BC TEACHERS' EXPERIENCES WITH THE LEARNER, ENVIRONMENT, INSTRUCTION, CURRICULUM (LEIC) PLANNING TOOL : A MIXED-METHODS STUDY

by

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ABSTRACT

The LEIC is a FASD planning tool, guided by a neurodevelopmental approach to planning and endorsed by the Provincial Outreach Program for FASD. The research in this study explores the lived experiences of six B.C. teachers as they have used the LEIC in past practice and reflect on future use. This mixed-methods study also looks at data gathered in a cross-sectional survey design where a further 27 teachers responded to questions about the LEIC. The findings indicated that the teachers felt that the tool was a useful document however, certain factors inhibited comprehensive and effective use in some cases. The data suggested that frequency of use and bi-modal training methods increased effective practice as well as depth-of-understanding in planning for a student with FASD.

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Chapter 1

Introduction

There is a paradigm shift in education and British Columbia educators are increasingly focusing on an inclusive education system that provides an environment in which there are intellectual, personal, and social purposes for all students. All students should include those with a diagnosis of Fetal Alcohol Spectrum Disorder (FASD). FASD is a term used to describe a neurodevelopmental disorder that is the result of prenatal exposure to alcohol. In BC, diagnosis of FASD includes a complex physical and neurodevelopmental assessment by a multi-disciplinary team. Currently the waitlist for an assessment is approximately 12-18 months. Time delays can be exacerbated by the often-needed requirement of confirmation of prenatal exposure to alcohol. This disability often includes stigma for the individual with the diagnosis as well as for the mother or the family. Due to the complex neurodevelopmental and physical difficulties associated with FASD, students with an FASD diagnosis often require additional supports in order to maximize success.

The Provincial Outreach Program for FASD (POPFASD) was established by British Columbia's Ministry of Education in 2006 and has the mandate to increase educator and district capacity to meet the learning needs of students with FASD. Current research, ideas, strategies, training, and resources are primarily shared through online training courses, face-to-face workshops, and webinars as well as on the POPFASD website. Three teacher consultants share FASD information province-wide. They are supported by District Partners who facilitate the dissemination of information. These District Partners sometimes actively participate in the information sharing; for some this

is part of the regular roles and responsibilities and for others, they volunteer their time to support POPFASD. There are currently 80 District Partners supporting the 63 public school districts as well as the Catholic Independent Schools – Vancouver, Catholic Independent Schools – Nelson, Society of Christian Schools in BC, and First Nations Education Steering Committee (FNESC). The program is overseen by an eight-person steering committee.

Curriculum-based evaluation (CBE) is a system in which educators gather assessment data in a structured way and then use this information to inform teaching practice. It is not a single test and it is not a tool used to inform eligibility for categorization or labelling; rather, it is a process. One of the key resources developed by POPFASD in 2006 was the LEIC planning tool (LEIC) (see Appendix A). LEIC stands for: L - Learner, E – Environment, I – Instruction, and C – Curriculum. This tool was adapted and then modified from the RIOT/ICEL matrix, a CBE conceptual framework. This framework guides a thorough problem analysis, identifying strengths and needs of the learner by systematically reviewing existing records (R), interviewing (I), observing (O), and testing, informally and/or formally (T). Four domains are also considered, instruction (I), curriculum (C), environment (E) and the learner (L) (Harlacher, Sakelaris, & Kattelman, 2014).

POPFASD's purpose for introducing and sharing the LEIC tool with educators is to provide a systematic planning framework that can be used to create a snapshot of the learners academic and personal strengths and needs, to identify the expectations placed upon the learner, the requirements of the brain in order to achieve expectations, and the possible primary disabilities that may impede the achievement of expectations as well as

the possible secondary characteristics that may be evident as a result of the "poor fit" between expectations and disability. Primary disabilities are those disabilities that reflect the underlying brain disability or neurodevelopmental damage and secondary disabilities are challenges which can be reduced or ameliorated through appropriate interventions or strategies that support the primary disability (Malbin, 2002; Streissguth, 199). Finally, the planning tool guides the educators through the process of creating appropriate accommodations with considerations for the environment, instruction, and curriculum. Rather than having the LEIC be completed by one teacher, POPFASD encourages the team supporting the student to complete the document together. The team may consist of the classroom teacher, resource teacher, education assistant, school administrator, as well as other professionals involved in a student's education. Parents/guardians and the student (if appropriate) are also important in the planning process.

The LEIC is divided into three sections, the first section examines the learner's strengths and needs using both formal and informal assessment (RIOT – Read, Interview, Observe, and Test). The second section identifies the expectations of the learner within the school setting, the expectations of a student's brain, and then possible primary disabilities are identified. A comparison is made between disability and expectation and then secondary disabilities are listed along with information about the setting where these occur. Finally, the third section identifies environmental, instructional, and curricular strategies that will support the learner's primary disabilities and thus reduce the likelihood of secondary challenges occurring.

One of the strengths in the LEIC is that it identifies student's strengths, it focuses on neurodevelopmental reasons for why certain behaviours may be occurring, and it also

focuses attention on the instructional, curricular, and environmental elements that the teacher is introducing into the learner's education setting. Guiding questions are available to support the completion of each of the elements of the LEIC (See Appendix B).

Significance of the Research

POPFASD has been sharing and encouraging the use of the LEIC for approximately 10 years with only informal data collection and collation to support its perceived usefulness. Any systematically collected information is gathered in a survey format; typically only one question relates to the LEIC. The survey uses a Likert scale. There are also general short-answer questions where anecdotal information can be gathered. These questions do not specifically address the LEIC and the surveys are given as part of workshop or online course feedback. The information is then collated and stored. Continued or long-term use of the LEIC as well as perceptions, benefits, and/or experiences with the tool have not been systematically assessed in any way, either formally or informally.

A cursory view of the data indicates only minor changes have been made to the LEIC and those were primarily formatting. It is estimated that approximately 18 hours per month is spent on the sharing of the LEIC tool, therefore, it is important that research be undertaken to identify what educators' experiences are with the LEIC, to see if it achieves its purpose, and to identify any changes to the format, process, and sharing of the LEIC that may be worth consideration. I focussed my research on understanding the lived experiences educators have with the LEIC once they have left a POPFASD workshop or completed an online course.

After extensive searches, there appeared to be no research on the use of the LEIC planning tool or the RIOT/ICEL framework/matrix from which the LEIC evolved. It was apparent there is a dearth of literature therefore this study was worth completing.

Purpose of the Study and Central Research Question

POPFASD spends approximately 18 hours each month sharing the LEIC planning tool with BC educators; however, very little data exist as to the efficacy and use of this tool—whether teachers use it, do not use it, why they do or do not use it, how they have adapted it or changed it to suit their use, whether it is used by teams or individuals, classroom teachers, or resource teachers. There is no research in the professional literature on the LEIC tool. A convergent mixed-methods design was used and involved the separate collection of quantitative and qualitative data with the merging of the results to examine the extent to which the qualitative data were confirmed by the quantitative data and vice versa. The purpose of this study was to understand the use of the LEIC planning tool by BC teachers.

In this study, survey data were used to gather information from a larger population than the data gathered through qualitative interviewing. Creswell (2015b) states that survey designs are appropriate when looking for trends or beliefs of a population. With the lack of professional research it was deemed important to gather information on the attitudes, beliefs, and practices of BC teachers with the LEIC. One-on-one interviews were conducted to explore the lived experiences of BC teachers with the LEIC planning tool. Interviews provided more in-depth and detailed data (Creswell, 2015b).

The central research question was: What are the lived experiences of BC educators with the LEIC planning tool? I used a semi-structured interview format to guide the process of gathering information about the lived experiences of six BC teachers. I looked for possible reasons for the use or lack of use of the LEIC. To direct the survey data collection I asked questions such as:

1. Were there specific grades that used the LEIC more readily?
2. Did enrolling (classroom teachers) and non-enrolling (specialist) respond differently to questions about the LEIC?
3. Did frequency of use impact response?
4. What aspects of the tool did teachers find more useful or less useful?
5. Did the type of training make a difference? Or multiple trainings?

I also asked a series of open-ended, Likert scale questions to gather information about the various aspects of the tool including format-type questions, use questions, and understanding questions.

Researcher Context

My interest in carrying out research on the LEIC planning tool stems back to my work as a support teacher. In this role, I had to work with and coordinate school teams in their planning for students with special needs. This often involved the use of a variety of different planning tools, some which were Ministry of Education mandated, like the Individual Education Plan (IEP) and some that came from the district I was working in. This included forms and frameworks such as learning support plans, student profiles, school-based team tools, and extended school-based planning forms, to name a few. In some cases, schools and support teachers could decide which tools they wished to use or

adapt. The IEP is the only provincially mandated planning document and the format for this document is decided at the district level. There was repetition in forms and a common concern I heard special educators and classroom teachers share is that there is an over-emphasis on what seemed to be bureaucratic forms and an under-emphasis on the most important aspect of planning: understanding and developing the best educational environment for the student.

In 2015, I took POPFASD's six-week online course and was re-introduced to the LEIC tool. I had, at the time, used the tool a few times as I had previously taken a workshop hosted by POPFASD. The coursework for the six-week course included background information on FASD, an introduction to effective strategies and accommodations, and an introduction to the LEIC planning tool. We were required to use this tool to either plan for a student we were working with or we could use a case study that was provided. I chose to use the tool to plan for a student who was in my class at the time. The student was struggling to cope with the daily expectations of the classroom. He had no formalized assessments and no IEP as he had no special education designation, although he did have a learning support plan to support his learning needs. This reintroduction brought to light the value of the LEIC planning tool. Unlike many of the planning tools and the IEP in particular, it focuses on understanding the learner first and foremost, focuses on utilizing the learner's strengths in planning, and emphasises a neurodevelopmental approach to planning and teaching. The second section of the tool highlights some of the expectations that are being placed on the learner and it then leads the educator to consider the demands placed on the brain, as well as considering the possible disabilities of the learner that may be affected by a neurodevelopmental

disability. It then identifies three critical areas to consider in developing accommodations—environment, instruction, and curriculum. It acts as a good vehicle for team discussion about a student and allows for a systematic review of assessment and of functional domains, thus enabling a strategic, problem-solving approach. This tool incorporates neurodevelopmental and strength-based teaching approaches as well as an underlying principal supported by Ecological Systems Theory. It was immediately apparent to me that the LEIC did a better job of planning for a student than the BCeSIS IEP that was in place at the time. It was also a tool for planning unlike District #57's Learning Support Profile and the school-based learning support plan, both of which were more about documentation than problem-solving.

In the fall of 2015, I changed my teaching position and became a full-time teacher consultant with POPFASD. I began to wonder how and when the LEIC tool was being used, what was working for educators, and what was not. Part of my role was to share the LEIC tool, a tool I had only used a few times, with other educators. As a new teacher consultant I spent approximately 10 hours a month sharing, focusing, explaining, or preparing to work with the LEIC tool; as I have gained experience, this time has reduced and it has since been estimated that the three POPFASD teachers collectively spend approximately 18 hours a month preparing for LEIC workshops, giving instruction, and evaluating LEIC assignments; this is a significant financial investment.

I have observed many support teachers, classroom teachers, and other educators struggle with the many forms; not understanding their purpose, feeling overwhelmed by the number that need to be completed, and feeling that all the forms were not helping the student. I have seen many teachers fill them out "just for the sake of filling them out".

In the brief nine-month period I have been a teacher consultant I have wondered how many of the teachers I have shared the LEIC form with have set it aside. If they have, what caused them to do this? Did they like the tool when they initially learned about it? Did they keep using it? What parts of the tool did they find useful? What parts would they like to see changed? Why did they keep using it?

