start putting your plan into effect. - Begin to think about what is happening and why. - Reflection in action and on action will make your efforts more purposeful.
Collect information	<ul style="list-style-type: none"> - Let your students see you as a learner. - Gather data to answer your research question and document carefully. - Meet regularly to share you experience and refocus as necessary.
Analyze	<ul style="list-style-type: none"> - Use the collective knowledge of your group to make sense of what's happening and why. - Compare the pre- and post-intervention data.
Assess your Achievements	<ul style="list-style-type: none"> - Think about evidence-based practice. - Ensure that your conclusions are supported by the data collected.
Publish	<ul style="list-style-type: none"> - Commit yourself to making conclusions about the impact of your efforts. - Share these conclusions with different groups. - Work together to disseminate your report beyond your group and beyond the school.
Future action	<ul style="list-style-type: none"> - Celebrate. Relax. Reflect. - Take time to consolidate your learning and your gains before you start something new.

Note: The information in this table is from *Engaging in action research: A practical guide for Alberta teachers and school leaders* by Alberta Teachers' Association (2019). Retrieved from <https://www.teachers.ab.ca/SiteCollectionDocuments/ATA/Publications/Research/COOR-101-25%20Action%20Research%20Guide-PDF%202019%2012-WORKBOOK.pdf>

The 11-step action research process outlined in Table 3, aligns nicely with Lewin's (1946) action research model. The one noticeable difference between the two models is that the 11-step process includes the *publish* stage. Both applying and presenting the findings are part of the action research process because it informs both future practice and guides others work. The action research findings have little meaning if the results are not reported or presented. The presentation of the findings must include the results, the conditions of the study, discoveries through the process, and how the findings inform future work (Alberta Teachers' Association, 2019).

Understanding how action research has impacted educators and students across a variety of contexts is vital to this study. Breakspear, Peterson, and Khair (2017) have developed an organization for schools to become agile by increasing collaboration and collective efficacy. Within their framework, they have proposed an action research framework called *learning sprints*. Learning sprints – as defined by action research – is a system for educators to design, implement, and evaluate new teaching or learning strategies. The learning sprints methodology, unlike traditional action research, involves a formulaic cycle for teachers to follow with a specific 1 to 4-week timeline. After each 1 to 4-week cycle, the plan is improved and implemented again until the desired outcomes are achieved.

At Quinnipiac University, a qualitative study in a Computer Information Systems course on web development was conducted. The study included 37 students and four learning sprints over one semester. The study identified the advantages and disadvantages of learning sprints. The advantages of learning sprints were that students were able to apply the theory into practice faster, and students could identify more quickly if they did not understand a concept. The

disadvantages, on the other hand, of learning sprints were that the process took longer than project-based learning and students felt as though it was easier to fall behind in class. Despite the disadvantages, when surveyed, 85% of students agreed or strongly agreed that they wished more courses used learning sprints. Furthermore, this study revealed that learning style does not affect a students' preference for learning sprints over traditional project-based learning. The instructor – who was also the researcher – identified challenges of learning sprints. Learning sprints require more planning on the teacher's behalf, and there is an increase in one-on-one student support required for learning sprints to be successful (Lang, 2017).

Another form of action research that dates to 1870 is lesson study. Generally, lesson study is popular in Japan and the process of teachers designing, implementing and evaluating a course collaboratively to improve instruction (Lee, 2008). In the 2017-2018 school year, a lower socio-economic elementary school in Turkey used lesson study. The study included two teachers who had 13 and 17 years of experience, respectively, and focused on increasing student achievement in literacy. The teachers were committed to planning lessons jointly, applying and observing the lessons, and finally, there was an evaluation and reflection of the lesson with the researcher. The study was qualitative, and the researchers collected data via observations and interviews.

Furthermore, the teachers were also required to complete outside research on their topic and present it to their staff. Overall, the lesson study was very successful in this context. The teachers became more responsive to their students' needs, collaboration amongst themselves and the whole staff had increased, and student achievement increased. The study began with four teachers interested in

lesson study; however, only two teachers followed through with the study. Workload and personal issues resulted in the other two teachers not following through with the study (Özdemir, 2019). Teacher workload has been a theme amongst the PLD and action research literature and is a strong consideration for this study.

Action research is also prevalent at the pre-service teaching level. In an Australian High School, four third-year pre-services teachers from a New South Wales university completed action research projects over 10 weeks. In the New South Wales University, students complete 10-week practicums in their second, third, and fourth years of study. A qualitative, case-study analyzed the students' reflections of their action research projects. The study aimed to determine (a) How does action research support pre-service teachers' ability to think critically about their professional practice? (b) How does reflection on action research provide opportunities for authentic professional development? and (b) What can teacher-educators learn from the experiences of the pre-service teachers in a way that supports their professional development? (Kennedy et al., 2018). The pre-service teachers' action research projects followed a step-by-step process. The steps in order were: "(1) Identify a general theme/aim/purpose, (2) Generate a few more specific focus questions, (3) Conduct a broad secondary research, (4) Identify the primary data and tools needed, (5) Collect primary and more secondary information, (6) Collect and analyze the data, (7) Propose appropriate individual and group action, and (8) Communicate the findings effectively" (p. 44).

From the reflections of the four pre-service teachers, Kennedy et al. (2018) were able to determine the benefits and areas of improvement for future action research projects. One of the prominent themes in the reflections was that teachers

were actively working on their professional development while teaching. Although it was challenging to determine the effects of the action research projects, the pre-service teachers had an opportunity to identify and solve an issue within their teaching context (Kennedy et al., 2018). The researchers of this study understood the importance of guiding the pre-service teachers throughout the process and did so through Saturday and online sessions. As a result, the participants found the time commitment and process overwhelming. Moving forward, the researchers determined that they need to improve the following: (a) Provide training on how to research and write about the literature of their topic, (b) Allow pre-service teachers to create research questions on previous experience to make the process meaningful, (c) Support teachers on how to write research studies, and (d) Create time for students to meet back on campus to receive feedback and support where necessary (Kennedy et al., 2018). Overall, “[t]here is a need, therefore, to develop a connection between university-based teaching of research skills and students’ professional experiences” (Kennedy et al., 2018, p. 54). The New South Wales university decided to use third and not fourth-year students for their study because fourth-year students, unlike third-year students, had a full-teaching load. Kennedy et al. (2018) concluded that the capacity to complete the action research process while managing a teaching load is demanding and requires teachers to have both “capacity and confidence” (p. 54). Considering teacher workload is important to this study. Ensuring that educators have allocated time for their action research will increase the chance of educators having positive experiences and increasing student achievement. Relate back to your purpose statement here.

Effects of action research on students. The main goal of both action research and PLD is improving student learning and achievement; therefore, it is

essential to understand how action research has affected student achievement and learning experiences for students. In the Phitsanulok province in Thailand, an action research study, including 31 Grade 10 students, was conducted. The focus of the study was to shift from more traditional teaching methods to teaching methods that encouraged creative thinking. Creative thinking was the focus because it “is a basis for construction of innovations for developing countries” (Kumdang, Kijkuakul, & Chaiyasith, 2018, p. 9). To achieve this goal, the teacher implemented three action research cycles over three weeks. Within each week, the students' task was to solve an environmental issue by creating an artifact. The qualitative study collected data via informal interviews and students' learning journals. Over each week, the student work was analyzed based on creative thinking within six sub-categories: (a) originality, (b) fluency, (c) flexibility, (d) elaboration, (e) curiosity, and (f) imagination. This study concluded that all students improved within each sub-category of creative thinking. Overall, curiosity improved the most for the students out of the six sub-categories (Kumdang et al., 2018).

A different approach to action research – as mentioned previously – is *lesson study*. Lesson study was used by a low socioeconomic high school that was flagged by the Turkish Ministry of Education as having an overall low-grade point average. The participants of this study were 5 teachers and their 24 English language learners in Grade 9. Rather than using the traditional three-step process (plan, implement, analyze) of lesson study, this study used a robust five-step study to increase students' English language proficiency: (a) teachers develop a lesson plan collaboratively, (b) teachers teach the lesson, (c) the teachers modify the lesson based on reflections and observations, (d) the lesson is taught again, and (e)

the teachers discuss and reflect upon the new lesson taught (Halvorsen & Lund, 2013; Nami, Marandi, & Sotoudehnama, 2016). After going through the five-step lesson study process, the study used a pre-test and post-test to measure English achievement. According to the data, the averages on the assessments increased from 9.46 to 15.08, and the results were statistically significant ($t = -5,022$; $p < 0.05$) (Kıncal, Ozan, & İleritürk, 2019).

An Ethiopian study also targeted increasing literacy through action research. The focus of the study was “to show teachers how they can develop/modify early reading activities/tasks using resources available in school surroundings and to train teachers in teaching early reading skills that mixed both a synthetic or phonic and analytic or global approaches in the specific contexts of the schools” (Anshu, 2019, p. 34). This study was important to Ethiopia because the Transitional Government of Ethiopia declared that Grade 1 to Grade 8 schools could teach students in their mother tongue in June, 1991. As a result, the language proficiency of students was weak. This action research study included 13,079 students and 65 teachers in 338 schools. The focus was to improve educators teaching knowledge around literacy pedagogy. The teachers had time to brainstorm, reflect, work collaboratively, and present throughout the action research process. Table 4 outlines the action research process of this study.

Table 4

The Action Research Process of an Ethiopian Study Focused on Increasing Literacy

Action Research Steps	Description of Each Step
1. Reviewing existing textbooks and preparing training module	<ul style="list-style-type: none"> - Teachers within Ethiopia are strictly mandated to follow the prescribed textbooks - The training manual was developed to fill in any gaps within the textbooks
2. Preparing the training module	<ul style="list-style-type: none"> - The training model included tasks to increase reading and reading comprehension - The tasks were developed based on Grade 1 to Grade 4 syllabi and integrated writing skills
3. Initial training provided	<ul style="list-style-type: none"> - All 65 teachers received training (47 teachers, 12 supervisors and coordinators, and six directors)
4. Visiting sample schools	<ul style="list-style-type: none"> - Three months after training the schools were visited by the trainers, supervisors, and coordinators to determine if there were any gaps in the initial training
5. Assessing impacts of the initial training	<ul style="list-style-type: none"> - Five months after the school field visits, the researchers analyzed the results of the first assessment
6. Revising the training module and conducting refresher training	<ul style="list-style-type: none"> - The training module was revised based on school visits and feedback - The refresher training happened seven months after the first assessment
7. Assessing overall impacts of the intervention strategy	<ul style="list-style-type: none"> - Seven months after the refresher training another assessment was administered to identify the impact on Grade 2 and Grade 3 students reading skills

Note: The information in this table is from *Impacts of Action Research-oriented Upgrading Training on Initial and Early Reading Comprehension Performances of Students* by Anshu, A. A. (2019). Retrieved from <https://files.eric.ed.gov/fulltext/EJ1212389.pdf>

The process of Anshu's (2019) study was very thorough and well-thought-out, and this study increased student achievement. The initial of assessment of the students revealed that 63% of Grade 2 students and 49% of Grade 3 students could

not identify letters. After the refresher training the final assessment in the study revealed that only 1% of Grade 2 students and 7% of Grade 3 students could not identify their letters. Additionally, the initial of assessment of the students revealed that 47% of Grade 2 students and 47% of Grade 3 students scored zero in reading comprehension. After the refresher training, the final assessment in the study revealed that 30% of Grade 2 students and 12% of Grade 3 students scored zero in reading comprehension.

The results of this study showed that the effects of the action-research training provided to teachers had a positive impact on Grade 2 and Grade 3 literacy. By expanding teacher training to more materials than the textbook and creating a responsive model based on school visits and assessments, the students were able to increase their letter identification and reading comprehension substantially. Understanding how educators can increase student achievement is paramount when rolling out an action research model.

Summary

Chapter 2 explored the literature on professional learning and development (PLD), action research, and professional growth plans (PGP). As identified by Campbell et al. (2016), PLD must have quality content, which includes PLD that is evidence-informed, includes subject-specific and pedagogical content knowledge, focuses on student outcomes, and has a balance between teacher voice and system coherence. PLD must also be implemented and designed such that learning is active, collaborative, and job-embedded. Finally, PLD must also be supported and sustainable. PLD is both supported and sustained by strong leadership, resources, and time. Within each of the 10 categories of PLD identified by Campbell et al. (2016), empirical evidence supported each category. The category with the most

empirical evidence was “supportive and engaged leadership.” The leadership in the PLD model is key because they play a strong role in developing trust, mutual relationships, and school culture. However, the focus of *all* PLD is student learning and achievement.

Within the literature, a potential PLD model identified was action research. Lewin (1946) developed action research, and his process is for researchers to create a plan, execute their plan, and then evaluate their plan. Action research is responsive to student and teacher needs and is data-informed. Action research – similarly to PLD research – is highly supported by empirical evidence. Overall, the studies showed that student achievement increased when teachers engaged in action research; however, the teachers’ feedback and process through action research was not always seamless. Action research requires a lot of work and time on the teachers’ behalf because it expects teachers to challenge their preexisting assumptions and practice (Dadds, 2003).

In Alberta, educators must set their goals and intentions for their PLD in their PGP. While we know key components of effective PLD, determining an effective and universal PD model is still unknown. This study sought to understand whether action research is an effective PLD model where educators can achieve their individual goals. Ultimately, an educator’s action research project can and should be embedded in their PGP.

Chapter 3: Methods

This chapter discusses the methodology used to investigate the extent to which educators perceive action research as having the capacity to facilitate engagement in TQS Competency 2, or engagement in “career-long professional learning and ongoing critical reflection to improve teaching and learning” (Alberta Education, 2018c, p. 4). This chapter includes specifics regarding the research questions and rationale for choosing a mixed-methods design for this study. This chapter will also outline the setting, participants, instruments, ethical considerations, and role of the researcher. Additionally, this chapter will describe the action research process throughout the school year and how the data was collected and analyzed.

Purpose Statement and Research Questions

The purpose of this mixed-method study was to investigate the extent to which educators perceive action research as having the capacity to facilitate engagement in TQS Competency 2, or engagement in “career-long professional learning and ongoing critical reflection to improve teaching and learning” (Alberta Education, 2018c, p. 4). More specifically, this study sought to understand teacher perceptions of the process of planning, executing, and evaluating a research-based process within their practice. This study is guided by the following research questions that investigate how specific indicators of TQS Competency 2 meets the professional learning needs of teachers:

- (a) To what extent does participating in action research facilitate teachers collaborating with other teachers to build personal and collective professional capacities and expertise?

- (b) To what extent does participating in action research facilitate teachers actively seeking out feedback to enhance teaching practice?
- (c) To what extent does participating in action research facilitate teachers building capacity to support student success in inclusive, welcoming, caring, respectful and safe learning environments?
- (d) To what extent does participating in action research facilitate action seeking, critically reviewing and applying educational research to improve practice?
- (e) To what extent does participating in action research facilitate enhancing understanding of First Nations, Métis and Inuit worldviews, cultural beliefs, languages and values?
- (f) To what extent does participating in action research facilitate maintaining an awareness of emerging technologies to enhance knowledge and inform practice? (Alberta Education, 2018c, p. 4)

Rationale for the Methodology

The rationale for this methodology was grounded in the intent to capture the perspective of educators' experiences during the action research process, which lends itself well to a mixed-method single-case study. The scope of a case study "investigates a contemporary phenomenon in depth and within its real-world context, especially when the boundaries between the phenomenon and context may not be clearly evident" (Yin, 2018, p. 15). In this study, the "case" included educators who still had the normal requirements of their work while engaging in the action research process.

According to Yin (2018), there are three features within the methodology of relevant case studies. First, a case study "copes with the technically distinctive

situation in which there will be many more variables of interest than data points” (Yin, 2018, p. 15). The experiences of teachers and how they responded to the action research model could not be predicted, and perceptions of the teachers varied. Also, the needs and subject areas taught varied from teacher to teacher. The educators had the professional freedom to choose their action research project and how they wanted to conduct the project. Secondly, a case study “benefits from the prior development of theoretical propositions to guide design, data collection, and analysis” (Yin, 2018, p. 15). Much of the decision-making regarding the action research process was made by the researcher, and it was grounded in adult learning theory. The purpose statement and research questions also guided the data collection and analysis process. Finally, a case study also “relies on multiple sources of evidence, with data needing to converge in a triangulated fashion” (Yin, 2018, p. 15). Achieving triangulation occurred by collecting data in three different ways: observations, surveys, and interviews. As it is also mixed-methods, the data will include both quantitative and qualitative data to ensure that this study captures an understanding of the context and phenomenon (Yin, 2018).

Setting

The research was conducted at a publicly-funded urban, Catholic high school in Alberta. The school had 1,154 students in Grades 10, 11, and 12. During the 2018-2019 school year, the school had 80 staff members, which included four administrators, 56 teachers, four counsellors, 11 educational assistants, and five administrative staff. All staff members were full-time except for two counsellors and one teacher. Seven of the full-time teachers had release time in their schedules to provide support in other teachers’ classrooms. These supports included French immersion, faith, technology, inclusion, and literacy.

The programs offered at the high school included all mandatory course graduation course requirements of a Catholic high school as well as Knowledge and Employability, Senior Foundations, French Immersion, and Sports Academy programs. Additionally, there were a variety of alternative learning opportunities through dual credit courses, Green Certificate programs, Registered Apprenticeship Programs, and other relationships with outside agencies and postsecondary institutions. Considering the vast number of courses offered at the high school, it is probable that the professional development needs of the staff were widespread and were, therefore, a consideration of this study.