Theoretical Orientation

This thesis draws on the theoretical perspective of Bronfenbrenner's (2005) Ecological Systems Theory which is a socioecological paradigm used to describe and explain the reciprocal relationship between human beings and their environment over their lifetimes**.** Critical to Bronfenbrenner's theory is the dimension of time and the fact that development involves outcomes at a particular point in time as well as characteristics that develop over time. According to Bronfenbrenner's Ecological Systems Theory the ecological environment consists of five subsystems that include the *microsystem*, *mesosystem*, *exosystem*, *marocsystem*, and *chronosystem*. In visual models the circles are concentric and they progress outward from the microsystem**.** The *microsystem* is the system "closest" to the individual and the properties of this system are the most immediate to the individual which means that events in this system are likely to have the most potent effect, particularly if the individual is present. The *microsystem* includes properties such as the student's gender, age, health, and education as well as family, school, neighbourhood, peers, work, and church. The *mesosytem* represents the relationship or connection between two or more *microsystems* for example the connection between family and school, family and neighbourhood, or school and work with the student becoming an active participant in these groups. The third system, the *exosystem*,

does not include the student directly; rather, it is the settings outside of his or her direct sphere of influence; however, the properties of this system will interact with elements of the student's *microsystem*. For example, a parent's workplace schedule will not require direct involvement from the child; however, the child could be affected by these schedules. The fourth system is the *macrosystem*, which includes elements such as cultural mores and beliefs, laws, and societal values. This system may or may not affect the student as strongly as the preceding three as it depends on larger, less tangible, influences on the student's life. Lastly, the *chronosystem* includes environmental events over time and the cumulative effect of these events. Examples of events within this system include, the birth of a sibling, divorce, parental job loss, puberty, or severe illness. The effect of each of the systems can be positive or a negative.

This theory is important to the research since educators are part of a developing child's *microsystem* and through the process of creating an educational plan for a student, the teacher is engaged in gathering information about the student from both the immediate environment as well as other larger contexts. This process of gathering information and developing education plans is undertaken at specific moments in time but also across a span of time.

Chapter Summary

In this chapter, I have outlined my motivation to carry out this research. I have described how exploring and developing an understanding of the experiences BC teachers have had with the LEIC planning tool will add to the lack of literature on this topic. It could, potentially, provide POPFASD with information to enhance the professional development opportunities they provide to BC educators. I have also

identified and outlined Ecological Systems Theory as the theoretical framework or foundation on which I am basing this study.

In Chapter 2, I will discuss literature on neurodevelopmental theory. FASD is a neurodevelopmental disability and the LEIC tool identifies this factor as a key part of the planning process. It includes a discussion of planning tools in the context of neurodevelopmental theory and a description of the LEIC planning tool. There is a scarcity of literature on the LEIC and on planning for students with FASD; therefore, the literature review process is also shared.

Chapter 3 provides a rationale for using a mixed-methods design for this research, an outline of the research procedures, including ethicial considerations, participant recruitment, consent process, data collection methods, and how the study was evaluated. Qualitatitive and quantitative findings are presented in Chapter 4.

Chapter 5 provides detailed analysis of the findings in Chapter 4. The analysis includes how data from the survey supports the data from the interviews and vica versa. My analysis will cross-reference the findings of Chapter 2. Finally, recognizing Brofennbrenner's theoretical orientation, it was important that the analysis gave weight to the context in which educators spend their day; that consideration was given to the environment, social, interactive and perceived notions of support and planning for students with complex learning needs and also within the broader context of the school, the education system and within the demands of being a teacher in British Columbia.

Chapter 6 concludes with a discussion of the limitiations, implications for future research as well as for POPFASD, and finally my personal reflections are shared.

Chapter 2: Literature Review

Developing a student-centred, learning plan for individuals with FASD (Fetal Alcohol Spectrum Disorder) requires a thoughtful and informed approach in order to create a meaningful, individualized plan that will utilize and develop the strengths of the learner (Carpenter, 2011; Carpenter et al., 2011; Clark, 2012; Clark et al., 2014; Kalberg & Buckley, 2007; Millians, 2015; Pei, 2013; Petrenko, Tahir, Mahoney, & Chin, 2014). POPFASD's (Provincial Outreach Program for FASD) approach to supporting students with FASD is grounded in neurodevelopmental theory and a strength-based approach to learning.

As part of this support, POPFASD utilizes the LEIC planning tool. This student-centred planning instrument identifies the neurodevelopmental dysfunction and behaviours of the learner as well as identifies the environment that supports or negates the learning. This tool is also grounded in neurodevelopmental theory. The LEIC has three sections. The first section focuses on the learner and includes a review, interview, observe, and test (RIOT) approach to profile the learner. The second section seeks to identify the expectations of the learner, the possible brain domain impairments, and the observable behaviours as well as considering the suitability of the match between the educational expectations and the learner. The third section is the accommodations portion in which appropriate accommodations are developed with full consideration given to the environment, curriculum, and instruction.

For the purposes of this literature review the term *planning tool* will be used. Other terms within this term include *student information system*, *profile*, *education plan*,

and *matrix*. The term *neurodevelopmental* will be adopted and will include other terms such as *neuroconstructivist*, *brain-based,* and *neurobehavioural.*

A comprehensive search of the literature for information related to FASD was undertaken. For the planning tools portion of the literature review, there were limited search results. The search for planning tools that was undertaken used databases that included ERIC (Education Resources Information Centre) an educational literature and resource database, Academic Search Premier a multidisciplinary database, and PsychINFO to cover the behavioural and psychological aspects of the literature. Search terms included:

1. *Planning* and *FASD fetal alcohol spectrum disorder*, *prenatal alcohol exposure*, and *alcohol related fetal damage*, which resulted in 67 references however all of the results were for literature on profiling of domain impairment, models for support outside of the education setting, broad case management issues, broad programming strategies, discussions of interventions, or prevention planning rather than profiles for the purposes of planning in a school setting. The search term *school* was added. Twenty-four references were identified however, similar results were achieved in terms of literature topics.

2. *Functional behaviour assessment* and *FASD*, *fetal alcohol spectrum disorder*, *prenatal alcohol exposure*, and *alcohol related fetal damage*, which resulted in no references being identified.

3. *Profile* and *FASD*, *fetal alcohol spectrum disorder*, *prenatal alcohol exposure*, and *alcohol related fetal damage*, which resulted in 169 references identified. Including the term *school* narrowed the search. Sixty-nine references were identified however,

results did not conclude with literature specific to planning for classroom interventions and support.

4. *Education plan* and *FASD*, *fetal alcohol spectrum disorder*, *prenatal alcohol exposure*, and *alcohol related fetal damage*, which resulted in no references.

5. *Matrix* and *FASD*, *fetal alcohol spectrum disorder*, *prenatal alcohol exposure*, and *alcohol related fetal damage*, which resulted in 31 references. The literature was primarily concerned with biomarkers and no references led to literature on planning for intervention and support in the school setting.

6. *LEIC* and *FASD*, *fetal alcohol spectrum disorder*, *prenatal alcohol exposure*, and *alcohol related fetal damage*, which resulted in no references being identified.

Similar search terms were used with the broad term *disabilities.* While information was not abundant, this search did provide some positive results.

The first section of this literature review provides information about neurodevelopmental theory, particularly as applied to FASD. By understanding how the brain, the environment, and development itself intertwine and exert change on human development (Karmiloff-Smith, 1998), I will demonstrate how the LEIC planning tool is also grounded in neurodevelopmental theory. In the second section, research into planning tools for individuals with disability will be reviewed. The paucity of research on planning tools and FASD will demonstrate the need for research into the potential of the LEIC planning tool to create neurodevelopmental-based supports for students with FASD. In short, I will demonstrate that the literature supports the need for research on a comprehensive, student-centred planning tool conceived from a neurodevelopmental perspective to support and enhance the learning for students with FASD.

Neurodevelopmental Theory and FASD

Cook et al. (2015), Mattson et al., (2013), and Streissguth's (1997) research showed that prenatal alcohol exposure can result in damage to the central nervous system, which leads to cognitive and behavioural impairments in the affected individual. The importance of identifying the neurocognitive traits of individuals with FASD has been identified in the literature (Bredberg, 2011; Malbin, 2002; Mattson et al., 2013; Streissguth, 1997; Streissguth et al., 2004). According to the Canadian Guidelines for FASD, a critical element for a diagnosis is evidence of dysfunction in three or more areas of the central nervous system (Cook et al., 2015) highlighting the fact that prenatal alcohol exposure can result in functional brain damage (Cook et al., 2015; Malbin, 2002; Mattson et al., 2013; Streissguth, 1997; Streissguth et al., 2004).

Knowledge from the fields of neuroscience, psychology, and education has led to new paradigms in educational practice that establish links between brain function and learning (Jensen, 2008; Karmiloff-Smith, 1998; Wilson, Conyers, & Rose, 2015). Neurodevelopmental theory identifies a link or interaction between brain function, the environment, and development across the lifespan (Jensen, 2008; Karmiloff-Smith, 1998) as opposed to nature-based theory which stresses the biological nature of development or nurture-based theory which stresses the environment within the context of development (Karmiloff-Smith, 1998; Pressley & McCormick, 2007).

Mattson et al. (2013) completed a quantitative study, the purpose of which was to build on an earlier neurobehavioural profile study (Mattson et al., 2010b) and improve classification and diagnosis of individuals with alcohol exposure (AE). The researchers indicated that there was strong evidence in the research for the importance of identifying

the neurobehavioural phenotype associated with AE for the reason that greater clarification of a neurocognitive profile associated with AE would lead to improved interventions, planning, and supports. Participants for this study were children between the ages of eight and 17. Data were collected from six sites in the United States and South Africa. The experimental group was made up of 209 subjects all of whom had confirmed heavy exposure to alcohol and the control group was made up of 185 subjects. The control group consisted of typically-developing children who did not meet criteria for Fetal Alcohol Spectrum (FAS) or Attention Deficit Hyperactivity Disorder (ADHD) and had histories of little or no prenatal alcohol exposure. Both groups were given batteries of neuropsychological tests to identify which neurobehavioural deficits were most common. The results of this study showed that there was a statistically-significant difference between the alcohol-exposed group and the control group. This study provided statistically-significant results indicating that 70% of children with heavy prenatal alcohol exhibited an atypical neurobehavioural profile even in the absence of FAS. The authors concluded that this information could be used to differentiate individuals affected by prenatal alcohol exposure from a typically developing individual. This study supports the argument that there is a neurodevelopmental profile for FASD.

Interestingly, Karmiloff-Smith (1998) stated that a neuropsychological model might not fully explain the dynamics of developmental disorder, suggesting that while the neural profile is relevant to development, so too is the environment and development itself. The examples used to explain Karmiloff-Smith's position on neurodevelopment were based on studies of disabilities other than those associated with prenatal alcohol exposure.

Kalberg and Buckley (2007) also characterized the neurobehavioural deficits typically associated with FASD. They recognized that while individuals may have the same diagnosis, the learning profile of each individual is unique. Kalberg and Buckley described how neurobiological profiles should be used to inform school-based assessment practice, planning, intervention, and support. However, the authors also highlighted the importance of using a combination of tools and assessments to support learners, arguing that neurocognitive and behavioural assessments, as well as an assessment of the learning environment are necessary to determine what supports are needed. From Kalberg and Buckley's work, it can be determined that they support a neurodevelopmental theory of learning, in which the environment and the developing learner's brain are inextricably linked in development.

Malbin (2002) outlined a neurodevelopmental approach to intervention and support. She discussed how brain research has altered the understanding of behaviours associated with FASD. Using knowledge of the neurodevelopmental profile typical of FASD, Malbin described FASCETS (Fetal Alcohol Syndrome Consultation, Education, and Training Services) neurobehavioural construct which links brain dysfunction and behaviour, highlighting the importance of thinking about behaviours as symptoms of brain disability rather than problem behaviour. Malbin argued the limitations of learning theory and typical behavioural interventions stating that learning theory and typical behavioural interventions do not recognize structural brain differences. Malbin's substantive argument was that knowing FASD is a neurodevelopmental disability requires a paradigm shift, one that moves away from the learner who "won't" to the learner who "can't". She also described the importance of providing appropriate

environmental accommodations that support brain dysfunction arguing that caregivers, including teachers, are a part of the "invisible" environment. According to Malbin when an approach is not working the emphasis should be on the caregiver to find a different way to support the learner.