Overall, the students at the school performed well. In Alberta, the highest course level a student can take in high school is a 30-level course. The students enrolled in these courses are typically either Grade 12 students; however, sometimes Grade 11 students complete 30-level courses too. For example, the highest social studies course is Social Studies 30-1 or Social Studies 30-2, where Social Studies 30-1 is more advanced than Social Studies 30-2. Students who take a 30-level course are required to write a diploma exam worth 30% of their final grade. Table 5 outlines the percentage of students who earn an acceptable or excellent mark in class and on the diploma by subject for the first semester of the 2018-2019 school year. An excellence mark, as outlined by Alberta Education, is a mark between 80% and 100% and an acceptable score is a mark between 50% and 79%. The courses in Table 5 are not comprehensive of the graduating population because not all courses outlined are mandatory for graduation, and not all students graduate with a high school diploma. The most recent data for the three-year high school shows a completion rate of 89% of students. The graduation rate of this school is excellent.

Table 5

School Acceptable and Excellence School Awarded Marks for Semester 1 in 2018-2019 School Year

Course	School Acceptable	Diploma Acceptable	School Excellence	Diploma Excellence
English Language Arts 30-1	99%	85%	31%	10%
English Language Arts 30-2	97%	93%	11%	10%
French Language Arts 30-1	100%	100%	32%	11%
Mathématiques 30-1	100%	88%	39%	21%
Mathematics 30-1	98%	81%	46%	29%
Mathematics 30-2	98%	80%	25%	12%
Social Studies 30-1	99%	83%	48%	8%
Social Studies 30-2	100%	80%	26%	9%
Biology 30	98%	84%	54%	33%
Chemistry 30	98%	78%	49%	31%
Physics 30	99%	91%	59%	41%
Science 30	99%	86%	21%	27%

Note: The school mark is the mark awarded by the teachers in the school and the diploma mark is the mark that students earn on the final 30-level exam.

Participants

The participants in this study were educators who engaged in the action research process for an entire school year. Educators in this study represented administrators, teachers, and counsellors who had been at the school for the duration of the whole school year. In Alberta, educators hold at minimum a Bachelor of Education degree and hold a valid Alberta teaching certificate. Educators hired after the beginning of the school year were not included in this study because their process would be shortened and, therefore, would have been limited. As there were three types of data collected, there were participants in three different groups based on these collected data: observation, survey, and interview.

Observation participants. Considering that the educators must have been at the school for the entire school year and engaged in action research, this study used criterion sampling for the observations. Criterion sampling is the “review and study of all cases that meet some predetermined criterion of importance” (Patton, 2002, p. 238). Fifty-nine educators were at the school for the whole year and had the opportunity to engage in the research project. Of the 59 educators, 38 presented their findings to the staff on June 21, 2019, and there were 25 presentations in total. There were fewer presentations in comparison to presenters because some teachers worked collaboratively on their action research projects. Of the 21 educators who did not present their findings, it is unknown whether they engaged in the action research process or not. Table 6 represents the demographics of the educators observed on June 21, 2019. For example, of all the people that presented, 24 were female, which represents 63% of the total presenters; of the total educators in the school, 30 are female, which represents 51% of the total educators.

Table 6

Demographics of Observation Participants in Comparison to Total Educators in the School

Demographic	Observation Participants (% of Total)	Total Educators in School (% of Total)
Gender		
Female	24 (63%)	30 (51%)
Male	14 (37%)	29 (49%)
Total	38 (100%)	59 (100%)
Subject Taught/Role		
Mathematics	3 (8%)	5 (8%)
Social Studies	6 (16%)	6 (10%)
Sciences	6 (16%)	11 (19%)
English	3 (8%)	6 (10%)
Languages	3 (8%)	4 (7%)
CTS	4 (11%)	7 (12%)
Phys. Ed.	1 (3%)	5 (8%)
Foundations/K&E	4 (11%)	4 (7%)
Fine Arts	3 (8%)	3 (5%)
Counsellor	4 (11%)	4 (7%)
Administrator	1 (3%)	4 (7%)
Total	38 (100%)	59 (100%)

Note. K&E is Knowledge and Employability, and CTS is Career and Technology Studies

Survey participants. Regardless of whether the staff presented their findings or not, all educators at the school had the opportunity to complete the survey. Of the 59 educators, 10% completed the survey via pen and paper initially, and 55% completed the survey online. In total, 38 educators (64%) completed the survey. The survey responses were anonymous, and it is unknown whether those that presented also completed the survey and vice versa. Considering that the survey information was anonymous, the only information available to the researcher was the demographic information provided in the survey. Table 7 is a representation of the demographic information from the survey. As depicted in

Table 7, the data collected from the survey are a good representation of the staff, as shown by the range of teaching experience and education.

Table 7

Demographics of Survey Participants

Demographic	Survey Participants (% of Total)
Years of Teaching Experience	
0-5	6 (16%)
6-10	8 (21%)
11-20	8 (21%)
>20	11 (29%)
No Response	5 (13%)
Total	38 (100%)
Highest Level of Education	
Bachelors	20 (53%)
Masters	13 (34%)
No Response	5 (13%)
Total	38 (100%)

Interview participants. In case studies, the recommendation is to utilize interviews until achieving data saturation. Data saturation “entails bringing new participants continually into the study until the data set is complete, as indicated by data replication or redundancy. In other words, data saturation occurs when the researcher gathers data to the point of diminishing returns, when nothing new is being added” (Bowen, 2008, p. 140). Considering data saturation, quantifying the number of enough interviews for a case study is challenging (Marshall, Poddar, Cardon, & Fontenot, 2013). Yin (2009) suggests that a minimum of six interviews in a qualitative case study is enough.

At the end of the survey, the participants had the option to volunteer to engage in a phone interview with an accredited volunteer. Of the 38 survey respondents, 7 agreed to complete an interview; however, 1 of the respondents did

not follow through with the phone interview. In total, there were six phone interviews, and all the interviewees presented their action research project on June 21, 2019. The interviewees all taught different subjects, and there was a range of teaching experience from 4 to 31 years. The interview participants taught the following subjects: CTS, math, English, K&E, religion, math, and French Immersion. Two of the teachers interviewed had a master's degree, while the other four had a bachelor's degree. Overall, those interviewed were a good representation of the whole sample; however, there were two limitations. The first limitation of the interview participants is that it did not include an administrator or counsellor. The other limitation is that the interview set only included one male.

Context

It is essential to understand the context in which this study occurs, which was due to a specific set of circumstances. This study collected data at a publicly-funded, urban high school in Alberta. Two key aspects existed that made this context unique.

High school redesign. First, the high school is part of an Alberta Government initiative called High School Redesign. "High School Redesign is a province-wide initiative focused on three outcomes: engaged students, high levels of achievement, and quality teaching. It's about redesigning high school to be more student-centred and responsive" (Alberta Government, 2019, para. 1). The initiative has nine principles for schools to follow. The Alberta Government (2019) suggests that schools choose one to two initiatives to tackle; however, many of the principles overlap and schools will likely touch on more than two principles in a school year. The nine principles include: (a) mastery learning, (b) rigorous and relevant curriculum, (c) personalization, (d) flexible learning environments, (e)

educator roles and professional development, (f) meaningful relationships, (g) home and community involvement, (h) assessment, and (i) welcoming, caring, respectful, and safe learning environment (Alberta Government, 2019). Of the nine principles of High School Redesign, the action research model fell within the categories of “flexible learning environments” and “educator roles and professional development” (Alberta Government, 2019). Table 8 outlines critical information about these two principles.

Table 8

Information about the Two High School Redesign Principles that Apply to this Study

High School Redesign Principles	Information about Principles as Outlined by the Alberta Government (2019)
Flexible Learning Environments	(a) learning is student-centred (b) students are responsible and accountable for their learning (c) students have multiple entry and exit points into the curriculum (d) new technologies facilitate online learning and one-on-one time with a teacher (e) teachers are empowered to decide how best to structure time to teach students (f) students have more control over the where, when and what they learn: they are more engaged, and by becoming more engaged, they are transforming their experiences into their education
Educator Roles and Professional Development	(a) creating structures to better support new types of learning relationships (b) collaboration and shared decision making (c) administrators participate in the learning community and expand their leadership roles (d) teachers work together to improve the design and delivery of the curriculum.

PLD time. Another critical component to the context of this study was allocating PLD time to for the educators to work on their action research projects. In the school division, PLD time was available in a multitude of ways. Throughout the school year, there were eight full-day professional development days. Four of the professional development days were district-based, while the remaining four

days were school-based. Additionally, every Monday, school was dismissed early to provide educators an opportunity to engage in PLD for an hour and fifteen minutes. Within the offered professional development time, there were opportunities for the participants of this study to utilize the PLD time for their action research projects.

District-based professional learning days. As mentioned, four of the professional learning days were division professional development days: one day on Truth and Reconciliation for Indigenous, one focused on faith, and the other two days were formatted as an EdCamp. The EdCamp professional learning model allows for educators and educational stakeholders both in and out of the division to host sessions where they were either presenting information or creating a collaborative session about a specific topic or grade level. On April 12, 2019, a two-hour session was available to the participants of this study to work on their action research project. During this time, the participants could receive support from the researcher or the participants could contact the Alberta Teachers' Association library for resources.

School-based professional learning days. In addition to the four district-based professional development days, there were four school-based professional development days. This time was for schools to create or engage staff in professional learning and development that was responsive to the needs of the school, staff, and students of that community. Action research time was available on the school-based professional learning days, which proceeded as followed on these specific dates.

May 25, 2018. On this school-based professional learning day, the action research process was initially introduced to the staff. This process was introduced

as an opportunity for educators to engage in a topic or project of interest that is directly related to their practice. On the same professional development day, the staff read an article that outlined the roles and responsibilities of the teacher as a researcher. Finally, there was a discussion supported with examples as to how to approach this process and the benefits of both quantitative and qualitative research.

September 14, 2018. During the afternoon, educators had time to work on deciding the direction of their action research project. Although teachers might have had an idea of what they wanted to pursue before the school year began, it was important to revisit and refine their research interest after meeting their students and having their timetable finalized. Some teachers worked independently on their action research, while others decided to work collaboratively. Educators could have also used this time to work on their professional growth plans. Educators could have used their action research goal on their professional growth plan; however, it was not mandatory.

November 23, 2018. A document (Appendix A) outlining all the action research projects throughout the school was provided to the educators on the morning of the PD day. The document categorized each of the action research projects based on topics. There were two goals for this school-based professional learning day. First, the researcher gave a presentation on the difference between andragogy and pedagogy. Introducing andragogy was essential to the process of action research because it outlined that teachers were being respected as learners and had the autonomy and freedom to set their own goals and process. The second goal was to highlight the importance of working collaboratively on an action research project to leverage the knowledge and experience of colleagues. Educators were put into groups with teachers from different disciplines and subject

areas to increase collaboration. Educators then were tasked with sharing their action research project so far using the What? So What? Now What? Protocol (Appendix B, School Reform Initiative, 2012). The protocol intended to encourage a community of practice through generating ideas and sharing information.

February 1, 2019. Educators had a half-day to work on action research. At the half-way point of the action research process, educators were encouraged to complete an action research document (Appendix C) that outlined the following:

- Define your research questions,
- Identify available research on your topic,
- Write a reflection about action research so far,
- Identify what supports you require to be successful, and
- Identify how you can impact the field of education (think micro or macro).

The action research document was public to the school community with the intent of continuing a community of practice. All educators had the opportunity to engage and were encouraged throughout the school year; however, it was not made mandatory at the administration level.

Embedded professional development Mondays. Additionally, the entire division had embedded professional development time every Monday for an hour and ten minutes. During this time, it was the school's responsibility to plan activities based on school, division, or educators' goals for the school year. Of all the embedded professional learning Mondays, time was allocated for action research during eight of these times. It was the educator's discretion on how to utilize the time provided.

Presentation of action research findings. The final stage of the action research process was to present the educators' results from their projects.

Presenting to the staff was encouraged; however, not mandatory. Those who presented could request either a 5, 10, or 15 minute time-frame to present. The presentations took place in an auditorium in front of the staff. For those who were not at the school on June 21, they had the option to present in a smaller group on June 19. On June 19, five educators presented to a small group, and on June 21, there were 19 presentations to the staff. Table 9 represents a summary of the action research process during the 2018-2019 school year.

Table 9

Action Research Timeline, Hours, and Description for the 2018-2019 School Year

Date	Hours	Action Research Timeline
May 25, 2018	2 hours	Introduced educators to the action research process.
September 14, 2018	3 hours	Educators had time to work on an action research project and a professional growth plan.
September 17, 2018	1 hour 10 min.	Educators had time to work on their professional growth plan or action research project.
October 15, 2018	1 hour 10 min.	Educators had time to work on their professional growth plan or action research project.
November 23, 2018	3 hours	Educators were introduced to andragogy and worked collaboratively with other colleagues.
January 21, 2019	1 hour 10 min.	Embedded time to work on the action research project.
January 28, 2019	1 hour 10 min.	Embedded time to work on the action research project.
February 1, 2019	3 hours	Educators had time to complete an action research document. The document was shared with the staff.
March 11, 2019	1 hour 10 min.	Embedded time to work on the action research project.
April 12, 2019	1 hour 30 min.	Action research EdCamp session.
April 15, 2019	1 hour 10 min.	Embedded time to work on the action research project.
May 27, 2019	1 hour 10 minutes	Embedded time to work on the action research project.
June 21, 2019	3 hours	Educators voluntarily presented their action research findings from the 2018-2019 school year.
Total	23 hours 40 min.	

Data Collection

To accurately capture the complexities of this case study, this study gathered both qualitative and quantitative data. This study occurred across three key phases: observations, surveys, and interviews. The qualitative data were collected via three different sources to achieve triangulation. The data collected were intended to determine the extent to which educators perceive action research as valuable. The instruments used in this study aimed to identify the experiences, beliefs, opinions, and attitudes towards action research within the context of professional learning (Patton, 2002).

Observations. The first data collected for this research were observation notes of the action research project presentations. Yin (2018) outlines some strengths and weaknesses of observations. Observations capture the action as it is happening and understand the case within the context (Yin, 2018). The failings, on the other hand, are that observations are time-consuming, capture only pieces of the action with only one observer, which can skew participant responses because they are observed, and there is a potential cost associated if hiring the observer (Yin, 2018). Another consideration of observations is that “human perception is highly subjective” (Patton, 2002, p. 260). As a result, Patton (2002) created a list of considerations for observers that includes (a) paying attention to details, (b) writing descriptively, (c) having discipline when recording, (d) separating trivial information from details, (e) validating and triangulating observations by using rigorous methods, and (f) reporting any observation bias. While conducting the observations, the researcher, who was also the observer, specifically sat in isolation to avoid any conversations or distractions from the presentations. In this study, the researcher also presented an action research project and was a colleague of the

fellow educators in this study; therefore, the researcher was a participant observer.

Patton (2002) defines a participant observer as someone who:

Shares as intimately as possible in the life and activities of the setting under study to develop an insider's view of what is happening, the emic perspective. This means that the participant not only sees what is happening but feels what it is like to be a part of the setting or program. (p. 268)

An observation template sheet was used for each presentation to ensure a consistent documentation process. Emerson, Fretz, and Shaw (1995) suggest considering the following list of questions in chronological order when initially collecting and analyzing the data:

1. What are people doing? What are they trying to accomplish?
2. How, exactly, do they do this? What specific means and/or strategies do they use?
3. How do members talk about, characterize, and understand what is going on? What assumptions are they making?
4. What do I see going on here? What did I learn from these notes?
5. Why did I include them? (p. 146)

These questions were included in the observation sheet template to not only ensure consistency but also to develop a robust picture of each action research process and project. The observation data were field notes. Field notes "are the researcher's personal and subjective responses to and interpretations of social action encountered" (Saldaña, 2016, p. 45). In this study, the field notes were the researcher's responses to how the educators perceive action research as having the capacity to facilitate engagement in TQS Competency 2. To avoid potential bias,

the questions outlined by Emerson, Fretz, and Shaw (1995) helped to focus the observations and bracket the researcher's bias.

The observations for this study occurred during the action research presentations on June 21, 2019. There were 25 observations in total. Some presenters presented alone, while others presented in a group because they worked on their action research collaboratively. The observation sheet template is in Appendix D. Each presentation observation document was then sent to the respective presenter within a week for member-checking. The presenters then had the opportunity to provide feedback or add any notes to ensure that the observation accurately represented what the presenter intended.

Surveys. Directly after the presentations on June 21, 2019, the participants had the option to complete an anonymous pen and paper survey. The participants were instructed to complete the survey and then to place the survey in the researcher's staff mailbox once complete. Compensation was not provided to the survey participants; however, lunch was provided by the researcher after the presentations. Unfortunately, the initial response rate of the pen and paper survey was only 10%. The survey was also developed electronically using the web-based program Qualtrics and emailed to the participants to increase the response rate. Being persistent with participants to complete surveys is important to increase response rates (Ruel, Wagner, & Gillespie, 2016). The final survey response rate was 66%.

According to Ruel, Wagner, and Gillespie (2016), "well-designed surveys can be extremely efficient and very effective in generalizability" (p. 2). The survey was composed of quantitative, qualitative, and demographic questions. Appendix E outlines the first 12 questions of the survey. The TQS Competency 2 indicators

were used to develop the survey questions, as outlined in Table 10 and Table 11. The rating scale items are in Table 10, and the open-ended questions are in Table 11. The survey questions were peer-reviewed by nine doctoral students to increase the validity and reliability of the instrument (Creswell, 2012). The participants had the following options for the rating scale items: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree.

Table 10

TQS Competency 2 Indicators and the Associated Rating Scale Items

TQS Competency 2 Indicators	Rating Scale Survey Questions
(a) Collaborating with other teachers to build personal and collective professional capacities and expertise	Participating in the action research process enhanced my collaboration with others.
(b) Actively seeking out feedback to enhance teaching practice	Participating in the action research process enhanced my teaching practice.
(c) Building capacity to support student success in inclusive, welcoming, caring, respectful and safe learning environments	Participating in the action research process increased your capacity to support student success in inclusive, welcoming, caring, respectful, and safe learning environments.
(d) Seeking, critically reviewing and applying educational research to improve practice	Participating in the action research process increased my capacity to seek, critically review, and apply educational research to improve my practice.
(e) Enhancing understanding of First Nations, Métis and Inuit worldviews, cultural beliefs, languages and values	Participating in the action research process increased my understanding of Indigenous worldviews, cultural beliefs, languages, and values.
(f) Maintaining an awareness of emerging technologies to enhance knowledge and inform practice	Participating in the action research process increased my awareness of emerging technologies to enhance knowledge and inform practice.

Table 11

TQS Competency 2 Indicators and the Associated Open Ended Questions

TQS Competency 2 Indicators	Open-Ended Survey Questions
(a) Collaborating with other teachers to build personal and collective professional capacities and expertise	Please describe, if applicable, a specific example of how participating in the action research process increased your collaboration with others.
(b) Actively seeking out feedback to enhance teaching practice	Please describe, if applicable, a specific example of how participating in the action research process enhanced your teaching practice.
(c) Building capacity to support student success in inclusive, welcoming, caring, respectful and safe learning environments	Please describe, if applicable, a specific example of how participating in the action research process increased your capacity to support student success in inclusive, welcoming, caring, respectful, and safe learning environments.
(d) Seeking, critically reviewing and applying educational research to improve practice	Please describe, if applicable, a specific example of how participating in the action research process increased your capacity to seek, critically review, and apply educational research to improve practice.
(e) Enhancing understanding of First Nations, Métis and Inuit worldviews, cultural beliefs, languages and values	Please describe, if applicable, a specific example of how participating in the action research process increased your understanding of First Nations, Métis, and Inuit worldviews, cultural beliefs, languages and values.
(f) Maintaining an awareness of emerging technologies to enhance knowledge and inform practice	Please describe, if applicable, a specific example of how participating in the action research process increased your awareness of emerging technologies to enhance knowledge and inform practice.

The remainder of the quantitative and qualitative questions focused on the participants' experience of the action research process and demographics. The quantitative questions were rated using the same scale from strongly disagree to strongly agree. The quantitative questions included:

- Overall, I found participating in the action research process valuable.
- Participating in the action research process met my professional learning needs.
- I plan to participate in an action research process again.

The qualitative questions included:

- Is there anything else we need to know about what it was like to participate in the action research process? Or, is there anything else you would like to share with us regarding your experience?
- Number of years of teaching experience (including this year):
- Courses taught this year:
- Highest level of education obtained:

Interviews. At the end of the survey, there was a section where participants could volunteer to participate in a 20-minute phone interview with an accredited volunteer. The purpose of interviews was to ask targeted questions that initiated informed and in-depth responses (Yin, 2018). Patton (2002) identifies that “interview data limitations include possibly distorted responses due to personal bias, anger, anxiety, politics, and simple lack of awareness since interviews can be greatly affected by the emotional state of the interviewee at the time of the interview” (p. 306). As a result, the interviews occurred during July and August of 2019 and the times and dates were based on the interviewer and interviewees' availability. Yin (2018) added that interview weaknesses include responses bias,

inaccurate information due to poor recollection of events, and the interviewee says what the interviewer wants to hear. The interviews were conducted by a volunteer and not the researcher to avoid interview bias. By using an outside interviewer, it eliminated the issue of the interviewee answering based on what the interviewer wants to hear. The researcher of this study also engaged in the action research project at the school and is a colleague of the participants; therefore, obtaining an objective interviewer created a space for interviewees to answer more honestly. Before beginning the interview, the interviewer asked the respondents for consent.

The interviews were semi-structured, with most of the questions predetermined. The interviews were semi-structured to give the interviewer the freedom to ask follow-up or clarifying questions if necessary. The nine interview questions (Appendix F) were peer-reviewed by nine doctoral students to strengthen the reliability and validity of the instrument (Creswell, 2012). The feedback provided by the doctoral students helped to clarify the interview questions by critiquing any ambiguous questions. The final interview questions were:

1. Tell me about your action research project. What was it like to participate in your action research project?
2. I noticed on question _____ you rated/answered _____. Can you tell me why you responded this way?
3. Tell me about the action research presentation day. To what extent did you learn from your colleagues' research? What, if anything, did you learn and why?
4. To what extent did participating in this action research project meet your professional learning needs? How? Why?

- According to your experience, is action research a potential option for professional development? Why/Why not?
 - Would you be able to share some examples of how participating in action research has impacted your professional practice?
 - Did participating in the action research process impact you in any other way?
5. What was the most rewarding aspect of your action research project?
 6. What was the biggest difficulty or frustration related to your action research project? How did you cope with these frustrations?
 - What were the challenges you encountered when conducting your action research project? What supports would have been helpful to you to counteract these challenges?
 7. Do you plan to share your action research findings with other professionals? Why/Why not? How?
 8. How, if at all, do you plan to use an action research process in the future?
 9. Is there anything else that you would like to share about action research or teacher learning in schools?

The second question in the interview was tailored to the participants' survey responses. This question provided the opportunity for participants to expand on their survey responses. The second question was also adapted to the research questions of this study. Each phone interview lasted no longer than 20 minutes. During the interviews, participant responses were recorded on a password protected iPad and later transcribed. There was no compensation for the interview participants' time. The interviewer received a card, gift certificate, and a small token of appreciation following conducting the interviews.

Ethical Considerations

The Institutional Review Board approved this study on June 15, 2019. The school district for this study also authorized conducting the research and its methods. Additionally, outlined at the beginning of the survey was a letter of consent for the survey participants. The responses and recordings of the research were kept confidential. Confidentiality of the participants and the school district was maintained using pseudonyms. Any data that could unveil the identity of the participants was omitted. Additionally, participants were aware of their participation in this study before completing the survey and interviews and had an opportunity to ask clarifying questions. Moreover, anonymity of the participants will be maintained by excluding any roles or titles and all participants will be referred to as either *they* or *their*.

Statement of Positionality

I have been working as a high school math and financial management teacher for seven years. I received my Bachelor of Education from the University of Alberta with a major in mathematics and a minor in physical education. Shortly after that, I received my Master of Education in Leadership through the University of Portland. My Capstone project during my masters was a quantitative study focused on inquiry-based versus traditional based teaching methods in high school mathematics. I have always been hungry for learning and the process of seeking new information to improve schools and classrooms. I do have personal assumptions that PLD is one of the best vehicles to improve classrooms and schools. Furthermore, I believe that when teachers implement, analyze, and reflect on a new lesson or initiative, the product will iteratively get better with each implementation.

In this study, I was engaging in an action research project of my own and a colleague of the participants. Because of my proximity to the participants, I needed to maintain an objective position. To achieve this, I used bracketing to set aside my bias. Gearing (2004) defines bracketing as a “scientific process in which a researcher suspends or holds in abeyance his or her presuppositions, biases, assumptions, theories, or previous experiences to see and describe the phenomenon” (p. 1430). Furthermore, “bracketing is a method used by some researchers to mitigate the potentially deleterious effects of unacknowledged preconceptions related to the research and thereby to increase the rigour of the project” (Tufford & Newman, 2010, p. 81). The bracketing methods I used included memo writing and ongoing meetings with individuals outside the study to assist me in recognizing preconceptions and biases (Rolls & Relf, 2006). The memos and conversations also helped me to stay focused on my research questions while setting aside my own experiences and assumptions.

Trustworthiness

This study aimed to maintain a level of rigour while gathering and analyzing data. Lincoln and Guba (1985) outlined a framework to establish rigour and trustworthiness in qualitative portions of studies: credibility, dependability, confirmability, and transferability.

Credibility and reliability. Achieving credibility and reliability in a variety of ways increased the trustworthiness in this study. The first was by having a prolonged and systematic observation process during the presentations. The observations were taken with an observation template to ensure consistency and accuracy of the data. The participants had the opportunity to member-check the observation notes to ensure the notes were accurate. The member checks were

emailed to the presenters and their respective collaborators. Of the 25 member checks sent, 8 participants confirmed that the data were accurate while the remaining participants did not reply. This study also achieved credibility and reliability by triangulating the data. Quantitative data were gathered via surveys; the qualitative data were gathered via observations, surveys, and interviews.

The final way in which this study was credible and reliable was through reflexivity. Reflexivity was achieved by maintaining a reflective journal of all thoughts, decisions, and challenges throughout the analyzing process. The reflective process ensures that the credibility of the researcher is maintained (Houghton, Casey, Shaw & Murphy, 2013).

Dependability. Dependability was achieved by triangulating the data and through thick description of the research methods. By providing an in-depth description of the participants, instruments, and action research process, this is a dependable study. Because of the description of the research methods, replicating this study in a different study and context is possible.

Transferability. Thick description throughout this study increased its transferability. Thick description ensures that there is enough description for the reader to determine if the study is transferable to other contexts (Lincoln & Guba, 1985). Replicating this study is possible through thick description of the context, setting, and range of experiences and perspectives of the participants, comparing the sample of the data set to the larger population achieved transferability. In this study, the staff of the school had a wide range of educational experiences, and there was equal representation of females and males. In the data collected, there was also a range of educational experiences; however, more females participated in the presentations and phone interviews in comparison to the males.

Confirmability. Finally, confirmability established trustworthiness. An audit trail, triangulation, and reflexivity achieved confirmability. An audit trail is a process of keeping a list of notes throughout the data analysis, and these notes supported the rationale for the codes. These codes also were used to ensure the results were not reflective of the researcher's assumptions and preconceptions. The audit trail also described how the researcher arrived at themes from the codes because a clear process was documented while analyzing the data. It is my role as the researcher to ensure that the reader understands why certain interpretations were made (Koch, 1994).

Data Analysis

Analyzing data in case studies is an intense process. "The demands of a case study on your intellect, ego, and emotions are far greater than those of any other research method. This is because the data collection procedures are not routinized" (Yin, 2009, p. 68). In this study, the survey required quantitative data analysis, and the observation, survey, and interview data required qualitative data analysis.

Quantitative data analysis. The survey data in this study measured the extent to which educators perceived action research as having the capacity to facilitate engagement in TQS Competency 2, and how teachers responded to the action research process in general. These data were self-reported by the participants responding to questions based on each indicator of TQS Competency 2 and regarding their overall experiences. The questions based on TQS Competency 2 were analyzed using descriptive statistics. These statistics created a better understanding of what indicators the educators were most successful in accomplishing in comparison to the least. The questions that analyzed the

educators' overall experience were also analyzed using descriptive statistics to determine if teachers perceived action research as being a valuable process. After that, to better understand the data, the researcher analyzed the qualitative data to gain a better understanding of the quantitative data.

Qualitative data analysis. Qualitative data analysis requires a specific way of collecting, analyzing, and coding data (Patton, 2002). Saldaña (2016) suggests using four different coding processes: (a) pre-coding, (b) first cycle coding, (c) second cycle coding, and (d) post-coding and pre-writing. In this study, the researcher analyzed the data using pre-coding, first cycle coding, and second cycle coding methods.

After gathering the data, the researcher's initial step was pre-coding. Pre-coding is when the researcher collects data, notes important words, records phrases, and writes down observations (Saldaña, 2016). Within the pre-coding stage, Saldaña (2016) reveals that the researcher has the responsibility to write field notes and analytic memos during and after observations and interviews. Fieldnotes "are the researcher's written documentation of participant observation, which may include the observer's personal and subjective responses to and interpretations of social action encountered" (Saldaña, 2016, p. 42). Analytic memos, on the other hand, are critical thoughts that the researcher has while documenting observations (Clarke, 2005). Analytic memos encourage the researcher to be reflexive to understand the data at a deeper level and ensures that any prior assumptions held by the researcher are kept in check (Mason, 2002). Within this study, the researcher wrote down reflective thoughts and questions and included analytic notes during the observations. Additionally, while listening to the interviews, the researchers wrote down analytic memos about the participants'

responses. After the data were collected, the researcher highlighted, circled, and underlined any quotations that were important (Boyatzis, 1998).

Once the pre-coding stage was complete, the researcher used Magnitude Coding for the first cycle coding stage. Saldaña (2016) states that Magnitude Coding is best when quantitative data requires a more in-depth analysis that is best supported by qualitative data. “Magnitude Coding consists of and adds a supplemental alphanumeric or symbolic code or subcode to an existing coded datum or category to indicate its intensity, frequency, direction, presence, or evaluative content” (Saldaña, 2016, p. 86). In this study, the TQS Competency 2 indicators were the codes. The data was analyzed one indicator at a time, and the responses were categorized as being positive, negative, neutral, or mixed (Saldaña, 2016). After coding the data, the frequency of the positive, negative, neutral, or mixed categories was summarized. The process was repeated for each TQS Competency 2 indicator.

The first cycle, Magnitude Codes, although organized, provided a large amount of data for each indicator. In the second cycle of coding, the researcher used Pattern Coding. Pattern Codes allowed for a large amount of data to be siphoned into more manageable and meaningful categories (Saldaña, 2016). From the second cycle of coding, major themes from the Pattern Codes emerged.

Summary

The purpose of this mixed-method study was to investigate the extent to which educators perceived action research as having the capacity to facilitate engagement in TQS Competency 2, or engagement in “career-long professional learning and ongoing critical reflection to improve teaching and learning” (Alberta Education, 2018c, p. 4). More specifically, this study sought to understand teacher

perceptions of the process of planning, executing, and evaluating a research-based process within their practice. Gathering data occurred in three ways: observations, surveys, and interviews. In total, there were 25 different action research projects presented, 38 educators completed the survey, and six phone interviews were conducted. The data were first pre-coded, and then Magnitude and Patterns Codes were used to identify themes. Finally – and most importantly – this study aimed to be trustworthy. Triangulating the data, member checking the observations, providing thick descriptions of the research methods and context, and maintaining both a reflective journal and audit trail achieved trustworthiness. Through these processes, this study was credible, reliable, transferable, and confirmable – all key aspects of a trustworthy study. The findings of these methods are reported in Chapter 4.

Chapter 4: Results

The purpose of this mixed-method study was to investigate the extent to which educators perceive action research as having the capacity to facilitate engagement in TQS Competency 2, or engagement in “career-long professional learning and ongoing critical reflection to improve teaching and learning” (Alberta Education, 2018c, p. 4). More specifically, this study sought to understand teacher perceptions of the process of planning, executing, and evaluating a research-based process within their practice. In the previous chapter, the methodology of the research was discussed, including the design, setting, instruments used, as well as the data collection and analysis procedures. Reporting of the analysis is organized to address the teachers’ perceptions and experience of action research and the six research questions in this study:

1. To what extent does participating in action research facilitate teachers collaborating with other teachers to build personal and collective professional capacities and expertise?
2. To what extent does participating in action research facilitate teachers actively seeking out feedback to enhance teaching practice?
3. To what extent does participating in action research facilitate teachers building capacity to support student success in inclusive, welcoming, caring, respectful and safe learning environments?
4. To what extent does participating in action research facilitate action seeking, critically reviewing, and applying educational research to improve practice?

5. To what extent does participating in action research facilitate enhancing understanding of Indigenous worldviews, cultural beliefs, languages, and values?

6. To what extent does participating in action research facilitate maintaining an awareness of emerging technologies to enhance knowledge and inform practice? (Alberta Education, 2018c, p. 4)

The research questions for this study aligned with the indicators under TQS Competency 2. However, the purpose of the study also sought to understand how teachers perceived and experienced action research, and both qualitative and quantitative data were gathered. The first data collected were the observations of the action research presentations. Table 12 illustrates the topics of the action research projects presented and the number of teachers working on each project. This table is also outlined in Appendix G because this table will be referenced again in Chapter 5.

Table 12

*Educators' Action Research Project Presentations and the Number of Teachers**Collaborating*

Presentation Number	Action Research Project	Number of Educators
1	Outcome-Based Assessment in Mathematics	1
2	Google Classroom Implementation in Physics	1
3	Engagement in Religion Hours and Class	1
4	Self-Assessment in Art	1
5	In-Reach Program for At-Risk Students	1
6	Survey Development & Offsite versus Onsite Seacan Project	1
7	Student Perspective of Landscaping Course	1
8	Project-Based Learning in Design Studies and Student Retention in Program	1
9	Standards and Assessment in Cosmetology	1
10	Removing Multiple Choice in Science and Math	1
11	Effects of Pre-Unit Exam Administration on Summative Grades and Understanding	8
12	Correlation Between Fine Arts and Students Perceived High School Experience	2
13	Analyzing Physical Education Enrollment	1
14	Google Classroom Implementations in Science and Math	2
15	Restorative Practices	1
16	Retention Rate in French Immersion Program	1
17	Mental Health Survey Results from Year to Year	4
18	Using Screencastify as Assessment tool in English & Grade 9 and High School Publication Partnership	1
19	Long Range Plan Change in Biology	1
20	Identifying Barriers and Opportunities for Students Transitioning Out of Foundations Programs	1
21	STEM Collaboration in Grade 10	2
22	Spanish Retention Rates	1
23	Induce More Creativity into the Writing Process	1
24	Student Perspectives of Teaching Quality Standard	1
25	The Single iPad Classroom	1

Next, to seek more understanding of the research questions through both quantitative and qualitative questions, surveys were administered. There were 38 respondents of the survey in total; however, only 33 identified their years of experience and their highest level of education. On the survey, the respondents could choose from the following options: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree. Finally, to provide more depth to the research questions and understand the participants' experiences and perceptions, six interviews were conducted.

The data was triangulated together and will be reported in the same order as the research questions for this study. The data were analyzed in three stages: pre-coding, first-cycle coding, and second-cycle coding (Saldaña, 2016). In the pre-coding stage, the field notes and analytic memos were documented as the data was being collected, and important quotes were underlined. In the first-cycle coding stage, each TQS 2 competency was analyzed using Magnitude Coding. The data were analyzed one indicator at a time, and the responses were categorized as being positive, negative, neutral, or mixed (Saldaña, 2016). After coding the data, the frequency of the positive, negative, neutral, or mixed categories was summarized. In the second-cycle coding stage, more manageable and meaningful categories were created by Pattern Coding.