Like Malbin, Jensen (2008) believed that it is essential that teachers recognize they are a fundamental element within a student's learning environment. Teachers create microclimates within their classroom that can enhance or hinder student development. Some elements of this environment are visible, such as classroom layout, organization, teacher's clothing and some elements are invisible, like respect, enthusiasm, and energy (Jensen, 2008, Malbin, 2002). To highlight the importance of the teacher as part of the environment, Jensen provided an explanation of the mirror neuron system of the brain, which he stated is accessed through observation. This system allows humans to see the world from another's perspective; therefore it is likely to be the system that is responsible for imitation, social learning, and emotional development (Jensen, 2008).

Streissguth (1996) was the first to identify primary and secondary disabilities often associated with FASD. The primary disabilities highlight the behaviours that reflect functional brain damage associated with FASD while the secondary disabilities provide information as to the behavioural aspects often associated with the environmental influences. Streissguth described the secondary disabilities as disabilities that are a result of an individual's brain dysfunction responding to environmental influences. She identified six secondary disabilities which included: (a) mental health problems, (b) disrupted school experiences, (c) trouble with the law, (d) confinement, (e) inappropriate sexual behaviour, and (f) alcohol and drug problems. Malbin's (2002) list of secondary

disabilities differ from those of Streissguth; however, both Malbin and Streissguth argued that secondary disabilities are a result of environmental influences rather than strictly brain dysfunction.

Streissguth et al. (2004) examined adverse life outcomes for individuals with FASD and explored the impact environment had on the nature and intensity of those outcomes. This qualitative study involved 415 individuals between the ages of six and 51 with an average age of 14. The authors identified five adverse outcomes some of which were identified previously as secondary disabilities (Streissguth, 1997). Analysis of data from the study demonstrated environmental factors that protect individuals from developing secondary traits as well as environmental factors that enhance the risk of negative outcomes. Streissguth et al., (2004) demonstrated that there is an interaction among the brain, the environment and the developing learner, as well as observable, behavioural responses to that interaction.

Kodituwakku (2010) summarized intervention studies on FASD and presented a neurodevelopmental framework based on findings from clinical neuroscience, developmental psychology, and neuropsychology. Some of the studies used animal models and included neonatal handling, the provision of enriched environment, and domain-specific training. All of these studies provided evidence of experience-induced changes in neural functioning or neural plasticity. Kodituwakku also summarized intervention with human subjects. These human studies focused on improving skills in a variety of domain-specific areas, including: (a) social skills, (b) math skill, (c), literacy skills, (d) safety skills, and (e) working memory. Kodituwakku also shared the results of a study on a specific behavioural consultation program called *Families Moving Forward*,

the *Alert Program* which is a neurocognitive program aimed at self-regulation, a parent-child interaction therapy study, and a cognitive control therapy study stating that each of these interventions provided evidence that behavioural interventions could improve domain-specific functioning, however, some studies did not show generalization to other areas.

Kodituwakku (2010) presented arguments as to why there has been limited intervention research: (a) lack of consensus regarding core deficits in children affected by prenatal exposure; (b) different methodologies used in animal vs human research, resulting in difficulties translating research into human intervention; and (c) FASD not being seen as a global health risk. The author stated that the lack of research-based interventions has led to teachers creating interventions based on experience rather than research data and that the studies presented provided evidence that behavioural interventions were effective in improving both behaviour and cognition. While the studies showed improvement in specific domains this improvement did not necessarily generalize to other areas of the brain, as well, only some interventions were effective.

Kodituwakku also presented a neurodevelopmental framework for intervention, stating that most of the human intervention studies utilized strategies that had been successful with disorders such as autism, ADHD, or language delays. He argued that while these disabilities may have had some similar characteristics to FASD, the full benefits of intervention are only possible when the interventions are tailored to a specific disability. In describing a framework with four guidelines to maximize intervention possibilities: (a) attend to the individual's cognitive-behavioural profile; (b) use strategies with the zone of proximal development; (c) provide early self-regulation and attention

training; (d) provide an enriched environmental input; and (e) combine evidence-based behavioural and pharmacological intervention, unless contraindicated, Kodituwakku compared a modular view of the mind that focuses on damaged modules vs a view in which neural and cognitive processes are context dependent. He described how interventions have typically been aimed at specific cognitive domains that are impaired focusing on the importance of training in attention and self-regulation because this type of training is more comprehensive than domain-specific training. The studies identified and discussed in Kodituwakku provided evidence to support a neurodevelopmental theory. Of note, some of the studies used animal models and only a few studies were undertaken in the classroom environment; the math study used a specific math program and the literacy study was undertaken in 10 schools in a high-risk area of South Africa.

Millians (2015) described intervention studies that addressed deficits in learning readiness, mathematics, social interactions, behaviour, attention, and executive processes. The author identified that there is no research to address problems in reading, written expression, social studies, or science. She also identified that teachers and school staff need to be provided with training to understand and support learners with FASD. Millians stated that interventions focus on changing thinking patterns; thus supporting a neurodevelopmental approach.

Paley and O'Connor (2009) reviewed empirically tested treatments for individuals with FASD, discussed case management considerations, and suggested future directions research should take. Animal studies were reviewed and the authors stated that the results of the studies were promising and remediation may be possible. The studies reviewed supported a neurodevelopmental theory. The authors reviewed educational and

cognitive interventions stating that certain strategies might help support learning. Paley and O'Connor refered to four of the educational and cognitive intervention studies found in Kalberg and Buckley (2007), Kodituwakku (2010), Millians (2015), and Paley and O'Connor (2009), highlighting the limitations on school specific, evidence-based interventions. While the case management discussion focused on psychiatric issues, substance abuse problems, legal and medical problems, and sexuality, Paley and O'Conner described the importance of treatment decisions being informed by neurocognitive impairments and behavioural deficits of the individual. There is an absence in the recommendations and future directions that address educational involvement, rather the report described the importance of educating health care professionals and community providers, all of which are important but draw attention to the lack of focus and research on the school environment.

Planning Tools

Thoughtful and thorough planning is important for students with an FASD diagnosis (Carpenter, 2011; Kalberg, & Buckley, 2007; Millians, 2015; Poth, Pei, Job, & Wyper, 2014). In a recent study, Poth, Pei, Job, and Wyper (2014) stated that instructional planning should come from a variety of assessment sources, should consider environmental influences, and should be a collaborative process (Bredberg, 2011; Carpenter, 2011; Carpenter et al., 2011; Malbin, 2002; Paley & O'Conner, 2009; Poth, Pei, Job, & Wyper, 2014; Streissguth, 1997). Carpenter et al. (2011) described a large-scale study, undertaken in the United Kingdom. The Department of Education, U.K. commissioned the Specialist Schools and Academies Trust to undertake an 18-month action research project the purpose of which was to develop a learning resource

framework to enhance outcomes for students with Complex Learning Difficulties and Disabilities (CLDD), including FASD. Included in this framework was the development of resources that would create effective, individualized learning pathways. The authors stated that students with complex learning needs were a unique group of learners and there was a clear lack of guidance and training for teaching this group of students. The participants in the Engagement for Learning study included educators, parents, students, and multidisciplinary team members in 91 educational settings. There were 184 students involved in the study. Students were selected to represent as wide a range as possible of disability within the definition of CLDD that had been developed, prior to the study, through a 12-month consultation process. The schools included special schools, international schools, and mainstream schools. Resources were developed in special schools in phase one of the project. These resources were then trialed in special and international special schools during phase 2a. Additional trials took place in phase 2b. The participant schools in this phase were all mainstream schools.

Included in the developed and trialed resources was *The Engagement and Profile Scale* (EPS). The EPS was developed to enhance student-centered reflection and to encourage educators to develop learning plans that centered on student strengths and interests. Carpenter et al., (2011) described engagement as one of the single best predictors of successful learning. Malbin (2002) and Streissguth (1997) also described the importance of identifying strengths but did not directly describe motivation or engagement as contributing factors to positive learning outcomes. Jensen (2008) also identified engagement as one of the three elements central to neurodevelopmental teaching, while neurodevelopmental theorists such as Karmiloff-Smith (1998) described

the importance of the learner and the environment she did not isolate engagement as a critical factor in learning. Carpenter et al. (2011) concluded that the overall response to the framework and resources was positive and constructive. The authors found that the EPS led to increased engagement in learning for students with complex learning needs and they stated that educators had indicated their professional practice improved. Educators also observed improved learning and emotional regulation amongst students.

Clark (2012) and Clark et al. (2014) completed a mixed-methods study that assessed the POPFASD program. The study was undertaken in one district in British Columbia and participants included 12 elementary teachers from eight schools and 13 students. Students were blind to the intervention, however teachers were not. Student behaviour and academic achievement were measured in both an intervention and an untreated comparison group. The intervention group received teacher training on FASD as well as mentorship (Clark 2012). All teachers were interviewed and transcripts were analyzed thematically. Four main findings were highlighted and included: (a) teacher satisfaction with the professional development, (b) no statistically significant change in observed behaviours, (c) teachers identified more positive feelings toward student behaviours, and (d) no statistically significance change in academic performance. The authors stated that teachers felt the training program affected their teaching in a positive way. Although the LEIC planning tool was not the main focus for this study teachers described it as a useful planning tool and an important aspect of POPFASD's training.

Millians (2015) systematically reviewed and summarized a number of studies and reports on educational planning and interventions for students with FASD. She concluded that (a) teachers found diagnostic reports complex and they did not provide specific ideas

for supporting learners, (b) different levels of teaching experience resulted in differing levels of frustration with children with FASD, and (c) experienced teachers were better able to modify programs. The author then presented an overview of factors necessary for planning. Included in this overview was training on FASD and effective strategies and comprehensive evaluation of student diagnosis, which she stated should include specific, school-based interventions; level of functioning; strengths and needs; and careful selection of program, placement, and instructional supports. Millians also described research on interventions however, they were limited in scope and number and some required access to funding that British Columbia schools do not typically have. This report provided further evidence that there is a lack of research regarding specific interventions for students with FASD in some academic areas, that cognitive deficits need to be considered, that the approach to support students needs to be collaborative, and that a learning profile that incorporates specific information about the learners strengths, needs, functional capabilities, and cognitive impairments needs to be developed.

Hayes (2004) completed a case study in which a visual tool was used to review an annual education plan of an elementary school student with moderate learning difficulties. This student was transitioning to a secondary setting. The school was located in the United Kingdom. The review tool was a four-quadrant tool and was based on a child-centered approach. Each quadrant represented a different focus for the review. The foci included strengths and difficulties at school, the strengths and difficulties at home, the agencies and supports in place for the student, and the first steps to be taken within three days of the review. The pre-meeting process included: (a) the student receiving a copy of the four-quadrant circle and a list of questions that would be asked, (b) the student identifying who

she would like at the meeting, (c) other participants being identified, (d) roles being allocated, and (e) classmates providing positive feedback about the student. During the meeting the steps were (a) the process was explained, (b) the four-quadrant visual tool was overviewed, and (c) questions were asked and responses were sketched to complete the four quadrants. The student was the central participant in the discussion however, information was gathered from all participants with the exception of the graphic facilitator who created graphic images of what was discussed. The final step in the process was a *round of words* in which each participant gave one word about the review process. Hayes concluded that the approach was, from all participants' perspectives, a useful process and tool for reviewing progress and preparing for transitions. She identified that students with profound or multiple learning disabilities might find this process challenging. Hayes case study, while limited due to the single evaluation, single participant, and a student with moderate learning difficulties, has a similar emphasis on the collaborative, student-centered approach noted in the study of Carpenter et al., (2011).