TQS 2 Indicators Rating Scale Responses

To answer each of the research questions, survey participants responded to rating scale items about each of the TQS 2 indicators. Table 13 displays the percentage of participants that agreed, means, and standard deviation for each TQS 2 indicator. An analysis of variance showed that there was a statistically significant difference between the indicators, $F(5,37) = 8.918, p < .001$. Tukey post hoc tests

revealed that the indicator *enhancing understanding of First Nations, Métis and Inuit worldviews, cultural beliefs, languages and values* was statistically significantly lower than the other indicators ($p < .001$).

Table 13

Summary of Quantitative Survey Data for Each TQS 2 Indicator

TQS Competency 2 Indicator	<i>n</i>	% Agree	<i>M</i>	<i>SD</i>
(a) collaborating with other teachers to build personal and collective professional capacities and expertise	38	55%	3.37	1.14
(b) actively seeking out feedback to enhance teaching practice	38	68%	3.76	0.97
(c) building capacity to support student success in inclusive, welcoming, caring, respectful and safe learning environments	38	66%	3.66	0.91
(d) seeking, critically reviewing and applying educational research to improve practice	38	61%	3.63	1.05
(e) enhancing understanding of First Nations, Métis and Inuit worldviews, cultural beliefs, languages and values	38	24%	2.71	1.14
(f) maintaining an awareness of emerging technologies to enhance knowledge and inform practice	38	34%	3.13	1.02

% Agree included responses of both agreed and strongly agreed. To calculate the mean the following numerical values were used: 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree.

To gain a better understanding the rating scale responses, the coming sections will provide more statistical analysis of the quantitative data. Additionally, the qualitative data for each TQS 2 indicator will be unpacked to better understand educators' perceptions and experiences for each research question.

Collaborating to Build Professional Capacities and Expertise

To answer the first research questions, an analysis was completed of the participants' responses to the statement: *Participating in the action research process enhanced my collaboration with others*. Table 14 displays the percentage of participants who agreed or strongly agreed, as well as the mean and standard deviations of three different groups. The survey respondents could choose from the following options: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree. For this item, 8% strongly disagreed, 16% disagreed, 21% neither agreed nor disagreed, 42% agreed, and 13% strongly agreed.

The first row in the table represents the responses of all the participants, and then the responses were disaggregated by years of experience and their highest level of education. An analysis of variance showed that the comparison of means by years of experiences was not statistically significant ($p > .05$). Within the years of experience groups, the group that agreed most with the statement were the educators who had 0 to 5 years of experience. Of the educators who had 0 to 5 years of experience, 83% agreed that action research enhanced their ability to collaborate with others, and the mean was 4.00 ($SD = .63$). An independent samples t -test showed that the comparison of means by the highest level of education was not statistically significant ($p > .05$). Of the two highest education groups, of the educators whose highest level of education was a bachelor's degree, 80% agreed with the statement, while 54% of those with a master's degree agreed with the statement.

Table 14

*Action Research Process Enhanced my Collaboration with Others Participant**Responses*

Participant Experience and Education	<i>n</i>	% Agree	<i>M</i>	<i>SD</i>	<i>p</i>
All Participants	38	55%	3.37	1.14	
Years of Experience					.460
0-5	6	83%	4.00	0.63	
6-10	8	38%	3.00	1.31	
11-20	6	67%	3.33	1.51	
>20	13	46%	3.15	1.21	
Highest Level of Education					.297
Bachelor's Degree	20	80%	3.25	1.25	
Master's Degree	13	54%	3.69	1.03	

% Agree included responses of both agreed and strongly agreed. To calculate the mean the following numerical values were used: 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree.

These numerical responses were understood better through answers to the open-ended question: *Please describe, if applicable, a specific example of how participating in the action research process increased your collaboration with others.* Not all educators provided written feedback; however, 55% of the survey respondents ($n = 38$) did provide feedback regarding action research and collaboration. In addition to the qualitative data from the survey, many participants spoke about collaboration in the interviews and during the presentations. In the following sections, the data regarding supports, barriers, and potential opportunities around action research and collaboration will be discussed.

Action research supports collaboration. Of the 25 presentations, 5 (20%) were collaborative efforts. As a result, there were 20 educators out of the 50 (40%) who chose to work on their action research projects collaboratively with other educators in the school. Throughout the presentations, many of the participants

spoke to the importance of interacting and collaborating with their colleagues to increase their professional capacities. Collaborating with colleagues included sharing resources, comparing data, creating common goals, developing common assessments, collaborating across disciplines, reflecting on practices, and having curricular conversations. Of the presentations observed, the presentation that showed the most collaboration was the educators who chose to focus on mental health and addiction for their action research project. All the educators who worked on this project were committed to improving these results and the nature of their positions and work allowed them to be focused on these goals. Some of the factors that helped them to collaborate successfully were their workplace proximity to one another, their job titles within the school, trust within their team, and their flexible schedules. For example, the educators of this project worked very closely with one another to create a safe space for students to meet with an adult both during and outside of class time.

In addition to collaboration data supported in the interviews, one survey respondent expanded on how action research promoted collaboration:

My two colleagues and I were forced to look at our project in a more formal, analytical way. I believe this type of research and the more concrete evidence it provides will be very helpful when considering future projects and applying for funding.

There was also evidence from the interview data that creating space for the presentations increased collaboration amongst the staff. All six of the interviewees mentioned that they were as interested in their colleagues' presentations as they were their own. One interviewee mentioned that she was "making mental notes

about what would fit well in [her] area...that we could look at doing.” The presentations created opportunities for future partnerships and collaborations.

Collaboration barriers within the action research model. The 8% of educators who *strongly disagreed* with the quantitative question about collaborating on the survey did not provide any written feedback. Unfortunately, understanding why they strongly disagreed that action research promotes collaboration will be unknown. Conversely, there was qualitative data to support those who *disagreed* or *neither disagreed or agreed*, and the comments from the survey aligned with some of the data throughout the observations and interviews. The educators who chose to work on a project that was unique to their practice did not collaborate with others. Those who worked on projects individually either chose a “niche” topic to work on or the work they do daily was unique to the work of their colleagues. For example, they were the only educator within a specific area or discipline. This, therefore, increased barriers to collaboration.

Through iterative approach through the data, there was another barrier that hindered collaboration within the action research model. Educators perceived that many of their colleagues did not “buy-in” to the action research process. As a result, there were fewer people to collaborate with, and there was less concern for what others pursued. One survey respondent hypothesized why some colleagues did not “buy-in”:

People will always be hard to work with. If the approach of this type of project is elementary and explicitly linked to them (or shown directly), then some people may be less negative – I enjoyed it, but I am also a student, so it made sense to me.

In addition to showing educators a clearer process of the action research process, there was also feedback that the process would have been more collaborative if it was done on a more intimate level.

Creating opportunities to collaborate through action research. Aside from increasing collaborative relationships within the school, there were two teachers that opted to collaborate with educators in other schools. One of the teachers worked directly with a teacher from another school to co-publish a book with students from two different schools. The other educator sought out advice and resources from teachers at different schools to enhance her action research project. One interview respondent was excited about the possibilities and data from her project and was looking at presenting her project with other educators from similar fields at conferences.

For those educators who struggled to find working partnerships in the action research model, working with educators in different schools could have increased collaboration. From the experience of those who worked with educators in other schools, the administration at the school was supportive. The TQS indicators only specifies working with colleagues. From this study, collaborating with others outside of the school was valuable. Potentially, changing the TQS wording to be inclusive of a variety of collaboration opportunities aside from other educators could be changed in future drafts.

Actively Seeking out Feedback to Enhance Teaching Practice

To answer the second research question, an analysis was completed of the participants' responses to the statement: *Participating in the action research process enhanced my teaching practice*. Table 15 displays the percentage of participants who agreed or strongly agreed, as well as the mean and standard

deviations of three different groups. The survey respondents could choose from the following options: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree. For this item, 3% strongly disagreed, 8% disagreed, 21% neither agreed nor disagreed, 47% agreed, and 21% strongly agreed.

The first row represents the responses of all the participants, and then the responses were disaggregated by years of experience and their highest level of education. An analysis of variance showed that the comparison of means by years of experiences was not statistically significant ($p > .05$). Within the years of experience groups, the group that agreed most with the statement were the educators who had 6 to 10 years of experience. Of the educators who had 6 to 10 years of experience, 88% agreed that action research enhanced their teaching practice, and the mean was 3.88 ($SD = 1.25$). An independent samples t -test showed that the comparison of means by the highest level of education was not statistically significant ($p > .05$). When comparing education levels, 75% of those with a bachelor's degree agreed with the statement, while 69% of those with a master's degree agreed with the statement.

Table 15

Action Research Process Enhanced My Teaching Practice Participant Responses

Participant Experience and Education	<i>n</i>	% Agree	<i>M</i>	<i>SD</i>	<i>p</i>
All Participants	38	68%	3.76	0.97	
Years of Experience					.820
0-5	6	67%	3.83	0.75	
6-10	8	88%	3.88	1.25	
11-20	6	83%	4.17	0.75	
>20	13	62%	3.69	1.03	
Highest Level of Education					.991
Bachelor's Degree	20	75%	3.85	1.04	
Master's Degree	13	69%	3.85	0.90	

% Agree included responses of both agreed and strongly agreed. To calculate the mean the following numerical values were used: 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree.

These numerical responses were understood better through answers to the open-ended question: *Please describe, if applicable, a specific example of how participating in the action research process enhanced your teaching practice.* Not all educators provided written feedback; however, 61% of the survey respondents ($n = 38$) did provide feedback regarding action research and enhancing teaching practice. In addition to the qualitative data from the survey, many participants spoke about how action research enhanced their teaching practice in the interviews and during the presentations. In the coming sections, how action research enhanced teaching practice and an understanding of the different experiences' educators had with their teaching experiences will be discussed.

Understanding the variance in responses. Of all the research questions, this question had the highest percentage of the respondents agree. Although the response was high, understanding why educators may have disagreed with this statement is necessary to improve the action research process. Of the educators that

responded either *strongly disagree*, *disagree*, or *neither agree or disagree*, the written feedback in the survey did not suggest that action research hindered their teaching practice but rather that their action research project was not focused on teaching specifically. The written feedback supported that although the action research project did not enhance their teaching practice, it did improve an understanding of the subject area, and allowed for time to work on a specific topic. It was evident that the participants of this study were continuously reflecting on their practice to make informed decisions about their practice.

Throughout the interview and observation data, there was no evidence that action research did not enhance educators' teaching practice; however, not all action research projects focused on teaching practices. Some action research projects were focused on other areas such as student needs, program improvements, assessments, or understanding student results. Another reason that all action research projects were not focused on teaching practices was that not all educators were teaching students; some were in support, counselling, or administrative roles.

Evidence of how action research supports teaching practices. There was an overwhelming amount of qualitative data throughout the surveys, interviews, and observations supporting the idea that action research enhances teaching practices. All the survey responses discussed how action research provided space and time for educators to be intentional about the goals they were setting for their classroom and to follow through with their goals. One survey respondent stated that “[Action research] made me think of ways to improve my practice, which is something I don’t do enough of. It forced me, in a good way, to make a change.”

Within the interview data, many of the respondents spoke to how action research allowed each of them to focus on a single goal. One respondent expanded on this idea, stating that the action research process allowed for her to have time to explore different research and find different resources to improve her teaching practice. Having time to focus on a single goal was a refreshing change to other professional learning models that often do not pertain to all educators. Another interview respondent agreed that action research enhanced teaching practices because educators had the time to put theory into action. Too often, teachers are given the theory, and there is no time to apply the new knowledge into practice.

Of the presentations, there were 12 presentations that included concrete evidence as to how action research improved teaching practices. Creating a system where teachers were provided time to work on changing their teaching practices based on data worked well across many disciplines. The educator who reported the most positive changes to their teaching practice as a result of action research was a landscaping teacher who provided a variety of learning experiences for her students. Their new teaching practice included hands-on experiences where students landscaped community member's properties, theoretical lessons, and field trips. One of the field trips included going to a building that had created a living roof that was a replica of the land and ecosystem that the building was built on. Furthermore, because of the project, the teacher surveyed the students to understand their experience to make the landscaping class more meaningful and responsive to students' needs. This teacher's presentation not only show-cased the impact that action research had on teaching practices; it also stimulated ideas for other educators.

Building Capacity to Support Inclusive Learning Environments

To answer the third research question, an analysis was completed of the participants' responses to the statement: *Participating in the action research process increased your capacity to support student success in inclusive, welcoming, caring, respectful, and safe learning environments*. Table 16 displays the percentage of participants who agreed or strongly agreed, as well as the mean and standard deviations of three different groups. The survey respondents could choose from the following options: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree. For this item, 3% strongly disagreed, 7% disagreed, 23% neither agreed nor disagreed, 52% agreed, and 13% strongly agreed.

The first row of the table represents the responses of all the participants; then, the responses were disaggregated by years of experience and the highest level of education. An analysis of variance showed that the comparison of means by years of experiences was not statistically significant ($p > .05$). Within the years of experience groups, teachers with either 0 to 5 years of experience or 11 to 20 years of experience were most likely to agree with the statement. An independent samples *t*-test showed that the comparison of means by the highest level of education was not statistically significant ($p > .05$). When comparing education levels, 50% of those with a bachelor's degree agreed with the statement, while 69% of those with a master's degree agreed with the statement.

Table 16

Action Research Process Increased Your Capacity to Support Student Success in Inclusive, Welcoming, and Safe Learning Environments Participant Responses

Participant Experience and Education	<i>n</i>	% Agree	<i>M</i>	<i>SD</i>	<i>p</i>
All Participants	38	66%	3.66	0.91	
Years of Experience					.737
0-5	6	83%	3.83	0.41	
6-10	8	63%	3.50	1.20	
11-20	6	83%	4.00	0.63	
>20	13	69%	3.85	0.90	
Highest Level of Education					.474
Bachelor's Degree	20	50%	3.70	0.80	
Master's Degree	13	69%	3.92	0.95	

% Agree included responses of both agreed and strongly agreed. To calculate the mean the following numerical values were used: 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree.

These numerical responses were understood better through answers to the open-ended question: *Please describe, if applicable, a specific example of how participating in the action research process increased your capacity to support student success in inclusive, welcoming, caring, respectful, and safe learning environments.* Not all educators provided written feedback; however, 45% of the survey respondents ($n = 38$) did provide feedback regarding action research and collaboration. In addition to the qualitative data from the survey, many participants spoke about how action research allowed them to create an inclusive classroom environment for *all* students. In the next sections, examples of how action research can create and facilitated inclusive, safe, welcoming, and caring learning environments will be outlined.

Creating an inclusive environments through job-embedded practices.

Ensuring that all students are learning in an inclusive, safe, welcoming, and caring

environment means that the action research process must be job-embedded. As Croft et al. (2010) outlined, when a practice is job-embedded, teachers are improving their practice based on the students with whom they are currently working. Throughout the interviews, observations, and surveys, it was very evident that the majority of teachers were shifting and changing their practices to create safe, caring, welcoming, and inclusive learning environments for the students they currently serve.

The strongest example of a job-embedded action research project involved one of the educators completing a qualitative case study of a student and how restorative practices helped with behaviour management. The educator first created a plan based on how to implement restorative practices with behaviour issues in a high school and supported her plan with extensive research. Then the teacher implemented her plan by maintaining a log of the various behaviours and the implications of restorative practices throughout the course of a school year. Based on each interaction, they were able to adjust and reflect on how effective or ineffective their practice was. By the end of the school year, the students' interactions were far more positive, and there was an observable change in behaviour for the better because of her action research project.

Another educator also detailed a positive impact on creating an inclusive, caring, and safe space for her students through action research. They completed an in-depth analysis of what risk factors to identify from research-based sources. A bulk of the research-based sources were from accessing the Alberta Teachers' Association library. Below is a description of their action research project:

This year we decided to look at kids that were falling through the cracks and create a student support block in the day. Students who may typically

not be attending very often had many outside factors going on, and we felt they needed kind of a safe place to be. We wanted to create a program that would develop connections and forge relationships. And to do that in a setting where kids could be free to talk, the teacher could move around and work with them, they could work with other students, we could have a pot of tea on, and the kids could have food to eat. When [the researcher] brought up the idea of doing further research into things, um, I chose that area and looking particularly at programs that were set aside within a school day, targeting non-attending, at-risk, and what techniques they used and what they thought was most effective. And, you know, what potholes they had fallen into. As we were running the program, we were kind of trying to build it and tweak it as we went.

This program was targeted at creating an inclusive environment for a specific group of students.

Other action research projects were not as specific; however, educators were focused on implementing new teaching strategies or building relationships, which increased opportunities for all students to learn the content because the instruction was differentiated. As one survey response described, “The action plan process was a constant reminder to get out in the hallways and greet and chat with students.” In turn, this visibility built relationships and created opportunities to meet with students.

Creating inclusive learning environments moving forward. Some of the results of how action research projects increased creating inclusive, safe, caring, and welcoming environments were positive. Some educators learned that the strategies that they were using in their practice were not successful. For instance,

one of the educator's action research project was to increase engagement and create a healthy environment through discussions. Unfortunately, the teacher found it challenging to find success because many of the students – often the loudest ones – were not interested in the material and were unwilling to contribute to the discussions in a positive way. Although the teacher lacked success with her efforts throughout the course of the action research project, the educator had reflected on her process and had ideas moving forward into the next school year.

A group of educators that focused on improving mental health and addictions of the whole school also gained insight into how to improve for next year. The educators had used an instrument in the 2017-2018 school year to gauge how students were doing with mental health and addictions. The survey was anonymous, and the data were analyzed for the educators to understand the areas of need. For their action research project, they responded to the data by creating mini sessions for the students to watch every week, brought in speakers, and worked with a variety of individuals and agencies. This group of educators was supported with funding during the 2018-2019 school year to focus on these results. Then the same instrument was administered a year later in the 2018-2019 school year to determine if their action research was successful. The results were not complete during their time of presenting; however, the results they did have concluded that addictions increased, and the overall mental health of the students was not better. The educators recognized that their action research project was a large undertaking and continuing to track the results was necessary over a longer period to understand what supports worked better than others.