Giangreco, Whiteford, Whiteford, and Doyle (1998) described a case study in which the Choosing Outcomes and Accommodations for Children (COACH) educational planning tools was utilized with a four-year-old with Down syndrome. This student attended a regular pre-school program. The COACH planning tool uses a validated, problem-solving method and is guided by six principals, some of which include collaboration and connecting learning outcomes to individually valued life outcomes (Giangreco et al., 1998). The authors described a 10-step process for creating a student's education program. A critical factor in the COACH tool is explicitly linking assessments to planning in a systematic manner that includes drawing upon the knowledge of family

and team members. They argued that this is different from developmental assessments and behavioural checklists in that it provides a process for decision-making and not just lists of functional behaviours or developmental outcomes. Giangreco et al. concluded that the case study documented an effective use of COACH for developing a program and supports for a preschool child with disabilities. While this study examined the effectiveness of COACH within a case study methodology and not with an individual with FASD, it is interesting to note the focus on collaboration and assessment to guide planning, as well, the social environment was a key focus in planning.

Kalberg and Buckley (2007) presented information on the typical neurobehavioral issues that occur in children who have prenatal alcohol exposure as well as discussing how this information could be utilized to plan for interventions and supports. The authors outlined the importance of understanding the specific learning challenges of each student and the importance of gathering information from various sources to develop a clear learning profile to aid the planning process. They described the importance of identifying environmental influences and how these need to be considered in planning. Kalberg and Buckley also described the need for a functional assessment of student strengths and challenges to supplement information gleaned from neurodevelopmental assessments. While Kalberg and Buckley did not describe a specific planning tool they did indicate that Choosing Outcomes and Accommodations for Children (COACH) was a useful planning tool.

Howell and Nolet (2000) described the fundamental principles of how to conduct evaluations of learning. They described a collaborative, 10-step process to developing effective programs. Steps two, three, and four are of particular interest (a) step two focuses

on clarifying what the student needed to know, (b) step three focuses on describing what the student is doing and what is expected, and (c) step four focuses on analyzing what skill, instruction, and knowledge deficits might be causing the problem. These four steps require consideration of the learner and their environment.

Within the 10-step process is a six-step Curriculum-Based Evaluation (CBE) process. Howell and Nolet (2000) described, in great detail, the steps in the process. They emphasized the important of considering elements such as quality of instruction, curriculum, and student's prior knowledge. Step three includes a comprehensive evaluation matrix. The matrix has four categories of assessment procedure, which include review, interview, observe, and test, also known as RIOT. The four fields or domains of assessment include, learner, environment, instruction, and curriculum, also known as ICEL. They argued that assessment should not be limited to testing and domains of assessment should not be limited to the learner. While Howell and Nolet provided a planning process and not a planning tool, the CBE process supports a neurodevelopmental approach to assessment in which the learner and the environment are important aspects of consideration when planning for a student.

Alberta Education (2009) provide a strategy guide for supporting learners with FASD. Within this guide, the authors included a multi-paged tool kit that includes an interest inventory, parent survey, student inventory, individual support plan, parent tips, emotional regulation tool, inventory to identify learning styles, meeting tips tool, planning tool for meetings, resource lists, individual support plan, behaviour support plan, parenting participation tips for behaviour support planning, tools to identify support network, and daily report plans. While the number of tools presented is extensive this

resource clearly supports the need for a collaborative planning process that involves assessment of the learner and their environment.

Chapter Summary

The literature recognizes that prenatal alcohol exposure can result in a neurodevelopmental disability. For individuals with FASD, the neurodevelopmental nature of the disability requires careful consideration of the neurobehavioural profile as well as the environmental impacts that can augment or impede development. The literature clearly indicates that there is a need for tailoring supports to meet the individual needs of students with FASD; however, there is a distinct lack of research on tools that effectively guide a collaborative planning process. Furthermore, there is evidence to suggest that a neurodevelopmental approach—one that considers the interdependence between the learner, the behaviour, and the environment—should also be a critical part of any planning tool or process.

It was my intention to describe the experiences of British Columbia educators' uses of POPFASD's LEIC planning tool in the context of neurodevelopmental theory. Qualitative findings reveal the three major themes of *Application*, *Intention*, and *Inhibition.* These three themes are also identified in the quantitative results. The results of this study suggest that teachers feel that the tool is a useful tool and they generally understand the intent of the tool, however application and synthesis of the LEIC training is not always accurate. Respondents determined a number of factors that could inhibit in-depth use of the LEIC to produce the intented results.

Chapter 3: Methodology

Research can be divided into two broad paradigms: quantitative research or qualitative research. When deciding which research approach to take, the researcher should consider the problem, the question, and the literature review (Creswell, 2015a; Creswell, 2015b). With these considerations, this study used a mixed-methods research approach to investigate BC teachers' experiences with the LEIC planning tool. Creswell states that surveys provide data that helps to learn about a population rather than relating variables or predicting outcomes.

A quantitative survey design was used to gain a breadth of descriptive knowledge about teacher's experience with the tool. The target population for this survey was BC teachers who have completed, within the last 10 years, online or workshop training on the LEIC planning tool. Using a qualitative, one-on-one interview design, and a smaller sample, the aim was to delve deeply into the lived experiences of teachers with the LEIC. The goal was to gain knowledge about current practices in order to further support development of and training on the use of the LEIC planning tool.

Mixed-Methods Design

Mixed-methods research is a methodology often used in the fields of social, behavioural, and health sciences and it draws on the strengths of both quantitative and qualitative research by collecting and examining data using both approaches; therefore, it is assumed that the result will be a superior understanding of the research problem. Mixed-methods research is appropriate when one type of research has the potential to not fully address a research problem. Mixed-methods design can verify information from one database with another, deepen understanding, build on data source and provide

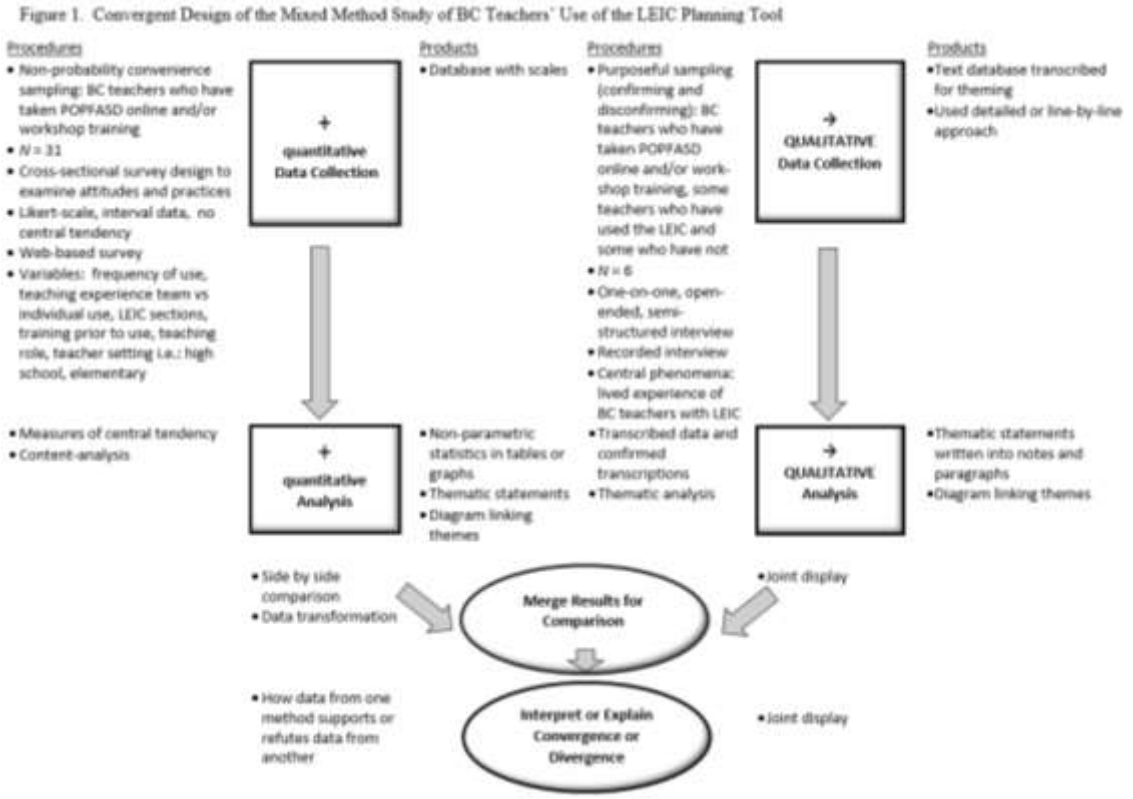

Figure 1. Convergent Design of the Mixed-Method Study of B.C. Teachers Use of the LEIC Planning Tool something new, and help to explain one data source by examining another data source (Creswell, 2015a; Creswell, 2015b). Using a convergent mixed-methods design, a design in which qualitative and quantitative data were simultaneously collected, enabled me to offset the weaknesses of one data form with the strengths of the other, resulting in a more rigorous understanding of the research question (see Figure 1).

Using the qualitative methodology of hermeneutic phenomenology, teachers' lived experiences were examined with the LEIC tool in an attempt to better understand the essence of their collective experiences. The lack of research on the LEIC indicates that there is not enough knowledge of a particular theory or knowledge of existing variables to control and examine therefore, a quantitative study was not be appropriate. According to Creswell (2015a), qualitative research is appropriate when literature reveals

little research on a phenomenon, when variables are unknown, and when you need to learn more from participants through inquiry. My role as a researcher was to understand and interpret the experience of teachers regarding a particular phenomenon, in this case, the LEIC tool. A qualitative approach was used to delve deeply into the experience teachers have had with the LEIC tool. This included the experience of POPFASD's training, implementation and sharing of the tool with members of school teams, understanding of the process, purpose, and format of the tool, the language of the tool, collaborative experiences with other educators, parents, and students and how easily the tool translated to other ministry, school, or district documentation, suggestions for improvement, and how sustainable the use of the tool was.

The phenomenological approach to research seeks to understand and reconstruct the everyday, lived experience, and knowledge of people. It is about describing the real language of describing experience (Laverty, 2003, van Manen, 1997; Mayan, 2009). A safe and trusting relationship was created with colleagues in which suppositions and beliefs about the planning tool were shared as they were essential in the analysis and interpretative process. In keeping with methods appropriate to phenomenology, it is recognized that suppositions would likely not remain as they were, rather they would be altered by that of the shared experiences of others (Laverty, 2003). As Mayan (2009) stated, phenomenology is not about what is thought to be the experience of people, in my case educators, but what actually the lived experience is. This makes for an interesting methodological complication. As van Manen (1997) argued, reflection on lived experience is always recollection of what has already passed because a person cannot reflect while they are experiencing something.

Quantitative methodology, using a cross-sectional survey design, helped to gather information on a larger population than the qualitative methodology thus providing broader descriptive data regarding BC teachers' opinions, behaviours, and attitudes toward the LEIC tool. As stated in Creswell (2015b), quantitative survey research does not allow for experimental manipulation of variables and therefore cause and effect would not be examined; however, trends may be noted and further data might be examined which would help to learn about BC teachers and their use of the LEIC planning tool.

Ethical Concerns

Ethics is concerned with the prevention of harm and with protecting the rights of individuals who are participating in research. Ethical guidelines outlined in the Tri-Council Policy Statement were strictly adhered to. This study was submitted to and received approval from the University of Northern British Columbia's Research Ethics Board. It was anticipated that the possibility of harm to participants would be relatively low but still needed to be a consideration.

Anonymity and confidentiality. Online survey participants remained anonymous to the researcher except in the case of those participants who expressed an interest in also participating in the one-on-one interview. Participants were also given the opportunity to participate in a draw prize, which was used as an incentive to increase survey response rates. Where the survey participants indicated an interest in either the draw prize or the interview, they were made aware that they are giving up anonymity on the survey when they provided a name and contact information. This was made apparent

to the survey participant directly on the survey where they provided their name and contact information.

Interview participants were identified by a letter (participant A, B, C, to participant F) so that the real identities were not evident. Information or combinations of information (e.g., particular experiences in a particular role) were changed so a participant's identity would remain confidential.