It is also important to forge relationships with students who will be transferring to the school. One educator took it upon herself to co-create a book

with high school students and Grade 9 students. The educator used her PLD time to go to a middle school to work with students in Grade 9 to write and publish material. Through this process, they were able to create relationships with future students. During this process, the Grade 9 students were open to sharing their apprehensions about coming to a new school and appreciated the opportunity to get to know a teacher in a more relaxed setting.

Seeking, Critically Reviewing, and Applying Educational Research

To answer the fourth research question, an analysis was completed of the participants' responses to the statement: *Participating in the action research process increased my capacity to seek, critically review, and apply educational research to improve my practice*. Table 17 displays the percentage of participants who agreed or strongly agreed, as well as the mean and standard deviations of three different groups. The survey respondents could choose from the following options: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree. For this item, 3% strongly disagreed, 13% disagreed, 24% neither agreed nor disagreed, 39% agreed, and 21% strongly agreed.

The first row represents the responses of all the participants; then, the responses were disaggregated by years of experience and the highest level of education. An analysis of variance showed that the comparison of means by years of experiences was not statistically significant ($p > .05$). Within the years of experience groups, the group that agreed most with the statement were the educators who had 11 to 20 years of experience. Of the educators who had 11 to 20 years of experience, 83% agreed that action research enhanced their ability to seek, critically review, and apply educational research; the mean was 4.00 ($SD = 1.01$). An independent samples *t*-test showed that the comparison of means by the highest

level of education was not statistically significant ($p > .05$). When comparing education levels, 15% of those with a bachelor's degree agreed with the statement, while 92% of those with a master's degree agreed with the statement.

Table 17

Action Research Increased My Capacity to Seek, Critically Review, and Apply Educational Research to Improve my Practice Participant Responses

Participant Experience and Education	<i>n</i>	% Agree	<i>M</i>	<i>SD</i>	<i>p</i>
All Participants	38	61%	3.63	1.05	
Years of Experience					.315
0-5	6	50%	3.83	0.93	
6-10	8	50%	3.13	1.13	
11-20	6	83%	4.00	1.10	
>20	13	69%	3.92	0.95	
Highest Level of Education					.121
Bachelor's Degree	20	15%	3.59	1.15	
Master's Degree	13	92%	4.10	0.76	

% Agree included responses of both agreed and strongly agreed. To calculate the mean the following numerical values were used: 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree.

These numerical responses were understood better through answers to the open-ended question: *Please describe, if applicable, a specific example of how participating in the action research process increased your capacity to seek, critically review, and apply educational research to improve practice.* Not all educators provided written feedback; however, 37% of the survey respondents ($n = 38$) did provide feedback regarding action research and collaboration. In addition to the qualitative data from the survey, many participants discussed educational research during their presentations and interviews. In the next sections, the advantages of educational research as well as a lack of educational research in the qualitative data will be outlined.

Lack of access of educational research. In the observation and interview data, there is evidence of four educators who accessed educational research.

Conversely, according to the survey data, 61% agreed that action research

encouraged educators to seek, review, and apply educational data. Some of the comments in the survey outlined why some educators did not access educational research. One response stated that they found it difficult to narrow down research that directly applied to their topic. Another found that accessing educational research was too time-consuming and not a priority, while another stated that researchers might not always know the best strategies for her students. An interesting finding of the survey data was that four respondents thought this question was asking if they critically reviewed data. They referred to critically reviewing their own data and not reviewing educational research. Therefore, a lack of understanding of the question might skew the quantitative results shown in Table 17.

Advantages of educational research. Contrary to those who did not find value in educational research, there were some who found accessing educational research valuable. The four educators who admitted to using educational research in their action research project spoke highly of the information gained and how it supported their process. There was one survey respondent who stated: “By allowing us to focus the research on our own interests and classroom, it motivated me to do further research beyond just the surface.” Some educators accessed the Alberta Teacher’s Association library for academic resources on their action research topic. One educator admitted that the action research project encouraged her to access and review research for the first time in her career:

I have never really been too interested in researching. I really love being in a classroom and just kind of learning from my experiences. Action research allowed me to go through that endeavor and through that process of looking

for academic articles and different gradings, that would allow me to kind of have a foundation for what I want to do myself. It was quite useful.

All the educators who utilized educational research had the same sentiments about seeking and reading educational research. Because 92% of those who had their master's degree found accessing educational research valuable, it could possibly be a result of having experience reading and writing research in their master's degree programs. Searching and reading research might be less daunting to those who have had formal training in this area in comparison to educators who have a bachelor's degree.

Enhancing Understanding of Indigenous Worldviews, Cultural Beliefs, Languages, and Values

To answer the fifth research question, an analysis was completed of the participants' responses to the statement: *Participating in the action research process increased your understanding of First Nations, Métis, and Inuit worldviews, cultural beliefs, languages and values*. Table 18 displays the percentage of participants who agreed or strongly agreed, as well as the mean and standard deviations of three different groups. The survey respondents could choose from the following options: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree. For this item, 18% strongly disagreed, 21% disagreed, 37% neither agreed nor disagreed, 18% agreed, and 5% strongly agreed.

The first row represents the responses of all the participants; then, the responses were disaggregated by years of experience and the highest level of education. An analysis of variance showed that the comparison of means by years of experiences was not statistically significant ($p > .05$). Within the years of

experience groups, 33% of the educators who had 0 to 5 and 11 to 20 years of experience agreed with this statement. An independent samples *t*-test showed that the comparison of means by the highest level of education was not statistically significant ($p > .05$). When comparing education levels, 40% of those with a bachelor's degree agreed with the statement, while 38% of those with a master's degree agreed with the statement.

Table 18

Action Research Process Increased My Understanding of First Nations, Métis, and Inuit Worldviews, Cultural Beliefs, Languages, and Values Participant Responses

Participant Experience and Education	<i>n</i>	% Agree	<i>M</i>	<i>SD</i>	<i>p</i>
All Participants	38	24%	2.71	1.14	
Years of Experience					.521
0-5	6	33%	3.17	0.75	
6-10	8	0%	2.38	0.74	
11-20	6	33%	2.67	1.37	
>20	13	31%	3.00	1.29	
Highest Level of Education					.162
Bachelor's Degree	20	40%	2.60	0.94	
Master's Degree	13	38%	3.15	1.28	

% Agree included responses of both agreed and strongly agreed. To calculate the mean the following numerical values were used: 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree.

These numerical responses were understood better through answers to the open-ended question: *Please describe, if applicable, a specific example of how participating in the action research process increased your understanding of First Nations, Métis, and Inuit worldviews, cultural beliefs, languages, and values.* Not all educators provided written feedback; however, 37% of the survey respondents ($n = 38$) did provide feedback. In addition to the qualitative data from the survey, few participants discussed increasing their knowledge of First Nations, Métis, and

Inuit worldviews, cultural beliefs, languages, and values. In the next section, a discussion on the lack of evidence in this study regarding First Nations, Métis, and Inuit will be discussed.

Limited evidence. As shown in Table 19, only 24% of educators agreed that action research improved their understanding of First Nations, Métis, and Inuit worldviews, cultural beliefs, languages, and values. Results from the qualitative data supported these findings as well. There was one presentation on this topic, which involved surveying students about the importance of learning about First Nations, Métis, and Inuit worldviews, cultural beliefs, languages, and values. The results of the students' responses were varied. Some students identified as either First Nations, Métis, or Inuit and appreciated teachers having knowledge about their cultures and beliefs "to get past the cycle of racism towards aboriginal peoples hopefully." Other students were not as open to the idea of learning about another culture. Through this presentation, many of the survey respondents admitted that the students' responses and input broadened their perspectives about the lack of knowledge the students had and recognize that it is an area to work on.

The other piece of evidence that lends itself to learning about the worldviews, cultural beliefs, languages, and values of First Nations, Métis, and Inuit people was in an interview. The interviewee had taken many First Nations courses and brought her knowledge into the classroom over the course of a unit. Like other educators, they were astonished about the lack of information the students had in this area. In one of their classes, they chose to implement "a full-on sledding ceremony in class." The students were very apprehensive of the idea, and received pushback from a parent concerned about the educator trying to "indoctrinate their child with another religion." Aside from the presentation and

the interview, there was no other qualitative evidence of educators increasing their understanding of First Nations, Métis, and Inuit worldviews, cultural beliefs, languages, and values through action research.

Awareness of Emerging Technologies to Enhance Knowledge and Inform Practice

To answer the sixth research question, an analysis was completed of the participants' responses to the statement: *Participating in the action research process increased my awareness of emerging technologies to enhance knowledge and inform practice*. Table 19 displays the percentage of participants who agreed or strongly agreed, mean and standard deviations of three different groups. The survey respondents could choose from the following options: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree. For this item, 8% strongly disagreed, 13% disagreed, 45% neither agreed nor disagreed, 26% agreed, and 8% strongly agreed.

The first row represents the responses of all the participants; then, the responses were disaggregated by years of experience and the highest level of education. An analysis of variance showed that the comparison of means by years of experiences was not statistically significant ($p > .05$). Within the years of experience groups, the group that agreed most with the statement were the educators who had 11 to 20 years of experience. Of the educators who had 11 to 20 years of experience, 67% agreed that action research enhanced their awareness of emerging technologies, and the mean was 3.33 ($SD = 1.21$). An independent samples t -test showed that the comparison of means by the highest level of education was not statistically significant ($p > .05$). When comparing education

levels, 75% of those with a bachelor's degree agreed with the statement, while 31% of those with a master's degree agreed with the statement.

Table 19

Action Research Process Increased my Awareness of Emerging Technologies to Enhance Knowledge and Inform Practice Participant Responses

Participant Experience and Education	<i>n</i>	% Agree	<i>M</i>	<i>SD</i>	<i>p</i>
All Participants	38	34%	3.13	1.02	
Years of Experience					.923
0-5	6	33%	3.33	1.03	
6-10	8	38%	3.00	1.07	
11-20	6	67%	3.33	1.21	
>20	13	23%	3.23	1.01	
Highest Level of Education					.797
Bachelor's Degree	20	75%	3.25	1.07	
Master's Degree	13	31%	3.15	0.99	

% Agree included responses of both agreed and strongly agreed. To calculate the mean the following numerical values were used: 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree.

These numerical responses were understood better through answers to the open-ended question: *Please describe, if applicable, a specific example of how participating in the action research process increased your awareness of emerging technologies to enhance knowledge and inform practice.* Not all educators provided written feedback; however, 27% of the survey respondents ($n = 38$) did provide feedback regarding action research and emerging technology. Most of the survey respondents who did not agree that action research increased their awareness of emerging technologies responded that focusing on technology was not a focus of their study. In addition to the qualitative data from the survey, many participants spoke about technology during their interviews and observations. In the next sections, a discussion on how educators utilized technology in their classrooms for both teaching and assessment purposes.

Enhancing assessment with technology. One of the predominant themes within the area of technology was how the participants used technology as a tool for assessment. One of the strongest pieces of evidence was during an interview where the interviewee spoke about using Screencastify to mark students' essays. Screencastify is a Google add-on where teachers can add video and voice notes about students' essays while marking. The students have the advantage of listening to the teacher's feedback and understanding how to improve. At first, the educator admitted that the process took too much time because they were taking too much time for each essay. Throughout the semester, the educators became more efficient in the process and realized that students were far keener to receive feedback with Screencastify. He reflected on one student's reaction:

I told [the student] as he's coming into my class that morning. I said, "I sent you a clip. I don't know if you saw it." And he said, "Oh well, yeah. I'd like to see it. So can I go to the library?" So then he goes. He came bolting back, and he had a full run 30 seconds... he grabs something from his desk, and over his shoulders, he said, "I had to get my pen, I had to get my paper 'cause this is so cool." And I thought for a guy to move that fast... I mean, that was wonderful. And do they all do that? Yeah, that was one point where I knew it was going to be a hit, and it certainly did.

Through action research, the educator had the time to implement emerging technology, and it was hugely beneficial to her students. Another way educators were using technology was through Google Forms to receive student feedback. For instance, the observation data included one educator who had students working on an offsite project to build a tiny house. The educator recognized there were potential pitfalls of her project throughout the semester. As a result, they developed

a Google form to gain feedback from students about how to manage these issues and grow their program. While some teachers were able to administer their assessments, some teachers used emerging technology to analyze their data. One survey respondent stated that “by looking into multiple choice exams, I discovered optical character recognition (OCR) software that increased item/test analysis beyond the simple scantron output.” Having time to discover new technologies through action research improved both teaching and assessment practices.

Accessing content through technology. In addition to using technology for assessment, some teachers opted to use technology as universal supports in their classrooms. One of the presentations showcased a unique method of using technology in a math classroom to increase student participation. They used an iPad to write down notes that students could see in real-time through a projector. The iPad allowed her to “de-front the classroom in a way that leads to a more interactive teaching environment and cuts out the sink or swim reality of writing questions on the board and asking students to answer at their convenience.” De-fronting the classroom was beneficial because most of the students they taught had difficulties learning and writing notes down. The educator recognized the greatest benefit of this support was: “Students are finding easier ways to re-establish themselves within their notes and previously learned knowledge. This has led to complex thinking and a compare/contrast of their previous ideas with new ones.” In addition to using the iPad for notetaking, the teacher also used the following apps with the iPad to increase engagement: Notability, Plickers, Classroom Screen, and Planboard. By using technology, the educator had noticed a substantial increase in her summative assessment averages.

A very common action research project was educators using Google classrooms for the first time. All the educators who presented their action research projects on Google classrooms were from the mathematics or science departments. All of the educators recognized that building and maintaining a Google Classroom took a lot of time and energy. Despite the amount of effort, one survey respondent was a huge fan:

Students need choice and innovation and using different venues to provide feedback as well as give students more opportunities to challenge themselves and give them means to feel that success is within their grasp is essentially the key to their growth. Google Classroom and Google Docs have been instrumental in this and changed my practices substantially.

There were two presentations about Google Classrooms, and they all said that they planned on using Google Classroom in the future. Overall, the educators who used technology had mostly positive experiences and were willing to continue their technology use in future school years.

Teachers' Perceptions and Experience of Action Research

The research questions for this study were solely based on the indicators under TQS Competency 2. However, the purpose of the study also sought to understand how teachers perceived and experienced action research.

The research questions for this study were solely based on the indicators under TQS Competency 2. However, the purpose of the study also sought to understand how teachers perceived and experienced action research.

The final three quantitative survey questions were therefore directly related to educators' experience with the action research process. The first question to understand the educators' perceptions and experiences was: *Overall, I found*

participating in the action research process valuable. Table 20 displays the percentage of participants who agreed or strongly agreed, mean and standard deviations of three different groups. The survey respondents could choose from the following options: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree. For this item, 3% strongly disagreed, 13% disagreed, 16% neither agreed nor disagreed, 45% agreed, and 24% strongly agreed.

The first row of represents the responses of all the participants; then, the responses were disaggregated by years of experience and the highest level of education. An analysis of variance showed that the comparison of means by years of experiences was not statistically significant ($p > .05$). Within the years of experience groups, the group that agreed most with the statement were the educators who had 11 to 20 years of experience. Of the educators who had 11 to 20 years of experience, 100% agreed that they found the action research process valuable, and the mean was 4.33 ($SD = 0.52$). An independent samples t -test showed that the comparison of means by the highest level of education was not statistically significant ($p > .05$). When comparing education levels, 85% of those with a bachelor's degree agreed with the statement, while 85% of those with a master's degree agreed with the statement.

Table 20

The Action Research Process was Valuable

Participant Experience and Education	<i>n</i>	% Agree	<i>M</i>	<i>SD</i>	<i>p</i>
All Participants	38	68%	3.74	1.06	
Years of Experience					.527
0-5	6	83%	4.17	0.75	
6-10	8	75%	3.63	1.41	
11-20	6	100%	4.33	0.52	
>20	13	69%	3.77	1.01	
Highest Level of Education					.451
Bachelor's Degree	20	75%	3.76	1.00	
Master's Degree	13	85%	4.08	1.04	

% Agree included responses of both agreed and strongly agreed. To calculate the mean the following numerical values were used: 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree.

The second question to understand the educators' perceptions and experiences was: *Participating in the action research process met my professional learning needs*. Table 21 displays the percentage of participants who agreed or strongly agreed, mean and standard deviations of three different groups. The survey respondents could choose from the following options: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree. For this item, 5% strongly disagreed, 18% disagreed, 13% neither agreed nor disagreed, 39% agreed, and 26% strongly agreed.

The first row represents the responses of all the participants; then, the responses were disaggregated by years of experience and the highest level of education. An analysis of variance showed that the comparison of means by years of experiences was not statistically significant ($p > .05$). Within the years of experience groups, the group that agreed most with the statement were the educators who had 6 to 10 years of experience. Of the educators who had 6 to 10

years of experience, 75% agreed that action research process met my professional learning needs, and the mean was 3.63 ($SD = 1.41$). An independent samples t -test showed that the comparison of means by the highest level of education was not statistically significant ($p > .05$). When comparing education levels, 60% of those with a bachelor's degree agreed with the statement, while 77% of those with a master's degree agreed with the statement.

Table 21

The Action Research Process Met my Professional Learning Needs

Participant Experience and Education	<i>n</i>	% Agree	<i>M</i>	<i>SD</i>	<i>p</i>
All Participants	38	63%	3.58	1.20	
Years of Experience					.949
0-5	6	67%	4.00	0.89	
6-10	8	75%	3.63	1.41	
11-20	6	67%	3.60	1.52	
>20	13	69%	3.77	1.01	
Highest Level of Education					.941
Bachelor's Degree	20	60%	3.68	1.06	
Master's Degree	13	77%	3.77	1.30	

% Agree included responses of both agreed and strongly agreed. To calculate the mean the following numerical values were used: 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree.

The final question to understand the educators' perceptions and experiences was: *I plan to participate in an action research process again*. Table 22 displays the percentage of participants who agreed or strongly agreed, mean and standard deviations of three different groups. The survey respondents could choose from the following options: (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, and (5) strongly agree. For this item, 5% strongly disagreed, 24% disagreed, 18% neither agreed nor disagreed, 34% agreed, and 18% strongly agreed.