Survey and interview participants were provided with informed consent documents (Appendix C and Appendix D) which outlined the nature of the study, as well as the benefits and risks involved. Participants were informed in an introductory paragraph, that they can skip any question at any time. Interview participants were asked to sign the letter, giving their consent to participate in the study. There was a statement before participants began the survey informing survey participants that by clicking on the start button they were agreeing to participate in the survey. Interview participants were briefed on the research purpose, process, benefits, and risks before the actual interview began. Throughout the interview I did not express opinions about teacher's practice and listened without judgement. Participants were given the opportunity to review and comment on the transcription of the interview. They were given the opportunity to ask questions or voice concerns at any time during or after the research. It was recognized that in the interview there could be a potential emotional reaction to the LEIC tool itself, the training, or a particular student; participants were informed in writing and before the interview began that participation was voluntary and that they may withdraw at any time without any consequences or explanation. Although no participants withdrew, they were informed that should they have chosen to withdraw they would have been informed that

their responses would not be used in analysis and the data would be destroyed. Data from the study will be kept for a period of five years in a locked filing cabinet and on password-protected computers. Anonymity and confidentiality will be respected and no information will be disclosed that will connect participants with their responses.

During the interview phase of the research, there was potential that interviewees could talk to each other about the questions or their answers. Interviewees were reminded that the questions and answers were to remain confidential and they should not share with anyone who might be interviewed. It would be highly unlikely they would talk to each other given the geographical disparity of the sample.

Research Procedures

Research procedures for mixed-methods design require both quantitative and qualitative elements within the procedural process. As noted in Creswell, mixed-methods research is not just the gathering of quantitative and qualitative data, it is also the integration and scrutiny of the data so that the strength of each form of data is combined and can result in a more thorough understanding of a research problem (See Figure 1).

Recruitment of participants. Three methods were used to recruit participants. Direct emails were sent out to some of the teachers who had taken the online training course to see if they would be willing to participate in the survey. Emails had been recorded for teacher participants from online classes given from August 2016 to December 2016. Email addresses were scarce for participants prior to this time. A total of 102 emails were sent out, 43 emails "bounced back". A second recruitment method utilized POPFASD's monthly newsletters. A notification was placed in the POPFASD monthly general newsletter for January and February (See Appendix E). The newsletter

is available through the POPFASD website and is sent to anyone who subscribes to it. A second "district partner" newsletter is sent out each month to district partners. District partners are the liaison between POPFASD staff and educators in the province. A notification was placed in January and February's newsletter. Due to the limited response a third recruitment method was employed; an email was sent directly to district partners requesting that they forward the survey to teachers within their districts (See Appendix F). Response rates were low and therefore a draw prize incentive was also used as part of the recruitment methodology.

Survey participants. Non-probability, convenience sampling was used to recruit participants for the online survey. Data from POPFASD estimated that approximately 2,000 BC teachers have taken POPFASD's online course or workshop training that includes the LEIC planning tool. It was known that teachers had participated in both of these professional learning opportunities and in some cases teachers had taken the training more than one time. For this reason, it was difficult to ascertain the exact number of people who had taken the training at least one time. Its aim was to survey between 100 and 200 teachers. The survey was completed by of 31 teachers and one education assistant. The education assistant's responses were not used as this study was directed at teachers. Three of the 31 surveys were incomplete and so the responses were also not utilized.

Interview participants. For the qualitative interview confirming and disconfirming, purposeful sampling was used. A final question on the survey was used as an invitation to participate in the interview portion of this research. Participants provided their name and contact information. There was a clear statement that accompanied this

question pointing out the fact that providing this information would result in the participant giving up their identity on the survey. Six survey participants agreed to participate in the interview process. All participants were teachers who had taken either POPFASD's online training or had attended a POPFASD workshop that included the LEIC. All participants were from differing districts within the province of BC and they were all support or resource teachers. None of the interview participants were enrolling (classroom) teachers although some had had this role in the past. Four of the participants were in the elementary setting and two were support teachers in the kindergarten to 12 environment.

Consent. The Supervising Administrator for POPFASD gave permission to access the database of information as well as email addresses in order to contact the potential participants for the survey portion of this study (See Appendix G). POPFASD does not have contact information for teachers who had participated in face-to-face workshops so I was also given permission by the Supervising Administrator to use a notification in the general and district partner monthly newsletters as a vehicle for recruitment (See Appendix E). This notification was placed in the January and February, 2017 newsletters. Also, as an employee of School District #57 I had been given consent to undertake research in this district as there was the potential that some of my participants may be from School District #57 (See Appendix H).

Quantitative Data Collection

For the quantitative data collection a cross-sectional survey design was used to examine attitudes and practices. The survey included background information questions as well as questions regarding experience with and opinions of the LEIC tool. A web-

based (UNBC's Fluid Survey) survey with modified Likert-scale, as well as open- and close-ended questions was used to gather information on possible variables including: LEIC use; years of teaching experience; frequency of use; teaching role including job title (e.g.: resource teacher, classroom teacher, counsellor); grade groupings (e.g., K-3, 4-7, and so forth); education setting (e.g. senior or junior secondary, intermediate or primary); as well as whether the teacher was in the public or private-school sector; whether training was online or through webcast and/or face-to-face workshop; collaborative use of tool; and the linking of the tool to neurodevelopmental domain impairments (See Appendix I).

Creswell (2015) recommended the use of close-ended questions because they provide the ability to compare responses and provide the opportunity to code responses or provide a numeric value. He further stated that open-ended questions afford more flexibility for the respondent and provide more response possibilities for the researcher. Open-ended questions have the potential to support or refute themes identified from the qualitative data.

To facilitate the qualitative sampling procedure, at the end of the survey participants were asked, "Would you be willing to take part in the interview?" Contact information was requested and respondents were informed that a positive response to this question would mean they would be giving up any anonymity.

Qualitative Data Collection

According to van Manen (2014), the purpose of a phenomenological interview is to explore and gather experiential information which can, in turn, be used to develop a richer understanding of a phenomenon. He also stated that it is important that the

interviewer maintain a constant awareness of the research question that is driving the interview and to aim to gather pre-reflective experiential accounts. With this in mind, for the qualitative data collection a script was prepared to introduce the interview and a one-on-one, semi-structured interview, with prepared, open-ended questions (See Appendix J) was distributed to the interviewees beforehand; however, as van Manen stated it is important to create a relaxed environment and to anticipate and remain attentive to emerging stories; therefore additional questions were added or removed in each interview according to the direction of the interview. Van Manen also asserted that it is often not necessary to ask too many questions and to use patience and silence to allow for the story to emerge. Further, he suggested that in order for the interviewer to get an account of an experience rather than gather opinions, views, or interpretations of an experience, consideration of the interview environment is important. He suggested that informal environments are often a more conducive environment. Due to the geographical constraints only two interviews were conducted face-to-face one in the POPFASD office and the other in the participant's office. Four interviews were conducted using Adobe Connect and were based in my office. The participants had technical difficulties and so we were only able to use the audio connection. All interviews will were held at a time convenient to participants.

Again, the Supervising Administrator for POPFASD gave permission for the use POPFASD's Blackboard Collaborate interface to conduct these interviews (See Appendix E). POPFASD experienced changes and Adobe Connect was adopted in March replacing the Blackboard Collaborate interface. Interviews were recorded either on a hand-held tape recorder and IPad or through the Adobe system's internal recording

system. These interviews were then transcribed for analysis using my personal, password-protected computer.

Within the framework of Ecological Theory, it was important that I identified and gave weight to the context in which educators spend their day; that I considered the environment, social, interactive, and perceived notions of support and planning for students with complex learning needs and also that I considered those notions within the broader context of the school, the education system and within the demands of being a teacher in British Columbia. It was also important to note than van Manen identified that it is necessary to stay close to a person's experience with a phenomenon and therefore some flexibility in interview questions would be required. As such, some of the questions were based on the questions from individual participant's survey responses for example: "On question "x" you indicated… Can you tell me more about…." and others may arise spontaneously out of the interview itself.

Data Analysis

Phenomenological hermeneutic studies are studies concerned with understanding lived experiences and with identifying the themes common to those individuals who are sharing their lived experiences with me (Laverty, 2003; van Manen, 1997). As described by Laverty (2003), it is critical in a hermeneutical study to continually engage in the process of self-reflection in order to constantly examine personal biases, experiences and philosophical bases. Throughout the analysis my own experiences training educators on the LEIC tool were scrutinized, as well as my experiences as I researched and recorded the lived experiences of other educators. I continually examined my beliefs of the Ecological and Neurodevelopmental Theory as well as in neurodevelopmental and

strengths-based teaching in which the LEIC tool is grounded. I used a combination of awritten and recorded self-reflection process.

For the qualitative data, interviews were recorded and then transcribed. Initially an open-ended analysis was adopted using a selective highlighting approach to identify codes. As Saldaña (2016) stated, this initial coding allows for data to be broken down into discrete parts which can then be considered and compared across transcripts and scrutinized for developing themes. Saldaña recommended that once codes are identified they be further examined and then grouped into major codes. In some cases one code was adequate to describe other codes and therefore all other codes were incorporated into the one code and themes emerged.

Creswell's (2015a) steps were used for analyzing questionnaire data. These steps included: identifying response rate and bias, analyzing the data to look for trends, and describing the results. The quantitative data was numerical and textual. Measures of central tendency were used to analyse the numerical components as well as completing content-analysis on any open-ended text responses.

After analysis the qualitative and quantitative results separately, results were compared. In a convergent design, data analysis is integrated (Creswell, 2015a) and therefore, the qualitative and quantitative data were merged to describe how data from one method supported or refuted the data from the other method, and vice versa. Results were compared in a side-by-side discussion, merged and presented in a table which compared the qualitative themes with the statistical results.

Evaluation of the Study

Reflexive journal. The theory that most closely aligns with a phenomenological research method is a constructivist-interpretivist approach based on the fact that the researcher believes in multiple realities. This research explores the multiple lived experiences of BC educators with regards to the LEIC planning tool. It was important that I recognized that I was a participant in my own research. I acknowledged and maintained an awareness, through the use of reflective journaling, of myself and the changing and possibly influential synergy that existed between myself and my participants.

Chapter Summary

The research was guided by Ecological Systems Theory which draws on the relationship between human beings and their environment across the lifespan. The LEIC planning tool also identifies the learner as an essential element to successful planning. Within the framework of the LEIC various aspects of the environment are identified and considered as critical to successful planning. The tool is also best used in a collaborative process, again drawing on influential elements or people in the learner's environment. Fetal Alcohol Spectrum Disorder is a neurodevelopmental disability and neurodevelopmental theory also identifies the link between the brain, the environment, and development across the lifespan. Using a mixed-methods research design, I gained access into BC educator's experiences with the LEIC planning tool, a tool that draws on knowledge about individual learners, their brain function, and the various aspects of their environment.

Qualitatively, interviews were conducted on six non-enrolling teachers lived experiences with the LEIC. These interviews were transcribed, coded, and analyzed for themes. The themes were compared to the notes collected in the reflexive journal. The qualitative results were also compared to quantitative results to look for similarities and differences.

Chapter 4: Research Findings

A convergent mixed-methods design was used to conduct research into the lived experiences of BC teachers with the LEIC planning tool. The qualitative data were collected using a one-on-one, open-ended, semi-structured interview process and then were transcribed, coded, and themed. Through this process of coding and recoding, it became apparent that three themes were shared by all participants: *Application, Intention*, and *Inhibitor*, however Application was the overarching theme.

Quantitative data were collected using a cross sectional, web-based survey (UNBC's Fluid Survey) to gather data on attitudes and practices of BC teachers with the LEIC. The survey was comprised of close-ended, Likert-scale questions as well as three open-ended questions. The information was analyzed using measures of central tendency for the closed questions and thematic analysis for the open-ended questions. Quantitative and qualitative data were merged for side-by-side comparison and analyzed for convergence and/or divergence. In this chapter, qualitative interview results are presented first, followed by the quantitative survey results. The open-ended survey responses are then compared to the three themes identified in the qualitative results. These findings are presented as evidence to support the discussion in Chapter 5.

Qualitative Results: Interview

Six BC educators participated in an interview in which they shared their experiences with the LEIC tool. The participants were identified by a letter (A to F) to protect their identities. Table 1 provides a summary of background information on the interview participants. All participants were in support roles such as learning assistance, support, resource, special education, and learning support coordinator; some of the

participants described themselves as having multiple roles within support. None of the participants were classroom teachers. Four of the six participants were teaching in the elementary setting. Two of the participants were supporting kindergarten to grade 12 and one of these individuals was teaching in the distance education setting. The six participants had taken some form of training within the last four years. Two participants indicated that they had undertaken other forms of professional development apart from workshops and online courses. One of the six participants had taken multiple trainings and had also supported other educators using the LEIC. Since participating in POPFASD's professional development, participants' response to a question regarding LEIC tool use varied from "had not used it" to using it two to three times per year. It is important to note that participant B reported, on the survey, that they had not used the tool since training, however, in preparation for the interview they used the tool on two separate occasions. Teaching experience varied from a response of zero to five years to 21 to 25 years. Four of the six participants had more than 16 years teaching experience.

One-on-one, open-ended, semi-structured interviews were conducted with the six participants. Through the process of transcription, followed by reading and rereading interviews, coupled with selectively highlighting words, phrases, and sentences and then applying codes, it became increasingly clear the three themes of Application, Intention, and Inhibitor were shared among the six participants (see Table 2). The theme Application describes experiences teachers had completing the LEIC. Interviewees described specific steps within the process, the format of the tool, supporting questions that guided the process, collaborative activity, and how professional experience and practice informed their ability to complete the planning process. Intention pertains to

Table 1

Interview Participant Background Information including Participant Identification (P), Teaching Role (TR), Teaching Experience (TE) in Years, Grade/Grade Grouping (G/GG), POPFASD Training/Date, and Frequency of LEIC Use.

P	TR	TE	G/GG	Training	LEIC Use
A	LA, S, SE	6-10	K to 6	WK[a] 2013	Two times since 2013
B	R, S	0-5	K to 12 DL	Online[b] 2014	Not since training[c].
C	S	16-20	Elementary	Online 2015	Not since training.
D	LSC	21-25	K-12	Online 2012, WK "a long time ago" and 2016, additional FASD training[d].	More than 3x per year
E	S	16-20	Elementary	Online 2014, WK 2014	Once a year but not used for last two years
F	R, S	16-20	Elementary	Online 2016, WK 2016 additional FASD training.	Two to three times a year

Note. LA = Learning Assistance; S = Support; SE = Special Education; R = Resource; LSC = Learning Support Coordinator; K=Kindergarten, WK = Workshop; DL = Distance Learning.
[a]This participant took a 1.5 hour workshop. Typically workshops are three to five hours in length.
[b]Online training = six sessions, 1.5 hours per session plus assignments.
[c] This participant reported in the survey that they had not used it since training but they then used it twice before the interview.
[d]Additional training beyond workshops or online courses. This training included training others.

descriptions participants gave of the purpose of the LEIC tool, including their knowledge of the neurodevelopmental aspects of FASD, the importance of understanding the learner's strengths and needs, and how to create effective accommodations and strategies while being cognizant of the learners' strengths and possible domain impairments. Application and Intention are closely connected; it is difficult to complete the LEIC without an understanding of the learner specifically and FASD in general. They were separated to reflect the variation in understanding and proficiency in the step-by-step process of completing the form and awareness of the underlying intent of the form. The theme of Inhibitor was chosen as it summarized participants' remarks on various external obstacles encountered with the LEIC. For the purposes of clarity, I will discuss the most-dominant theme to the least-dominant theme based on the total number of occurrences.

Application. The most-dominant theme was *Application*. This theme contributed more than half of the overall occurrences (53%). Application was noted in this context when participants described aspects such as the steps that they took to complete the tool, the configuration, the shared experience with their colleagues, and how repeat exposure enhanced their insight of how to complete the planning tool. All participants described experiences relating to Application. Participant C stated that the guiding questions for the top (learner) section "were very helpful [and] gave you ideas [and] made you think in the right areas". Participant D described how they supported a collaborative process, and guided colleagues who had less understanding of FASD stating, "[I was] really specific in how I asked the questions and directed the questions… generating conversation like that helped". Participant E also described the importance of questioning to develop a plan, "pretty limited kinds of information [are generated] unless

Table 2

Three Themes Emerging from Interview Data: Application (n=415), Intention (n=259), and Inhibitor (n=112).

Themes	Sample Codes	Number of Occurrences	Quotation
Application	Process	112	Ok, let's move through this [tool] in a methodical kind of process and see what we might be missing and look at it from a different angle.
	Experience	91	
	Viewpoint	89	
	Collaborating	82	
	Format	41	
			It's been about two years since I've used the tool.
Intention	Purpose	172	What do we have? What do we want? How are we going to get there?
	Neurodevelopment	61	
	Experience	26	
			Sometimes it takes expertise.
Inhibitor	Time	32	I find there is so much and to implement another new thing, it kind of gets put on the side.
	Experience	22	
	Collaborating	20	
	Format	20	
	Access	18	
			We don't always have our support staff come which is unfortunate.

we kind of get into it and really start to question a little bit deeper". Participant A commented on completing the bottom (accommodations) portion of the tool noting, "We definitely did a lot of curricular stuff and instruction-wise, I know we talked about

proximity". Participant B described the process of working through the various sections of the tool saying,

> I go from the middle section to the lower section a lot of times; the top section tends to get filled out separately…. then we went to the expectation of the learner in the environment, then with that looking at the secondary disabilities, with that we looked at the accommodations.

More than one participant commented on experience as it related to completing the tool. Participant B noted how practice made the process better saying, "The second time around was better… it takes a little bit of time to learn how to use the tool… you make mistakes learning how". Participant E commented, "[it] requires quite a bit of guiding from someone that might have a little bit more experience". Participant A stated, "I would feel more comfortable if I used it a few times though." Participant F, in particular, compared the process of completing this tool with the process created by the Ministry of Education, Physical Disabilities/Chronic Health Impairments Instructional Support Planning Process (ISPP), stating, "The LEIC is a lot more user-friendly". They continued on saying, "this is a useful tool as opposed to something I have to fill out in a certain way". They explained, "What I really like about it is being able to talk with the teacher… they are usually interested in stuff that falls into secondary disabilities… with the ISPP they just check off what seems to fit and give it back to me".

Participants described obstacles they experienced filling out the LEIC. Participant A's comments were coded more frequently (33%) than other participants about constraints that related to the theme Application conveying experiences such as, "Maybe if we practiced with it or used it more frequently" and "Yeah, well we have used

it. It must have been twice. It must have been twice… We haven't used it this year… twice since 2013." This participant had only utilized the LEIC twice since 2013. They also stated, "[they] had a hard time getting teachers to buy in to it". They noted, "I don't think teachers were prepared" and that there were unaware or had not used the guiding questions that are available to facilitate the process stating, "I'm not sure why we didn't look at these then… maybe I just wasn't as familiar with it." Participant B commented on the configuration saying, "The 'other information' box could be bigger". Participant B also described the collaborative experience of completing the form with parents and noted that some of the language of the tool was difficult to explain saying, "with parents it's a bit full of jargon… parents were, 'What do you want me to do here?... I had to come up with something different to make those two boxes work for me with those parents". Difficulties that related to Application were also shared by Participant C when they related their experiences collaborating with colleagues, "a lot of teachers [were] saying why are you making us do this, we've never had to do this before". Participant F expressed concerns about the middle (neurodevelopmental) section and the education and experience required to complete this section remarking, "I have, for a couple of students, had the case where we are hypothesizing what the possible primary disabilities [are] as opposed to already knowing and I find that a bit trickier because generally it's frowned upon but to start talking about 'they seem to process slowly' but we really don't have a lot of knowledge, putting possible primary disabilities without a lot of specific information…" Participant D commented on difficulties associated with collaboration and experience noting that struggles were more apparent with, "initial teachers, the initial

time they would go through it and that would be when we whould have to shift their thinking."

Interestingly, five of the six participants had never used the tool with a parent or student, including Participant D who had the most experience and had used it two to three times per year since around 2010. Participant B had used the LEIC twice since 2014 and both of these were in the spring 2016. This participant collaborated with the parents on both occasions; while not explicitly stated it was implied that students were also present. While participant B described some difficulties families had with the LEIC the also described positive experiences, "They really liked it; both sets of parents really liked the document. Both sets of parents really liked the sensory thing, they said, 'that's really good because that's often not looked at, not talked about".

Participants also described positive viewpoints as they related to the activity of completing the tool. Participant B said, "I like the section about perceived developmental levels. That was really good." When asked if they found the guiding questions on the back of the form helpful Participant D stated, "…extremely helpful, extremely helpful". Participant F also expressed positive experiences with the guiding questions saying, "I love the second side with all the information on it and all the suggestions." This same participant also commented on the format of the tool stating, "Accommodations are important and there are nice big boxes there to put things into… it shows the importance of it". Participant C also commented on the language, guiding questions, and format stating, "it is clearly stated and having the information on the back is very helpful. I like the way it is set up". They added, "I like how it [is] on one sheet of paper and it includes a lot of information".

Intention. The second most-dominant theme was *Intention*. This theme contributed 33% of the overall occurrences. Teachers' experiences were themed as Intention when they connected to the purpose of the tool: planning for a learner with FASD while considering their strengths, their neurodevelopmental domain impairments, and the expectations placed upon that learner. Further attributes of Intention included using the information about the learner and their neurodevelopmental profile to plan appropriate accommodations. The three sections of the LEIC are: the learner, the neurodevelopmental domain focus, and the accommodations section. Descriptions that focused on the objective of each of these three sections were also coded as Intention (see Appendix A).

In some cases participants demonstrated a clear understanding of the planning tool within the areas of learner, neurodevelopmental function, expectations, and strategy creation. Participant F described the strengths-based nature of the tool saying, "the learner profile [is] where the developmental levels are non-judgmental… very much the level they are at as opposed to where they are struggling". Participant C, in describing the strengths of the tool stated, "I remember thinking it made you really think about the learner, and aspects of the learner". Participant D described the strengths and interests portion of the learner section commenting,

> I have a new little guy coming in May… I want to know what his interests are…. I want to make sure that I have things that he's interested in… if he likes frogs or hate frogs and that's going to set him off. I want to know the interests are and his dislikes as opposed to what he's strong in…. I know that he can recognize the numbers one to 10 but he can't match them

> up he has no idea what the meaning of one to 10 is… Yes, I think the difference between the strengths and interest is important and knowing what they are.

Participants C described Intention stating, "this tool would assist with looking at the root causes of the student's needs and help you to provide better accommodations and strategies to help them and their needs." Participant A described the "whole" goal of the LEIC explaining, "I think the whole goal should be with an understanding of who they [the student] are". "Participant B said, "I used it as a planning tool for our IEP meetings and found it worked really well to kind of steer the conversations and really get to know the student." Participant E expressed Intention as it related to the accommodations section stating,

> It's a good brainstorming section. It allows teachers to consider their practice and their environment. As a result of considering the student… they may develop some different ways of thinking about how they can improve their relationship with kids and learning outcomes.

Participant D described the LEIC as a tool that,

> is opening up the eyes of the teachers and the staff to look beyond what's happening and see why… helps them to focus on the brain activity… strengths… and they actually come out seeing a brighter, better bulb than they actually thought they had.

Participant D further described the three sections of the LEIC stating, "to me [they are]: 'What do we have? What do we want? How do we get there?'".

Intriguingly, Participant E shared that they had used the tool not as a planning tool

but as a problem-solving tool stating, “I like to look at it not as a first-line tool in terms of approaching planning for kids. I tend to use it as a problem-solving tool.”