The first row represents the responses of all the participants; then, the responses were disaggregated by years of experience and the highest level of education. An analysis of variance showed that the comparison of means by years of experiences was not statistically significant ($p > .05$). Within the years of experience groups, the group that agreed most with the statement were the educators who had 0 to 5 and 11-20 years of experience. Of the educators who had 0 to 5 and 11 to 20 years of experience, 83% agreed that they plan to engage in action research again, and the means were 4.00 ($SD = 1.21$) and 4.00 ($SD = 0.63$), respectively. An independent samples t -test showed that the comparison of means by the highest level of education was not statistically significant ($p > .05$). When comparing education levels, 55% of those with a bachelor's degree agreed with the statement, while 69% of those with a master's degree agreed with the statement.

Table 22

Plan to Participate in Action Research Again

Participant Experience and Education	<i>n</i>	% Agree	<i>M</i>	<i>SD</i>	<i>p</i>
All Participants	38	53%	3.37	1.20	
Years of Experience					.343
0-5	6	83%	4.00	1.10	
6-10	8	75%	3.63	1.41	
11-20	6	83%	4.00	0.63	
>20	13	31%	3.15	1.14	
Highest Level of Education					.443
Bachelor's Degree	20	55%	3.38	1.12	
Master's Degree	13	69%	3.77	1.23	

% Agree included responses of both agreed and strongly agreed. To calculate the mean the following numerical values were used: 1 = strongly disagree, 2 = disagree, 3 = neither agree or disagree, 4 = agree, 5 = strongly agree.

These numerical responses were understood better through answers to the open-ended question: *Is there anything else we need to know about what it was like to participate in the action research process? Or, is there anything else you would*

like to share with us regarding your experience? Not all educators provided written feedback; however, 42% of the survey respondents ($n = 38$) did provide additional feedback about their overall experience. Additionally, educators spoke to their overall experiences during the observations of the presentations, and in the interviews. Magnitude and Pattern Coding – as used for the TQS Competency 2 indicators – was used to understand educators' overall perceptions and experiences of action research. Overall, educators' positive experiences and perceptions far outweighed the negative experiences in the qualitative data. In the coming sections, how educators perceived the time and presentations will be discussed. There will also be sections discussing how educators achieved their professional goals, and the role of the leadership.

Achieving professional goals. In the interviews, all educators agreed that action research was a method to achieve professional goals. Because the educators pursued their own goals, action research was tailored to fit the individual needs of educators. One interview respondent stated:

[Action research] was really good, because it gave you a focus on something. Sometimes you're just floundering trying to get through the day. And it pointed in the direction of what research you wanted to look and different topics you wanted to explore. [The action research process] gave me an idea of where I want to do the self-appointed reading, and the focus on what I was actually passionate about rather than just what the school wanted us to do.

As two interview respondents were implementing their action research plan, they chose to alter their process because they realized potential ways to improve their

process. The action research process allowed teachers to explore what works and does not work in their practice. As one interview respondent stated:

[Action research] showed me that it's not an all or nothing approach to something. I identified what's happening in my classes and to pivot and make that hybrid approach for a different group. One approach does not fit every sub-set. It really allowed me to embrace that and say, "Okay, but this didn't work, and I have to just back it up and let's try something different."

So that was really empowering.

Furthermore, one interview respondent identified that there were unexpected variables and relationships related to her goal that was unveiled because of the action research process.

The observation data was chalk full of educators creating measurable goals and making efforts to achieve those goals. Four presenters were not pleased with their action research outcomes because their results did not match their initial hypothesis. However, all four presenters did acknowledge the unfavourable results as a learning opportunity and had reflected on ways to improve. For instance, one of the presenters spoke to her process of removing numerical grades and using comments instead. Her student clientele were high-academic students who were uncomfortable with not knowing their numerical grade and the parents were equally as uncomfortable. Despite much of the research that they had read to support written feedback as superior to numerical feedback, they were not able to gain the support from their students or parents and had to adjust their action research plan mid-semester. Conversely, there were educators who were pleasantly surprised, and in some cases shocked, at their results. One of the presenters implemented a self-assessment tool in their classroom, and they were astonished at

how meticulous and critical the students were when assessing their own work. Additionally, the self-assessment tool created opportunities for teacher-student discussions that proved to be incredibly valuable to student growth.

There were two common threads that came up continuously in both the interviews and presentations. First, educators truly enjoyed challenging their practice despite it being, at times, uncomfortable. They enjoyed trying something new and determining the results of their project. Second, five interview respondents and 16 presenters all stated that they planned on sticking to their action research goals into the next school year. One presenter stated that they were happy with the results of their project and already knows what their next action research project will be. There was clear evidence that educators were continually reflecting deeply on their action research process and its effects.

Educator perceptions of the presentations. Overall, the most appreciated aspect of the action research discussed in the interviews was the opportunity to watch the presentations at the end of the school year. Because the school in which this study was conducted was so large, very often, educators were unaware of what was going on outside of their department. The presentation day, however, was an opportunity for educators to become aware of what others were doing in their practice, and it was a time to celebrate others' action research projects. All interview participants spoke to the value of watching their colleagues' presentations and were impressed at the commitment to lifelong learning, the diversity of action research topics, and the commitment to continuous improvement. On the other hand, three of the interviewees spoke about how not all their colleagues participated in or attended the presentations. One interview

participant assumed that the lack of participation with the presentations was because presenting was too stressful for their colleagues.

There were five comments on the survey that addressed the presentations; four of them were in support of the presentations, and one was not. The comment that was not in support of the presentations discussed how they were unaware of the purpose of the action research project and the thought of presenting to colleagues induced stress. On the other hand, one of the survey comments discussed how they enjoyed that the presentations made people accountable:

A supportive administration within the school is crucial to the success of the action research process. I appreciate that this was addressed consistently throughout the year and that teachers were held accountable for their research at the end via the presentation component. I believe this process reminds teachers of what it means to be "an academic" and shines a light on a trend of professional lethargy amongst teachers in Alberta.

Like the interviews, two of the survey participants enjoyed how the presentations served as a platform for colleagues to learn from each other and also create awareness of what was going on in other disciplines. The most surprising piece of evidence regarding the presentations was that one survey participant stated that they would not have collaborated or analyzed the data to the extent that they did if it were not for the presentations. The presentations were a motivating factor in analyzing their action research on a deeper level.

Time to complete action research. As highlighted in the literature, providing time for educators to work on action research is necessary. As a result, time was allotted for educators to work on their action research projects and it was mostly appreciated. One interview responded said that because time was allotted,

there was “no excuse” not to work on the action research project. Another interview respondent spoke to the value of having time:

[Action research] is quite a good option. It gives you a chance to pursue something in action, not just in theory, and I think that's the big thing. Too often, we're given the ideas but to be able to give time, to set aside time to, to put it into practical use and then try it out. That was, that was the big hit for me. I actually had the time to go and talk, talk to the Grade 9 [students] to actually look at how this program works for marking. Putting it into action and out of theory, that was huge for me.

It was clear in both the survey and interview data that many educators appreciated having formal time to work on their action research. However, one participant made comments about this time being “taken” by other initiatives. Further, some educators stated that they did not engage in action research because it was too time-consuming, despite having been provided dedicated time for the project. Two survey respondents provided solutions to this idea. One respondent suggested that action research should be completed in larger groups so that it can be more manageable time-wise. The other respondent stated that action research “has its place but is likely better left to administrators who have more time to do the research and in respects get paid to do so.”

Action research leadership roles. Understanding the role of leadership in the action research model is important. By and large, the action research initiative was implemented by the researcher, who was also the professional development representative for the school. The administration of the school was approached with this idea months prior to it being implemented, and they were onboard. There are two levels of leadership to consider when analyzing the data: the professional

development (PD) representative (informal leader) and the school administration (formal leaders). Four of the interview participants spoke about how the PD representative supported and rolled out action research. One interview respondent perceived action research as something that was often on “the backburner” and struggled to be motivated to do their action research project. She also mentioned that the delivery of the action research was abrupt, and there were many colleagues that felt this way because there were expectations and timelines associated with the action research. The other three interviewees spoke highly about the encouragement and support that the PD representative provided. One interviewee stated:

I think [the researcher] did a phenomenal job and, you know, initially when she had brought it up. I have to tell you that I was like, “Oh jeez. Like one more thing to do, we got another.” And then when I got into it was like, “Oh, okay. No, this makes sense. I am trying to my own research and improve.” And, she was great about being there for help.

Much of the data discussed how educators did need support with aspects of action research. For instance, requiring support about how to analyze data or how to access and apply educational research.

Summary

In summary, the findings of this chapter provide an examination of the extent to which educators perceive action research as having the capacity to facilitate engagement in TQS Competency 2. Through the observations, survey results, and interviews, educators were able to share their perspective on their engagement in planning, executing, and analyzing within their practice.

The quantitative data from the survey were analyzed using descriptive statistics, and the number of participants who either agreed or strongly agreed with each statement was reported. Understanding the quantitative data was supported by the qualitative data, which were triangulated. The qualitative data proved to be incredibly valuable to gain a deeper understanding. For example, 34% of educators agreed that participating in the action research process increased my awareness of emerging technologies to enhance knowledge and inform practice. The qualitative data provided concrete examples of what types of technology educators were using and their experiences with these technologies.

There were two highlights in the quantitative data. First, 68% of educators reported that action research enhanced their teaching practice. These data were supported by evidence during the presentations at the end of the school year. Some educators did not create or implement a new plan within their practice but rather identified ways to improve their teaching practice. A discussion of this disconnect will be presented in Chapter 5. The second highlight included that 53% of the educators were willing to participate in action research again. Overall, educators appreciated the time embedded in the schedule to work on their action research and found value in a process that was responsive to their professional needs. An unexpected finding overall was the value that educators found in the presentations at the end of the school year. Most educators appreciated learning what was going on in other educators' practice and perceived it as good use of time and learning experience.

All the data were not in support of action research. There were two consistent barriers of action research addressed consistently in the data: lack of engagement and time. While many educators appreciated and used the time, there

were other educators who did not recognize that time was embedded and available to use, and this is most likely directly related to those educators who did not buy-in. In the quantitative data, only 24% of educators agreed that participating in the action research process increased understanding of First Nations, Métis, and Inuit worldviews, cultural beliefs, languages, and values. There was also limited evidence in the qualitative data regarding this indicator. This summary of this indicator and the rest of the results, as well as a discussion of their implications, and recommendations for future research will be discussed in Chapter 5.

Chapter 5: Discussion

The purpose of this chapter is to present a summary of how the current research on PLD connects to the findings from Chapter 4. The discussion will address the study's purpose and research questions. Implications for educational practice and recommendations for future research in the area of professional learning and development (PLD) and action research will be presented.

This mixed-methods study investigated the extent to which educators perceive action research as having the capacity to facilitate engagement in TQS Competency 2, or engagement in “career-long professional learning and ongoing critical reflection to improve teaching and learning” (Alberta Education, 2018c, p. 4). The specific perceptions investigated included teachers' perceptions of the process of planning, executing, and evaluating a research-based process within their practice. The study included 59 educators in a Grade 10 to Grade 12 high school in Alberta, Canada. Of these educators, 38 presented the findings of their action research project, and qualitative data were collected in the form of observations. After the presentations, 38 participants completed a survey comprised of both qualitative and quantitative questions. Then, six educators were interviewed to gain a deeper understanding of results found from the observation and survey data.

Discussion of Findings

The focus of the research was on capturing educators' perspectives on whether action research facilitated engagement in the teaching quality standard (TQS) Competency 2 indicators. Educators' perceptions were gathered from observations, surveys, and interviews. Analyzing their viewpoints provided results showing their experiences with action research. Key findings will be presented to

address the six key findings from the educators' experiences and perspective throughout the action research process. The six key findings were derived from the six research questions as well as the educators' overall perceptions and experience of the action research process. Figure 3 displays the percentage of participants that agree with each statement.

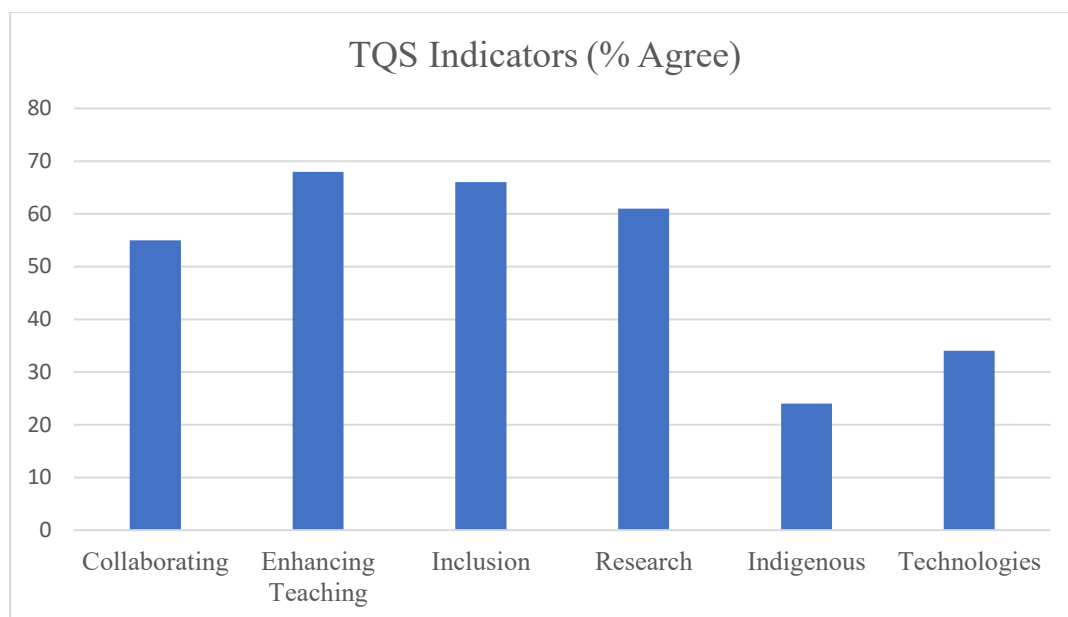


Figure 3. The percentage of survey participants who agree with each TQS 2 indicator.

It was determined that survey participants responses to the indicator regarding First Nations, Metis, and Inuit was statistically significant in comparison to the other TQS 2 indicators. A discussion about the key findings from each indicator and educators' overall perceptions and experiences is presented in the coming sections.

Action research provides opportunities for collaboration. The final key finding of this study was that there were many opportunities for collaboration within the action research model. The first step when promoting PLD with professionals is to create a healthy learning environment that promotes

“informality, mutual respect, physical comfort, [and] collaboration” (Knowles, 1972, p. 36). When the environment is rich, the learner will be a more active participant in return (Knowles & Bradford, 1980).

Of the 25 presentations, 5 (20%) were collaborative efforts. As a result, there were 18 educators out of the 50 (36%) who chose to work on their action research projects collaboratively with other educators in the school. Throughout the presentations, many of the participants spoke to the importance of interacting and collaborating with their colleagues to increase their professional capacities. Collaborating with colleagues included sharing resources, comparing data, creating common goals, developing common assessments, collaborating across disciplines, reflecting on practices, and having curricular conversations.

One action research project, for example, included 10 educators who chose to administer a pretest a couple of days prior to all summative assessments to review the material prior to the exam and reduce the number of retests. Each educator who collaborated compared the scores of the pretest and summative assessments to determine if there were any learning gains and differences in the scores. The educators did not compare their means by an independent *t*-test; therefore, understanding if the score were statistically significant is unknown. The educators generally noticed that the academic classes benefitted greatly from their action research process, while some of the non-academic classes did not take the pre-test seriously. This project is an example of a collaborative effort where the educators created a process and planned together, and after implementation compared and analyzed their results. When more educators actively engage in PLD, then educators can capitalize on the strengths and resources of their colleagues to develop professionally as well. Collegial relationships that focus on

PLD can happen authentically or through mentorship programs by partnering with a less experienced teacher with a veteran teacher (Ziemke & Ross, 2014).

Aside from the 20 educators who collaborated with their colleagues, some educators chose to collaborate with stakeholders outside of the school. For instance, some educators chose to collaborate with businesses, community members, post-secondary institutions, or educators from different schools. One qualitative action research project discussed transitioning students with complex medical and learning profiles after they graduate high school. Many students with complex needs spend much of their time in schools and understanding what opportunities are available to them in either the workforce or post-secondary. This educators' goal was to start conversations with parents and post-secondaries to create opportunities for these students to be successful. Although this educator did not collaborate with a fellow colleague, their action research was an example of collaboration.

In this study, 55% of educators either agreed or strongly agreed that action research enhanced their collaboration with others. Deciding to either work on an action research project with another teacher was at the discretion of the educator and this likely impacted their variance in responses. One challenge of PLD is that teachers are “reluctant to put themselves under the microscope and truly scrutinize the effectiveness of their efforts” (Guskey, 2009, p. 227). As a result, it is challenging to encourage educators to collaborate because not all educators are willing to change their practice.

Not all educators chose to work collaboratively with others. For some, their action research project was a specific, individual goal directly related to their practice. To encourage collaboration, there was scheduled time during embedded

PD time to promote collaboration with colleagues. On November 23, 2018, each educator from the school was assigned to a group with three other colleagues from different departments to discuss their action research projects. The *What? So What? Now What?* Protocol (Appendix B) was used to guide and facilitate the discussions. A document (Appendix A) outlining all the action research project throughout the school was provided to the educators. The document categorized each of the action research projects based on topics.

Additionally, on February 1, 2019, educators could fill out a template about their action research project. This Half-Way Check-In Form for Educators (Appendix C) was shared with the educators via Google Drive. The intent of the mid-point check-in was to create awareness of what educators and administrators were doing for their action research project. In turn, if administrators and other educators were aware of what is happening in the school, it might promote collaboration and increase support. In total, 18 different projects were shared on this document. Of the 18 projects, 16 projects were presented at the end of the year in June. Neither the collaboration time on November 23rd nor the shared Google document were discussed or mentioned in any of the interviews, observation, or survey data. Although the educators could choose to collaborate or not, many chose the former throughout the action research process.