In describing experience with the tool some participants also shared thoughts that demonstrated a disconnect from the intent of the LEIC. Participant A clearly stated that they did not know enough about the tool saying, “I would [use it as part of IEP planning] if I knew more about it”. They continued to describe how they would use the tool explaining, “I would probably do it [pointing to the middle section] more myself and then do it more of… instead of a discussion I would probably say, ‘do this’”. When asked if they linked the strategies back to the expectations of the learner they stated, “We just came up with a bunch of strategies”. Participant B described difficulties with understanding the neurodevelopmental section and stated, “Ok, we’re just going to move on to the next box and we are going to focus on goals after that.” They also stated, “and then the accommodations, the first meeting I had time to get to it and the second meeting I didn’t.”

Inhibitor. *Inhibitor* was the third most-dominant theme contributing 14% of the overall occurrences. Table 3 provides details regarding the coding of all six participants’ statements that were themed as Inhibitor. Five of the six participants described time constraints when completing the LEIC. This was the most dominant code (28%) under Inhibitor. Participant A stated, “We don’t have a ton of time”. Participant B made the most references to time constraints (39%) noting, “The document takes a long time to go through if you are doing all the boxes.” This participant also stated, “[My meetings are]

Table 3

Interview Participant (P) Frequency for Individual Codes: Time (T), Experience (E), Collaboration (C), Format (F), Access (A), and Other Required Tools (ORT) and Total for Statements themed as Inhibitor (n=6).

P	T	E	C	F	A	Total
A	5	6	6	4	2	23
B	13	3	2	9	6	33
C	5	2	6	5	2	20
D	0	1	4	1	4	10
E	2	10	1	1	1	15
F	8	0	1	0	3	12
Total	32	22	20	20	18	113

an hour; I just can't go any longer" and "I just ran out of time to really fill in the all the boxes. I can make more meetings, I suppose, but I can't afford to make more meetings".

Participant C described the tool as beneficial but also stated, "I just find there is so much to implement and another new thing, it kind of gets put on the side." Participant F also frequently referred to a mandatory tool their district. This was themed as "time" because it was assumed that multiple mandatory tools (IEPs are mandatory) would constrain planning time.

Descriptions of colleagues' lack of experience, an outside influence that inhibited the LEIC process, made up the second-most-frequent coding for Inhibitor (20%). Participant E's discourse particularly focused on lack of training and experience in special education and FASD. This was reflected in statements such as, "Within my current building I think there are very strong understanding of special needs in general and certainly FASD in particular". They further described the necessity for training or background to use the tool effectively stating, "I think at the bare level you need some

kind of background, perhaps what FASD is and what it might look like within the classroom". When describing the middle section they stated, "I find that middle section … primary disabilities, teachers may quickly jump to learning disabilities… requires a vocabulary and understanding that often classroom teachers don't easily or immediately possess". Participant F mentioned the difficulties colleagues had with the language of the tool stating, "profile of a learner, I don't think that is commonly used or understood". Participant A also expressed a similar sentiment saying, "teachers don't know what you mean by sensory issues". Participant D shared that they had experienced older teachers having more difficulty understanding the idea of changing environment sharing, "I find the hardest section to get them to change is the environment… they are set and they want these things like rows in the room". Interestingly, Participant A described lack of experience identified as an Inhibitor while also describing an understanding of the tools Intention, "I need to use it more to go through it to guide [me] and help the teacher understand".

All participant's expressed experiences in which collaboration obstructed LEIC planning. Participant A stated, "I had a hard time getting teachers to buy into it". As the interview progressed Participant A also shared, "We don't always have our support staff come [to meetings] which is unfortunate… they have great things to share… it's [the meeting] not on their time… I wish I could get them to come". Participant C shared, "being new in the school I really had to build up a relationship and rapport… a lot of teachers [said] why are you making us do this, we've never had to do this before." Participant C continued to describe collaboration, "there are teachers who really believe, think, they should be able to do everything themselves and they don't need outside

help… I've had others who say I've tried that and it won't work or they are not open to suggestions".

Formatting and access to the LEIC hindered the use of the LEIC. All educators indicated that they were unaware the LEIC was available online or that they had downloaded older versions. Some participants described boxes as being either too small or unnecessary. Participant B shared that they felt some information could be added stating, "you could put something in there [expectations box] about goals, this will help". Some participants also described ways they could access further information to support LEIC planning. Participant B suggested, "You could have a liaison if you can't get out to districts all the time." Participant C suggested follow up emails. This particular participant was unaware of POPFASD's monthly newsletter.

Qualitative Results: Survey

The qualitative data was gathered using a cross-sectional survey. The survey included thirteen Likert-scale questions, close-ended questions, as well as three open-ended questions. The questionnaire was available through UNBC's Fluid Surveys. It was available to teachers who had taken POPFASD's online and/or workshop training. They were informed of the survey through direct email for individuals where emails existed and through POPFASD's monthly newsletter. There were a total of 31 respondents. One respondent was an education assistant and therefore the data was not used; three respondents did not complete the survey and these surveys were discarded.

For the purpose of framing the data, demographics are discussed. The majority of the participants who completed the survey were non-enrolling teachers working in the support or resource areas at the school level with a representation of 70% of the total

Table 4

LEIC Tool Survey Results: Participants' Teaching Role (n=27).

Participant Teaching Role	Number of Participants
School-based resource or support	19
District resource or support	4
Classroom	3
Counsellor and classroom	1

Table 5

LEIC Tool Survey Results: Participants' Grade or Grade Grouping (n=27).

Participant Grade or Grade Grouping	Number of Participants
Elementary	13
Secondary	9
Kindergarten to grade 12	4
Preschool to grade 12	1

participants. District level resource or support teachers represented 15% of respondents and classroom teachers made up 11%. There was one respondent whose role was that of counsellor and classroom teacher making up 4% of the total respondents (see Table 4). Due to the over-representation of school-based resource or support teachers (n=19) compared to district resource or support teachers (n=4), classroom teachers (n=3) and the one counsellor/classroom teacher (n=1), differences were not examined in relation to teaching role.

Participants were asked to respond to a question about the present grade level they were teaching in. It was recognized that some respondents would be non-enrolling (not classroom) teachers and therefore an additional question was posed asking them to identify their grade grouping. The responses to these two questions were combined into four categories (see Table 5). Middle school responses were placed into the "Secondary"

Table 6

LEIC Tool Survey Results: Participants' Teaching Experience (Years) (n=27).

Experience	Number of Participants
0-5	3
6-10	7
11-15	6
16-20	8
21-25	2
More than 25	1

category. Elementary respondents made up slightly less than half of the overall respondents (48%), while secondary accounted for 33%, kindergarten to Grade 12 for 15%, and preschool to Grade 12 added up to 3% of the overall respondents.

It was anticipated that there could be a relationship between years of teaching and attitudes and experiences with the LEIC and therefore data was gathered on teaching experience. Table 6 outlines the responses to the closed-question regarding years of teaching experience. Teachers with 16 to 20 years of experience comprised 30% of respondents, teachers reporting six to 10 years equaled 27%, 11 to 15 years made up 22% of the overall population, teachers with 0 to 5 years made up 11%, and 21 to 25 years of experience constituted seven percent. There was one teacher with more than 25 years of experience.

In responding to a close-ended question regarding the training type undertaken just under half (44%) of participants indicated that they had participated in POPFASD's six-session online training course, while 30% had taken a face-to-face workshop and slightly less (26%) had taken both the online and workshop training (see Table 7). Interestingly, 51% of participants indicated that they had sought from POPFASD,

Table 7

LEIC Tool Survey Results: POPFASD Training Method Survey Respondent Completed (n=27).

Experience	Number of Participants
Workshop	8
Online	12
Workshop and online	7

additional support beyond online and workshop training, to enhance their ability to use the LEIC planning tool. The survey did not allow for further clarification as to what that additional support entailed.

Participants were given the opportunity to respond to a question about frequency of use (see Table 8). Fifty-six percent of respondents indicated they used the tool once a year compared to 28% who said they used it two to three times a year. Only one respondent (4%) used the tool more than three times per year. Of note, of the overall responses, 15% of participants indicated that they had not used the tool since participating in the POPFASD training.

Survey participants were asked to respond to a series of seven close-ended questions considering the use of the LEIC planning tool and six close-ended questions considering the neurodevelopmental elements of the tool. The survey's Likert-scale ranged from 1=Strongly Disagree to 9=Strongly Agree. The accompanying statements were worded in positive way i.e.: "I know how to complete the top section…", or "I consider the link…", or "When planning accommodations or strategies I frequently…". Therefore, scores closer to one would indicate more difficulties with the tool and scores

closer to nine would indicate more ease at completing the tool as well as understanding its neurodevelopmental aspects. An error occurred on the survey and the first set of seven questions repeated. All responses to the repeated questions were disregarded. One question was deemed to be unnecessary as the objective of this question was captured in another question; therefore, this question was not included in any of the

Table 8

LEIC Tool Survey Results: Reported Frequency of Use of the LEIC Planning Tool (n=27).

Experience	Number of Participants
Not used	4
Once a year	15
Two to three times a year	7
More than three times a year	1

Table 9

LEIC Tool Survey Results: Close-ended Question Responses and Measures of Central Tendency for Overall Close-ended, Likert Scale Questions 1=Strongly Disagree, 9=Strongly Agree (n=27).

Question	M	Mdn	Mo
A. User-friendly and supports planning for students	7.41	8.00	8.00
B. Layout of top/learner section is easy to follow	7.70	8.00	8.00
C. Layout of middle/"good fit-poor fit" section is easy to follow	7.63	8.00	8.00
D. Layout of the bottom/environment-instruction-curriculum section is easy to follow	7.74	8.00	7.00
E. I consider the link between primary disabilities and expectations	7.89	8.00	9.00
F. I consider the link between primary disabilities and secondary disabilities	7.96	8.00	9.00
G. I reflect on primary disabilities when planning accommodations	7.97	8.00	9.00
H. I reflect and include strategies that support student's strengths and interests	8.15	8.00	9.00
I. I know how to complete the top/learner section	7.85	8.00	8.00
J. I know how to complete the middle/"good fit-poor fit" section	7.74	8.00	8.00
K. I know how to complete the bottom/environment-instruction-curriculum section	7.74	8.00	8.00
L. The guiding questions on the back of the LEIC help with completing the LEIC	8.04	8.00	9.00

results. The results of the close-ended questions were examined for measures of central tendency (see Table 9). Analysis of the questions showed that the overall responses to

Table 10

LEIC Tool Survey Results: Combined Close-ended Question Responses and Measures of Central Tendency for Overall Close-ended, Likert Scale Questions 1=Strongly Disagree, 9=Strongly Agree (n=27).

Question	M
Combination of B, C, and D	7.69
Combination of E, F, G, and H	7.99
Combination of I, J, and K	7.75

question I were below the mode (Mo=8). Overall responses to four of the 12 questions (E, F, G, H, and L) were above the mode. These four questions are questions that link planning to the possible neurodevelopmental domain impairments. The overall median score for all questions was the same (Mdn=8.00). Given the overall mean was 7.81 with a standard deviation of 0.2 (SD=.2), responses to question A were below the mean (-2 SD, M=7.81)

In order to see if there were differences between close-ended questions, questions were combined and further examined. Questions were grouped as follows: ease of layout (B, C, and D); connecting the learner section, the possible primary disabilities, and secondary challenges with planning (E, F, G, and H); and knowledge of how to complete each of the three sections (I, J, and K) (see Table 10). In comparing the overall mean (M=7.81) with the new mean of between question difference, the data showed that there were no significant differences between the mean of the combined answers and the overall mean. Due to the small sample size (n=27) a *t*-test was not warranted to see if there were any statistically-significant differences.

Table 11

LEIC Tool Survey Results: Elementary and Secondary Enrolling and Non-enrolling Teacher's Response and Measures of Central Tendency for Overall Close-ended, Likert Scale Questions 1=Strongly Disagree, 9=Strongly Agree (n=27).