Action research enhances teaching practices. Participating in action research seemed to enhance educators' teaching practice; this was the most agreed with survey item (68%) of the six TQS Competency 2 indicators. In this study, educators recognized the action research process as a tool to improve their teaching craft. Fullan and Hargreaves (2016) identify that when educators are engaged in solid PLD, the result is educators who are continuously learning, responsive to the

needs of their community, and are confident skillful leaders who can apply theory to practice. Therefore, it can be assumed that action research was effective PLD because there was evidence of educators improving their practice.

Action research is a cyclical process that includes planning, executing, and fact-finding (Lewin, 1946). Of the 25 presentations, 12 provided concrete evidence of how action research improved teaching practice. The other 13 presentations were largely focused on gaining knowledge about their programs or practice through reflection and data analysis. Therefore, it appears that educators in this study who gained more information about their practice, perceived it as enhancing their teaching practice. Ultimately, when teachers lack a depth of knowledge in their practice, they are keener to implement any new idea without fully understanding its implications on students learning. As defined by adult learning theory, teachers develop knowledge about their practice by trying new things and reflecting on the process (Timperley, 2011).

Action research is job-embedded. The most important finding of this study was that educators appreciated that action research is job-embedded. Job-embedded PLD facilitates learning that serves teachers to improve their pedagogical strategies to, in turn, improve student achievement (Darling-Hammond & McLaughlin, 2011; Hirsh, 2009). In other words, when PLD is job-embedded, educators respond to the needs of the students they are currently assigned to. Conversely, PLD sessions that are removed from instruction or outside of the school are examples of PLD that are not job-embedded (Croft et al., 2010).

Of the 25 presentations on June 21, 2019, 22 of the presentations were about job-embedded topics. These presentations were hyper-focused on improving the learning experience and student achievement of their students. A strong

example of a job-embedded action research project was an educator that surveyed their students to understand their perspectives of the TQS. For example, one item on their survey was: *A teacher builds positive and productive relationships with students, parents/guardians, peers and others in the school and local community to support student learning. List three ways that you think teachers can foster positive relationships in schools.* The teacher then summarized the top responses, which included: (1) Provide one on one help for students, (2) Know and respect who students are outside of academics, (3) Make personal relations with parents during parent teacher interviews, meetings, emails or calls home, (4) Create a positive, trusting, and welcoming environment, and (5) Be open-minded. From there, the educator improved their teaching practice and classroom environment based on student survey responses. This action research project was responsive to this educator's current students and was directly related to their needs.

Job-embedded PLD is further supported at the school level in a variety of ways. First, school leaders must emphasis on the importance of continuous, professional learning for all staff members (Croft et al., 2010). This is an area where the action research model in this study could be improved. Unfortunately, only 59% of the staff presented their action research projects. This lack of presentation sharing damaged the learning culture because it sent a message that continuous learning and improvement were not the focus. Second, job-embedded PLD is supported when instructional facilitators are identified (Croft et al., 2010). Fogarty and Pete (2010) agree that PLD is job-embedded when "support is visible, available, and accessible all day, every day" (p. 33). Within the school and division, educators were generally aware of who the learning coaches were and who had release time in their schedules to support teachers. The availability of

these learning coaches was not published until the end of the 2018-2019 school year. None of the participants spoke about using these learning coaches as a support for their action research projects. Advertising learning coaches at both the school and district levels along with their strength and availability is another improvement that could be made in the future.

Third and most importantly, job-embedded PLD is supported by student evidence (Croft et al., 2010). Most of the action research projects used student data to drive their decisions and inform practice. One critique of the data analysis of the educator was that it was not a refined process. For instance, none of the educators determined if the data was statistically significant or used coding strategies to analyze their data. Considering that 10 (26%) of the survey participants ($n = 38$) stated that they had a master's degree, it was disappointing that data analysis was not formally completed.

Action research decisions are evidence-informed. The next key finding of this study was that action research decisions were evidence informed. It is necessary to support PLD with evidence. Fogarty and Pete (2010) identify that “if schools are to replace ineffective practices with research-based, teacher-tested, proven best practices, there must be measurable results, or the efforts will never be maintained or sustained” (p. 34). In this study, action research facilitated evidence-informed processes in two ways. First, educators were focusing their action research process on an area of need within their practice, as educators were able to choose any topic. Within Alberta, this method is supported because educators have the autonomy to choose their own goals on the PGP.

Furthermore, educators were encouraged to find and review the literature on their topic. Educators were informed of utilizing the Alberta Teachers’

Association library as a tool to access literature. Then, on February 1, 2019, educators could outline what the literature supports their topic on the Half-Way Check-In Form for Educators (Appendix C). Of the 20 educators who completed the Half-Way Check-In Form for Educators, 90% referenced and cited educational research that related to their topic. Furthermore, 61% of participants either agreed or strongly agreed that participating in the action research process increased their capacity to seek, critically review, and apply educational research to improve my practice. Of the educators whose highest level of education was a master's degree, 92% either agreed that action research helped facilitate seeking, critically reviewing, and applying educational research.

Despite the strong evidence showing more than half of the educators accessed educational research, it was also clear that there were educators who did not. Some of the reasons reported regarding why they did not access the educational research were because it was too time-consuming, or they were overwhelmed with the amount of literature available and were unable to narrow their search down. Unfortunately, this lack of research meant that some educators' action research projects were not grounded in evidence. When educators take the time to review information regarding their action research topic, it can provide insights about the action research process and solutions (Alberta Teachers' Association, 2019).

Action research must be an ongoing process supported with time. For the action research process to be sustainable, it must be an ongoing process supported with dedicated time. When PLD is sustainable, teachers have the flexibility to make decisions about where they expend their energy (Darling-Hammond & Richardson, 2009; Fogarty & Pete, 2010). Also, there must be a PLD

goal identified with a long-term plan, regularly scheduled team meetings, many options for staff to participate, and guidance through collaboration and coaching (Campbell et al., 2016). Yoon et al.'s (2007) analysis of research determined that PLD of less than 14 hours did not have positive effects on learning. When PLD is implemented over a short period of time and then switched, the results of the initiative are never realized. (Boyle, While, & Boyle, 2004; Darling-Hammond & McLaughlin, 2011; Kennedy & Shiel, 2010; Pomerantz & Pierce, 2013). Yoon et al. (2007) argue that PLD experiences with the highest effects on learning was maintained over 6 to 12 months for 30 to 100 hours (Yoon et al., 2007). The action research process in this study was conducted over the course of 10 months and over 23 hours and 40 minutes were embedded into the workday. If given more time, this study should have been extended over the course of two years.

Throughout the data, time as a necessary resource was addressed frequently. Educators often engage in their PLD on their own time to make up for the lack of time during school hours (Campbell, 2017). According to the Alberta Teachers' Association (2012; 2015), ensuring that educators are continuously learning is necessary; however, it is also equally important to respond to issues of educator workload. Within this study it was important to set aside a time and place that is convenient for teachers to work on their action research (Knowles, 1975). This study included over 23 hours and 40 minutes of job-embedded time for educators to work on action research to respond to workload issues.

Time was a popular and polarizing topic in this study. Some educators were grateful for time offered while others believed that there was not enough time allocated. The educators who appreciated the time were those who engaged in the action research process and were excited about pursuing a goal. Other educators

viewed action research as “another thing to do,” and there was no time to engage in the action research process. One interviewee discussed their frustration about some educators not using the allocated time productively:

I was really disappointed professionally at the ones who didn't buy in [to action research] at all. Because people complain about PD all the time. And then someone comes along and goes, "Hey, your [professional development] can be on what you really think is important. And look, we'll give you time." And there are still people complaining and not doing it. That drives me crazy. If you're going to complain, then take some ownership. And there was a huge opportunity for that. And when we met as a group [in June], I was looking around going, "Wow. Like where's so-and-so? And so-and-so? I mean, they're usually the most vocal complainers." Action research had our own time to do things. It's great. But there's always those who do nothing. I think there needs to be accountability because what's happening with that time?

This quotation was supported by the fact that only 59% of educators contributed to action research presentations. It is unfortunate that some educators chose not to utilize the action research time throughout the school year. Keeping educators accountable to the time provided was outside of the researcher's responsibility. Additionally, understanding how educators used the time set aside for action research if they did not complete an action research project was beyond the scope of this study.

Implications for Practice

It is important to understand the implications for practice and whether action research is a viable PLD model. Campbell et al.'s (2016) extensive literature

review determined that effective PLD includes quality content that has a learning design and implementation process that is both supported and sustainable.

Typically, most PLD models fail because models are top heavy and based on a single, lecture style session (Guskey, 1986, 2000, 2002; Guskey & Yoon; Little, 1993). Conversely, action research is the opposite of the ineffective PLD models. According to Mertler (2019), action research can include all the characteristics of effective PLD.

In many ways, this study supports the idea that action research is a possible PLD model. A common concern with action research is the workload and time associated with the process. The action research model in this study provided time for educators to create a plan, implement their plan, and analyze their data. When educators create their own action research plan, it can align with their PGP goals and be specific and relevant to the work they do every day. Within this process, educators were provided resources to help them access educational research to ensure that their action research process was evidence informed. In addition to educational research, educators were using student outcomes to drive their educational research process. As educators were implementing their action research, they were actively learning about the effectiveness of various strategies, and then adjusting their practice accordingly. The responsiveness to both student and teacher needs proved to be a strong case that action research is also job embedded.

With areas of improvement to the model in this study, action research is a potential research PLD model. It is also important to understand action research is a possible model that aligns with the TQS Competency 2 indicators. As a reminder,

TQS Competency 2 is: “A teacher engages in career-long professional learning and ongoing critical reflection to improve teaching and learning.”

The most agreed upon statements regarding the alignment of action research with the TQS competencies were: *Participating in the action research process enhanced my teaching practice* (68% agreed) and *Overall, I found participating in the action research process valuable* (68% agreed). Recognizing that action research enhanced educators teaching practice and that educators found the action research process value are great findings. With some of the aforementioned changes, there is potential for action research to be a strong, sustainable PLD model that is responsive to student and teachers’ needs and aligns with the TQS Competency 2 indicators.

The statement that was statistically significantly lower than the other statements was: *Participating in the action research process increased my understanding of First Nations, Métis, and Inuit worldviews, cultural beliefs, languages, and values* (24% agreed). As outlined in Chapter 1, the inclusion of First Nations, Metis, and Inuit in the TQS document is new as of September 2019. Inclusion of this indicator is in responses to the *Truth and Reconciliation Commission of Canada: Calls to Action* (Truth and Reconciliation Commission of Canada, 2015b). The document includes 94 Calls to Action. The 57th Call to Action is focused on educator PLD:

We call upon federal, provincial, territorial, and municipal governments to provide education to public servants on the history of Aboriginal peoples, including the history and legacy of residential schools, the United Nations Declaration on the Rights of Indigenous Peoples, Treaties and Aboriginal rights, Indigenous law, and Aboriginal–Crown relations. This will require

skills-based training in intercultural competency, conflict resolution, human rights, and anti-racism. (p. 7)

Responding to the 57th Call to Action is a tall order for educators. One way to support educators with the 57th Call to Action is to follow the lead of the Indigenous specialists at both the district and provincial level. Most districts have district Indigenous experts and the Alberta Teachers' Association also has experts who have created presentations and activities to support educators' knowledge of Indigenous worldviews, cultures, and beliefs. Unfortunately, there is a disproportionate number of Indigenous experts in relation to the number of educators.

To avoid a heavy reliance on Indigenous experts, Ladson Billings (1995; 2014) suggests that teachers use *culturally relevant pedagogy* or *culturally sustaining pedagogy*. Ladson-Billings (1995) coined the term *culturally relevant pedagogy* first and it is based on three criteria: "(a) Students must experience academic success; (b) students must develop and/or maintain cultural competence; and (c) students must develop a critical consciousness through which they challenge the status quo of the current social order" (p. 160). In Alberta classrooms, this means that *all* students are expected to achieve academically, learn and respect other cultures, and view the world through a critical lens (Ladson Billings, 2014). The biproduct of culturally relevant teaching is an increased engagement and learning for *all* students – including students who are First Nations, Métis and Inuit.

When Ladson-Billings (1995) observed eight teachers who practiced culturally relevant pedagogy, there was very little similarities in their pedagogical practice. Rather, "the philosophical and ideological underpinnings of their practice,

i.e. how they thought about themselves and how they thought about others (their students, the students' parents, and other community members), how they structured social relations within and outside the classroom, and how they conceived of knowledge, revealed their similarities and points of congruence” (Ladson-Billings, 1995, p. 162-163). For example, these teachers were active in their communities and created communities of learners in their classrooms.

Culturally relevant pedagogy is a teaching philosophy rather than an approach. Unfortunately, many researchers have misunderstood culturally relevant pedagogy as a process; therefore, Ladson-Billings (2014) has rebranded *culturally relevant pedagogy* to *culturally sustaining pedagogy*. The difference between the two models to encourage the concept that culture evolves and changes and reflecting and reacting to these changes is important. For Alberta educators, both *culturally relevant pedagogy* and *culturally sustaining pedagogy* can increase the connection with Indigenous students as well as increase understanding of their worldviews, cultures and beliefs.

Another statement that had low numbers of participants agree was:

Participating in the action research process increased my awareness of emerging technologies to enhance knowledge and inform practice (34% agreed). Technology is constantly changing and evolving. Expecting educators to be aware of emerging technologies on top of their regular professional work can be overwhelming. For this reason, many districts and schools have educators who can be called on for classroom technology support. The division in which this study was conducted did have staff at the district level and there were also teachers with release time whose role was to focus on educational technology.

There are ways to strengthen this action research process for it to be a stronger PLD model. First, for PLD to be successful, it must be ongoing in duration. Yoon et al. (2007) determined that PLD has the highest effects on learning when it was maintained over 6 to 12 months for 30 to 100 hours (Yoon et al., 2007). In total, educators in this study had 23 hours and 40 minutes to work on their action research. Providing more job-embedded time for educators to work on their action research would have been beneficial. Second, through this study, educators could choose to collaborate with fellow colleagues or stakeholders outside the school. Depending on the nature of the topic or study, some educators sought out opportunities to collaborate better than others while others worked independently. Helping educators to recognize the various collaboration opportunities could have promoted more engagement. Third, PLD models must have supportive and engaged leadership. School leaders and administrators must model engagement in PLD and support staff by helping teacher's problem-solve and reflect on their practice.

Also, supporting teacher PLD at a leadership level is one of the most effective ways to increase student achievement. A meta-analysis determined the effect that different leadership styles had on academic and non-academic outcomes (Robinson, Lloyd, & Rowe, 2008). The researchers discovered that instructional leadership had the largest effect size on student achievement. Instructional leadership had an effect size of 0.42, whereas transformational leadership had an effect size of 0.11. The researchers decided to compare these two types of leadership because they were the two most predominant leadership styles in the literature. Instructional leadership ensures that classrooms have limited disruptions, high expectations for students, and clear learning objectives (Bossert, Dwyer,

Rowan, & Lee, 1982). Furthermore, Robinson et al. (2008) compared five leadership qualities and identified the effect sizes (ES) of each: (a) Establishing goals and expectations (ES = 0.42), (b) Resourcing strategically (ES = 0.31), (c) Planning, coordinating, and evaluating teaching and the curriculum (ES = 0.42), (d) Promoting and participating in teacher learning and development (ES = 0.84), (e) Ensuring an orderly and supportive environment (ES = 0.27). Leaders have the highest effect on learning when they actively engaged in and promote learning. Considering the effects that leaders can have on learning, this study will create space for administrators to engage in the action research process actively. The leadership in this study was supportive of implementing action research and supported any educator who asked for data or support. Conversely, only one administrator out of four presented an action research project. When the administration does not model active engagement in PLD, it often sends a message to the staff that there is no value in the PLD model (Robinson et al., 2008).

In addition to the school leadership, another level of leadership to consider in this study was the researcher. The researcher of this study implemented the action research process, created the plan to embed time for educators to work on their action research, supported staff with accessing literature and analyzing data, and completed an action research project of their own. There were challenges associated with being a teacher leader. Many of the educators needed support about the action research process, understand how to access educational research, and how to analyze data. Ensuring that educators are well-equipped to understand and analyze data both from research and in practice is necessary to the field of education. This responsibility should lie on the shoulders of the post-secondary

institutions. Pre-service educators should have the knowledge and training on how to make evidence-informed decisions.

Teacher leaders can have the support of their administration, but they cannot mandate their colleagues to do work, despite being the professional development coordinator. Also, rolling out this process takes a significant amount of time and energy. Creating a committee or team to support this process would be beneficial. Finally, although 59% of the educators ($n = 59$) did participate, there could have been more engagement if the process had been facilitated by the teacher leader and administration. One of the interviewees spoke to the teacher leader/researcher's role during the action research process:

The cornerstone of any successful paradigm shift is the facilitator/mediator/encourager. Ours was [the researcher]. She endured much caustic commentary but held true to her theory, knowing that it would pay off for those willing to authentically participate. Any school engaged in action research requires that selfless leadership.

Although some educators were fully engaged and felt supported through the action research process, this was not a consistent narrative for all the participants in this study. In total, there were 20 educators (34%) who did not engage in the action research process. There are two ways to overcome this issue. First, creating a collaborative action research plan with the whole school over the course of a school year can increase engagement. Second, having instructional leaders who are able to either promote, lead, and/or participate in action research is one way of encouraging participation in action research (Alberta Teacher's Association, 2019).

Limitations of the Study

Despite measures taken to limit researcher bias and establish validity, this study was not without limitations, which affects future research. These limitations also limit the broad generalizability of this work.

First, there were limitations specifically about the data collection process and instruments. The purpose of this mixed-methods study was to understand the educators' perceptions of action research; therefore, the participants self-reported their perceptions in the surveys and interviews. Participants self-reporting accuracy increases when the instrumentation is focused, based on a specific context, is retrospective, and if the participants complete the instrument on more than one occasion (Kozioł & Burns, 1986). In this study, the instrument was focused on the action research process and was completed retrospective to the action; however, the instrument was not focused on one specific context, and the participants only completed the survey once. Despite both the surveys and interviews being anonymous, there is potential that the responses were not honest because they chose answers that are socially acceptable (Mills & Gay, 2015). For instance, Additionally, the surveys are responses subjective because the participants' self-reported. For example, one of the survey questions was: *Overall, I found participating in the action research process valuable*. How one educator perceives the word *valuable* in their professional context might be different than another educator. Also, although the survey and interview instruments were peer-reviewed by nine doctoral students to increase reliability and validity, they had not been tested in other published studies previously.

Second, the number of participants in this study is a limiting factor.

Although the sample for this study was purposive, it was a sample of convenience

and small. There were 59 possible educators who could have presented and taken the survey; however, only 40 participants (69%) contributed to presentations, and only 38 participants took the survey. These numbers speak in and of itself to the nature and desire to participate in the action research process. Unfortunately, understanding the perceptions and experiences of all educators in this school was not captured. Also, another consideration is that those who chose to be interviewed were most likely more engaged and might not represent the opinions and perspectives of everyone involved. The number of participants in this study overall is limiting when placed within the larger scope. A replication of this study with a larger base of participants would be useful in adding to, validating, or invalidating these findings. Also, all the participants are from the same school; therefore, generalization is limited to the educators who participated in action research in this district.

Third, although it was beyond the scope of this study, understanding the variance based on roles in the school might affect how some responded. For instance, the term educators referred to teachers, counselors, and administrators because all had the opportunity to engage in the action research process and maintaining their anonymity was important. The nature and expectations of these three roles are different, as well as their perceptions and experiences. For example, none of the administrators had face-to-face teaching assignments in their schedule. Therefore, responding to the questions *Participating in the action research process enhanced my teaching practice* would have a different impact in comparison to someone in a more traditional teaching role.

Fourth, though all the participants of this study engaged in the action research process at the same school for an entire year, both their previous teaching

and education experience differ from participant to participant. Some educators had previous experience with action research through the Alberta Initiative for School Improvement (AISI); therefore, their understanding of how to implement an action research project was more robust compared to those who did not. Additionally, there are different understandings and perceptions about professional development and/or learning. Understanding these preconceived notions was beyond the scope of this study; however, some were potentially disengaged from the beginning.

Fifth, despite measures to increase dependability and credibility, there were limitations because of both interview and observation bias. The interviews were conducted by an accredited volunteer who maintained poise and composure during the interviews and did not contribute or lead respondents to answer a specific way. Additionally, the interviewer was not currently associated with the school or district. The interviewer was and still is in a formal leadership role in education, and this may have affected interviewee responses. The observations of the presentations, on the other hand, were conducted by the researcher, who was also a colleague of the participants. The observer was disciplined during the observation process and used the same observation form for each presentation; however, the relationship between the presenters and observer may have been influential in how some of the observation notes were documented. Fortunately, this study did rely on triangulation to ensure that any observations documented were backed by other data sources.

Implications for Future Research

The goal of this work was to investigate the extent to which educators perceive action research as having the capacity to facilitate engagement in TQS

Competency 2, or engagement in “career-long professional learning and ongoing critical reflection to improve teaching and learning” (Alberta Education, 2018c, p. 4). More specifically, this study sought to understand teacher perceptions of the process of planning, executing, and evaluating a research-based process within their practice. For this study, the data collection was concentrated over the period of one and a half months for a ten-month action research process. Collecting data throughout the course of the school year to better understand how educators used the allocated time would be a potential future study. Also, identifying the educators who were less or not engaged in the action research process and capturing their perceptions would help to identify any barriers in the action research model. Educator engagement could also be measured in private school where educators do not have a continuous contract. The results might vary in comparison to this study where many of the educators have continuous contracts.

Also, this study was only conducted in one school. Creating an experimental design study where educators were randomly surveyed based on their experiences would increase generalizability and an understanding of the action research model from multiple perspectives. It would also be beneficial to understand the different perspective and opinions from only teachers, only counselors, or only administrators. Understanding the complexities, benefits, and barriers within each role would increase an understanding of strategies better support participants in the various roles.

Another future research study could assess educators’ readiness to engage in action research. Understanding how prepared educators are for action research and understanding how they gained skills to be successful in action research might shed light on how to increase action research success for more in the future. Within

the same vein, it might also be interesting to identify ways to support educators prior to engaging in the action research process. Furthermore, the role of the teacher leader was a complex role in this study. Future research might explore the effectiveness of the action research under different styles of leadership. Or a future study could be an ethnographic study of the PLD leader to understand the experience of implementing the action research process with educators.

Furthermore, future research could have a team of researchers collecting and analyzing the data. A team of educators would eliminate any biases or preconceived notions. Also, the observation data would be more robust because there would be more notes available. Also, the interview data proved to be incredibly valuable for this study. Interviewing more participants with a broader range of experience and perceptions would provide more depth to the data. Finally- and most importantly – understanding how action research impact student achievement is another area to explore.

Conclusion

There are many potential PLD models in education. This study proved that action research is a potential PLD model. Within the action research model, educators plan, implement and analyze data within their practice. Through this model, educators were able to facilitate engagement in TQS Competency 2, or engagement in “career-long professional learning and ongoing critical reflection to improve teaching and learning” (Alberta Education, 2018c, p. 4). Within TQS Competency 2, there are indicators for educators to achieve the competency and the data from this study was analyzed based on these indicators.

Of the TQS 2 indicators, a Tukey post hoc tests revealed that the indicator *enhancing understanding of First Nations, Métis and Inuit worldviews, cultural*

beliefs, languages and values was statistically significantly lower than the other indicators ($p < .001$). In addition to the TQS 2 indicators, 68% of survey respondents agreed with the statement *Overall, I found participating in the action research process valuable*; 63% of survey respondents agreed with the statement *Participating in the action research process met my professional learning needs*; and 53% of survey respondents agreed with the statement *I plan to participate in an action research process again*.

The quantitative data were better understood because of the qualitative data. The key findings in order from most important to least important include: (a) action research must be job-embedded, (b) action research decisions were evidence-informed, (c) the action research process must be an ongoing process supported with time, (d) action research enhances teaching practices, and (e) collaboration supports action research. Finally, action research is an effective PLD model for educators to achieve their professional goals.

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Appendix A – Action Research Project by Category (November 23, 2019)

Assessment

- Correlation Between Objective Self-Assessment and Student Achievement
- Art 10 Self & Peer Assessment to Increase Self-Criticism in Future
- Formatively Assess Students Post-Exam to Identify Variance Between Quiz and Exam Scores
- Variety of Assessment Options to Increase Student Engagement
- Assessment Strategies to Reduce Cheating and Promote Mastery of Knowledge
- Correlation Between Outcome-based Assessment and Learning, Understanding and Retention

Attendance

- Feeder School Attendance Correlation
- Decrease Apathy and Increase School Attendance
- Increase Student Attendance

Cross-Curricular

- STEM Collaboration between Science 10 and Math 10C
- Increase Healthy Eating Options in Science 24
- Improve Metric and Imperial Understanding in CTS Courses

Empathy & Religious Education

- Increase Empathy and Forgiveness by Embedding Humanness and Sacramentality
- Increase Student Engagement in Religion Hours
- Increase Empathy in Social & Religion and Refusing Acceptance or Silence About Injustices

Grade Nine to Grade Ten Transition

- Correlation Between Grade 9 and Grade 10 Math Scores
- Identify Differences in Single Sport Athletes or Multi Sport Athletes for Incoming Students
- Preparedness for Math 10C from Math 9 to Math 15-5 Transition

Human Connections

- Increase Student Connections to the School Through Restorative Justice
- Mental Health Focus to Increase COMPASS Results
- Engaging Students in Planning through Positive Student-Adult Relationships
- A Reflective Process - Teacher Identification and Community Perceptions
- Social Interactive Behaviours Within Two Diverse Peer Groups

Increase Student Voice

- Utilizing Journals and Technology Visuals to Increase Student Voice and Critical Thinking
- Implementation of “Math Talks”

Languages

- Strategies to Encourage Students to Embrace the French Language
- ELL and Literacy Strategies to Increase Students Knowledge of Safety in Construction
- Increase Interest in Novel Study (*A House in the Sky*)
- Increase Oral Engagement in French

Retention of Knowledge

- Reteaching and Relearning Before Unit Exams
- Whiteboard Effectiveness for Key Terms and Concepts
- Alter the Sequence of Units to Increase Retention of Knowledge in a Particular Unit of Study
- Increase Cosmetology Theory Knowledge - *GJ*

Specialized Program Improvement Plans

- Identifying Effective Inreach Programs and Strategies for Implementation and Monitoring
- New Activities for Outdoor Education
- Increase Knowledge in Computer Science
- Understanding the Effectiveness of Dual Credit and Post-Secondary Impact Programs
- Authentic Learning Experiences in Financial Management

Student Retention in Specialized Programs

- Retaining Students in Fine Arts & Identifying Academic and Fine Art Program Evaluation
- Retaining Students in French Immersion
- Retaining Students in Spanish Courses
- Retaining Students in 20 & 30 Level CTS Courses

Student Work Habits

- Increase Homework Completion
- Authentic Environment with Natural Consequences to Increase Student Work Habits Pre-Graduation

Technology Implementation

- Google Classroom for Notes and Formatives
- Net Effect of Voice-Thread on Student Essay Confidence

Appendix B– What? So What? Now What?

Step 1 (5 minutes)

1. Each staff member will write down the answer to the following questions:

What?

- What did I do?
- What am I working on?

So What?

- Why is this important to me?

Step 2 (15 minutes per person)

1. The first presenter explains what they've written to their group members and take notes/write questions.
2. Group asks 2 or 3 clarifying questions (only).
3. Individuals in the group talk amongst themselves, while the presenter listens in to the conversation, taking notes and considering new insights and possible next steps. The presenter is silent during this step. The group takes up each of the following questions in some way, along with any other focused discussion the presenter has asked the group to have.
 - a. "What I heard the presenter say was..."
 - b. "Why this seems important to the presenter is..."
 - c. "What I wonder is..."
 - d. "The questions this raises for me are..."
 - e. "What this means to me is..."
 - f. "What I might suggest is..."
4. Reflection by the presenter to the group –Answer the question: Now What?
5. Repeat for each participant in the group. (Approximately 15 minutes per person)
6. Debrief.

Appendix C – Half-Way Check-In Form for Educators

<p>At least three research questions:</p> <p><i>Identify guiding questions or sub-topics that you will focus on this semester.</i></p>	<p>What does the field say about your topic?</p> <p><i>Use the ATA ERIC database, Google Scholar, or contact the ATA library for articles. Meta-analysis or peer-reviewed journal articles are typically the best.</i></p>
<p>What have you witnessed about your research so far?</p> <p><i>Provide some insight about what you have noticed in your practice and where you think this research is going moving forward. Identify strengths, weaknesses, or general observations that will guide you moving forward into next semester. If you decided to change topics, then provide some insight as to why you changed.</i></p>	<p>What supports do you require to be successful?</p> <p><i>Be honest here. Some examples might include: peer evaluations, mentoring, coaching, external expertise, collaboration, time, resources. The more information provided, the better we can support one another in a networked improvement community.</i></p>
<p>How would you like to share your learning and action research findings from this year?</p> <p><i>What is your style? Be creative!...and always be honest about what you are and are not comfortable with.</i></p>	

Appendix D – Observation Notes Template

<p>Action Research What is the action research project? What is the driving purpose behind their action research?</p>	
<p>Field Notes <i>What are people doing? What are they trying to accomplish? How, exactly, do they do this? What specific means and/or strategies do they use?</i></p>	<p>Analytic Memos <i>How do members talk about, characterize, and understand what is going on? What assumptions are they making?</i></p>
<p>Reflective Questions <i>What do I see going on here? What did I learn from these notes? Why did I include them?</i></p>	

Appendix E – Survey

Action Research Survey

This survey is part of a research study conducted by Megan St.Croix as part of the University of Portland School of Education doctoral program. I hope to learn about the extent educators perceive action research as having the capacity to facilitate engagement in “career-long professional learning and ongoing critical reflection to improve teaching and learning” (Alberta Education, 2018, p. 4). If you agree to participate, please complete the survey below. If you do not want to participate, please do not complete this survey.

All data will be kept in a password protected computer without any link to your name. There are no anticipated risks to your participation in this survey. Participating in this research may help improve the action research process, and the results may be published anonymously in a conference or journal paper. However, I cannot guarantee that you will personally receive any benefits from this research. Your participation is voluntary, and your decision whether or not to participate will not affect your relationship with myself as a colleague, with Ecole Secondaire Notre Dame, or with Red Deer Catholic Regional Schools. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time without penalty.

If you have any questions about the study, please feel free to contact Megan St.Croix at boulange16@up.edu or my faculty advisor Nicole Ralston at ralston@up.edu. If you have questions regarding your rights as a research subject, please contact the IRB (IRB@up.edu).

Sincerely,



Megan St.Croix

For each item listed below, please rank the **impact of participating in the action research process**. (circle one) Then, please elaborate with a specific example.

Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. Participating in the action research process enhanced my collaboration with others.	1	2	3	4	5
2. Please describe, if applicable, a specific example of how participating in the action research process increased your collaboration with others.					

Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
3. Participating in the action research process enhanced my teaching practice.	1	2	3	4	5
4. Please describe, if applicable, a specific example of how participating in the action research process enhanced your teaching practice.					

Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
5. Participating in the action research process increased your capacity to support student success in inclusive, welcoming, caring, respectful, and safe learning environments.	1	2	3	4	5
6. Please describe, if applicable, a specific example of how participating in the action research process increased your capacity to support student success in inclusive, welcoming, caring, respectful, and safe learning environments.					

Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
7. Participating in the action research process increased my capacity to seek, critically review, and apply educational research to improve my practice.	1	2	3	4	5
8. Please describe, if applicable, a specific example of how participating in the action research process increased your capacity to seek, critically review, and apply educational research to improve practice.					

Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
9. Participating in the action research process increased my understanding of First Nations, Métis, and Inuit worldviews, cultural beliefs, languages, and values.	1	2	3	4	5
10. Please describe, if applicable, a specific example of how participating in the action research process increased your understanding of First Nations, Métis, and Inuit worldviews, cultural beliefs, languages and values.					

Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
11. Participating in the action research process increased my awareness of emerging technologies to enhance knowledge and inform practice.	1	2	3	4	5
12. Please describe, if applicable, a specific example of how participating in the action research process increased your awareness of emerging technologies to enhance knowledge and inform practice.					

Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
13. Overall, I found participating in the action research process valuable.	1	2	3	4	5
14. Participating in the action research process met my professional learning needs.	1	2	3	4	5
15. I plan to participate in an action research process again.	1	2	3	4	5
16. Is there anything else we need to know about what it was like to participate in the action research process? Or, is there anything else you would like to share with us regarding your experience?					

17. Number of Years of Teaching Experience (including this year):

18. Courses Taught This Year:

19. Highest Level of Education Obtained:

I would like to learn more about your experience and perceptions of the action research process within a professional learning model. Regardless of whether you did or did not enjoy the action research process, gaining a better understanding of your experience and perception is the goal, and all feedback is valuable. If you are interested in participating in a 20 minute phone interview regarding your action research experience and process, please include your home/cell phone number _____ . Please note that your interview and identity will remain anonymous and confidential, as only your phone number will ever be known.

Appendix F – Interview Questions

1. Tell me about your action research project. What was it like to participate in your action research project?
2. I noticed on survey question _____, you rated/answered _____. Can you tell me why you responded this way?
3. Tell me about the action research presentation day. To what extent did you learn from your colleagues' research? What, if anything, did you learn and why?
4. To what extent did participating in this action research project meet your professional learning needs? How? Why?
 - (as needed) According to your experience, is action research a potential option for professional development? Why/Why not?
 - (as needed) Would you be able to share some examples of how participating in action research has impacted your professional practice?
 - (as needed) Did participating in the action research process impact you in any other way?
5. What was the most rewarding aspect of your action research project?
6. What were the challenges you encountered when conducting your action research project? What supports would have been helpful to you to counteract these challenges?
7. Do you plan to share your action research findings with other professionals? Why/Why not? How?
8. How, if at all, do you plan to use action research process in the future?
9. Is there anything else that you would like to share about action research or teacher learning in schools?

Appendix G – Final Action Research Projects Presented (June 21, 2019)

Presentation Number	Action Research Project	Number of Educators
1	Outcome-Based Assessment in Mathematics	1
2	Google Classroom Implementation in Physics	1
3	Engagement in Religion Hours and Class	1
4	Self-Assessment in Art	1
5	In-Reach Program for At-Risk Students	1
6	Survey Development & Offsite versus Onsite Seacan Project	1
7	Student Perspective of Landscaping Course	1
8	Project-Based Learning in Design Studies and Student Retention in Program	1
9	Standards and Assessment in Cosmetology	1
10	Removing Multiple Choice in Science and Math	1
11	Effects of Pre-Unit Exam Administration on Summative Grades and Understanding	10
12	Correlation Between Fine Arts and Students Perceived High School Experience	2
13	Analyzing Physical Education Enrollment	1
14	Google Classroom Implementations in Science and Math	2
15	Restorative Practices	1
16	Retention Rate in French Immersion Program	1
17	Mental Health Survey Results from Year to Year	4
18	Using Screencastify as Assessment tool in English & Grade 9 and High School Publication Partnership	1
19	Long Range Plan Change in Biology	1
20	Identifying Barriers and Opportunities for Students Transitioning Out of Foundations Programs	1
21	STEM Collaboration in Grade 10	2
22	Spanish Retention Rates	1
23	Induce More Creativity into the Writing Process	1
24	Student Perspectives of Teaching Quality Standard	1
25	The Single iPad Classroom	1