Grade Level	M
Elementary	7.79
Secondary	7.79

Table 12

LEIC Tool Survey Results: Years of Teaching Experience and Measures of Central Tendency for Overall Close-ended, Likert Scale Questions 1=Strongly Disagree, 9=Strongly Agree (n=27).

Years	M
0-5	6.77
6-10	7.92
11-15	7.92
16-20	7.82
21-25	8.04
More than 25 years	9.00

Table 13

LEIC Tool Survey Results: POPFASD Professional Development Method Accessed: Workshop or Online and Measures of Central Tendency for Overall Close-ended, Likert Scale Questions 1=Strongly Disagree, 9=Strongly Agree (n=27).

Method	M
Workshop	7.60
Online	7.66
Workshop and online	8.24

It was anticipated that relating overall responses to grade levels or grade groupings could provide some interesting results. Given the small sample size and the fact that elementary teachers made up 48% (n=13) of the respondents, secondary teachers made up 33% (n=9), kindergarten to grade 12 made up 15% (n=4), and preschool to grade 12 accounted for 4% (n=1); nine of the thirteen elementary respondents were randomly selected and then the overall results of these nine participants were analyzed for the mean. Kindergarten to grade 12 and preschool to grade 12 respondents were not included due to the small sample sizes. Given the overall median scores for the entire sample (M=7.81) with a standard deviation of 0.2 (SD=0.2), overall responses were the same between elementary and secondary respondents (See Table 11).

Results of open-ended questions were compared to years of teaching experience. The scores in Table 12 indicated that the majority of scores clustered around the overall mean (7.1). The only significant score was attributed to the three teachers who had zero to five years teaching experience, therefore, comparisons with the overall number of participants (n=27) would not yield any meaningful results.

Data on professional training methods was gathered (See Table 13). Results show that individuals who received workshop and online training were +2SD above the overall mean for the entire sample (M=7.81, SD=0.2). This result is deemed to be significant.

In order to ascertain if respondents received any additional guidance or information beyond online or workshop training, they were asked a simple "yes/no" question, indicating if further support had been accessed. The additional support question did not give specific examples of what "support" could mean beyond stating that District

Table 14

LEIC Tool Survey Results: Additional Support Accessed to Enhance Ability to Use the LEIC Tool and Measures of Central Tendency for Overall Close-ended, Likert Scale Questions 1=Strongly Disagree, 9=Strongly Agree (n=27).

Additional Support	M
Yes	7.76
No	7.86

Table 15

LEIC Tool Survey Results: Frequency of LEIC Tool Use per Year and Measures of Central Tendency for Overall Close-ended, Likert Scale Questions 1=Strongly Disagree, 9=Strongly Agree (n=27).

Frequency/Year	M
Not used	7.08
Once	7.70
Two to three	8.40

Partners could be part of this "support". Of the 27 respondents, 51% indicated that they received extra support. While this may have produced discernable results, and was therefore considered worthy of analysis, Table 14 provides results of overall responses and revealed no meaningful differences when compared with the overall mean (M=7.81, SD=.20).

Table 15 examined results based on frequency of LEIC tool use compared with the overall mean (M=7.81) score of respondents. Four respondents (15%) indicated that they had not used the tool since training, 15 (55%) stated they used it once a year, seven (26%) shared that they used it two to three times a year, and one (4%) said they used it

more than three times a year. Since sample sizes varied, four participants were randomly selected from the two categories "used once a year" and "used it two to three times a year". Results from the one respondent who stated they used the LEIC more than three times a year were not included in the frequency data. Mean scores of the four respondents in each group were calculated for the "not used", "once a year", and "used two to three times a year" and compared to the overall mean (M=7.81, SD=.20). The overall mean score for the 'not used" group was significant to three standard deviations below the mean (-3 SD). The overall mean score for the "two to three times a year" group was also consequential (+1 SD).

Respondents were asked two questions regarding collaborative use of the LEIC. One question was a simple "yes/no" response to, "Did you use this tool collaboratively?" and the other was, "If collaboratively, please note who is typically involved in the collaborative process." It is important to note that three people did not respond to this survey question. Eighty-five percent indicated they had used the tool collaboratively and 15% had not. Of the 15% who reported their mean scores (M=7.23) were more than two standard deviations (-2 SD) below the overall mean (M=7.81, SD=0.2). The responses to the second question, "If collaboratively, please note who is typically involved in the collaborative process." were discarded because it was discovered that respondents were only able to indicate one collaborative partner when they wished to indicate multiple partners.

The LEIC survey included three open-ended questions. The first question stated, "If you answered no to any of the three previous questions, please explain why you didn't use the LEIC." The three previous questions had asked if they had used the LEIC for

planning for a student with FASD, with complex learning needs, or with any other exceptionality. This question caused confusion and was, therefore, eliminated. The second open-ended questions asked, "What are the strengths of the LEIC planning tool?" and the third asked, "What are the weaknesses of the LEIC planning tool?" Of the 27 survey participants, 10% of people did not respond to any of these questions, 75% responded to both of these questions and 15% only responded to the question about strengths of the tool. Responses to the questions were coded using the three themes of Inhibitor, Application, and Intention identified in the qualitative results. Table 16 provides results of this themed analysis. Inhibitor was the most dominant theme (44%). Inhibitors are descriptions of experiences regarding outside influences that affect the ability to develop or apply knowledge to the process and intention of the LEIC tool. Just under half (46%) of the coded responses described time as a weakness in using the LEIC tool. One survey respondent stated, "It's quite time consuming to complete and classroom teachers are too busy to devote the time needed." Another respondent shared experiences that related to time and collaboration as well as describing financial constraints, "It requires a lot of time and is best done in collaboration which increases the time needed and adds a financial factor if release time is required." Other respondents noted, "[It] needs to be electronic such that some boxes can be expanded.", "[The] middle section [is] not yet smooth to me", and "It is only as good as the people filling it out".

Application was the second most-dominant theme (39%). Application refers to such things as the process of completing the planning tool with considerations to format, the collaborative process, and opportunities to practice. Within the theme Application survey participants primarily described experiences with the form itself as well as the

Table 16

LEIC Tool Survey Results: Open-ended Survey Question Responses Applied to Qualitative Themes: Application (n=41), Intention (n=37), and Inhibitor (n=16).

Themes	Sample Codes	Number of Occurrences	Quotation
Inhibitor	Time	19	It takes a while to learn how to fill out the form. Lots of information to add. Some sections could be merged or eliminated.
	Experience	8	
	Collaborating	6	
	Format	6	
	Access	2	
Application	Format	14	The step-by-step process.
	Process	13	
	Viewpoint	5	
	Collaborating	4	Concise, clear, quick to reference, and helpful when collaboratively brainstorming re: the student's needs.
	Experience	1	
Intention	Purpose	9	Helps me focus on the primary disability when considering my student.
	Neurodevelopment	7	

steps required to complete the form. One participant stated, "It was easy to use and complete." A second teacher stated, "[It is] clearly laid out with comprehensive instructions for use." Finally, a third participant shared, "It can be used by multiple professionals for a number of reasons i.e.: TOC file, boxes help to contain materials, primary disability and lack of good fit to the expectations can be clearly seen!!"

The theme Intention was the third most-dominant (17%). One respondent described the strengths of the tool noting, "it helps the user focus concern—and… it

Table 17

Side by Side Comparison of LEIC Tool Survey Results: Number of Occurrences of Three Themes Emerging from Quantitative (Q) Interview Data: Application, Intention, and Inhibitor and Open-ended Survey Question Responses Coded to Qualitative (q) Themes: Inhibitor, Application, and Intention.

	Number of Occurrences	
Theme	Q	q
Application	415	37
Intention	259	16
Inhibitor	112	41

helps the user apply knowledge of the child to helpful strategies for the child's learning". A second teacher stated, "It helps to isolate key areas of focus for supporting students."

Side-by-Side Comparison of Results

The quantitative results from the theming of the six interviews were merged for side-by-side comparison with the results from theming the open-ended questions on the qualitative survey (n=27) (See Table 17). Application was the leading theme in the quantitative interviews (53%) and the second-most dominant theme in the qualitative analysis (33%). Whereas, Inhibitor was the prevalent theme in qualitative responses (44%) and the least dominant for quantitative theming (14%). Finally, Intention was the second-most dominant theme for quantitative coding and the least reported theme in the qualitative, open-ended questions.

In comparing the open-ended responses from the survey with the open-ended responses we can see the similarities in the data. In the area of Application, one survey

respondent described the process stating, “It is well designed and includes lots of necessary information for planning”; thoughts such as this were shared by interview participants as well. Participant A shared, “I like the set up… guides your process.” The responses from the survey primarily focused around the form, the guiding questions, and were mostly restricted to broad statements about steps, whereas the interview responses themed under Application went into more specific descriptions of collaboration and understanding as well as providing detailing specific areas of the tool.

In the area of Intention, the data from the survey’s open-ended questions tended to be more statements about the tool which demonstrated a broad understanding of the purpose with statements such as, “[You] can work as a team to fill it out, consider all the aspects that impede a student’s success, [and it] gives specific ideas to a classroom teacher on how to support [a] student”. These types of statements were also shared by interview participants. Participant B stated, “It tells me who this student is…it helps me plan”. Again, while there were similarities between survey and interview responses, interview participants provided more detailed and in-depth information regarding their experiences through the lens of Intention.

Finally, under the theme Inhibitor both survey and interview respondents shared statements about various things that inhibited the LEIC planning tool and process. For both survey and interview data, time and experience were major inhibiting factors. For example, Participant C stated, “It’s another time-consuming task for the teachers to do” and a survey participant commented, ‘it isn’t used often because we MUST do the IEP”. Experience was also referred to in both survey and interview data. Participant E stated, “sometimes it takes expertise too if you are speaking and working with newer teachers”

and a survey respondent stated, “if teachers are unfamiliar with theory/programming for students with special needs they may have difficulty with some sections (e.g. requirement of leaner’s brain)”.

Chapter Summary

Six teachers shared their lived experiences through interviews. This qualitative data was then examined for demographic information and was also coded, recoded multiple times, and then themed. Demographic information was gathered through questions such as, current teaching positions, training as it related to special education, POPFASD training in particular, motivation for training, frequency of use. The participants then responded to questions that afforded them the opportunity to share their experiences with the various sections of the tool, their understanding of the tool as it related to their learners, and to the neurodevelopmental nature of FASD. They were asked questions to determine how much of the process was collaborative. In some instances, interviewees were asked to elaborate on question responses from the survey. While there was a prescribed list of questions, the interview was semi-structured and so there was an organic aspect to the interview. This section presented the results from the interviews. The three themes identified were: Application, Intention, and Inhibitor. All participants’ experiences included data that was part of these themes. Application was the most dominant theme (53%), followed by Intention (33%), and then Inhibitor (14%).

The qualitative findings were collected using a web-based survey. Questions were primarily closed-ended and used a nine-point, Likert-scale, as well there were three open-ended questions. The first of these questions was discarded prior to reporting findings. The close-ended questions were used to establish demographic information as

well as basic information about LEIC use (who it was used for, how frequently it was used, if it was used collaboratively, etc.). The majority of respondents were resource or support teachers, this fits with the demographic of the interview participants where all of the intereviewees were in some kind of support role. Specific close-ended questions were asked about each of the three sections of the tool (learner, neurodevelopmental domain impairments, and accommodation development). The purpose of these questions was to develop an understanding of how well the user understood the neurodevelopmental nature of FASD as it pertains to planning as well as to gather information about ease of use. Finally, the open-ended questions allowed for participants to elaborate on what they found to be strengths and weaknesses of the LEIC. These questions were coded using the three themes identified in the quantitative interviews. It was found that all three themes discerned from the quantitative data were readily applied to the qualitative, open-ended responses, however dominance of results varied between the quantitative and qualitative theming with the dominant quantitative theme being Application and the dominant qualitative theme being Inhibitor. When data was analyzed using a variety of different variables, there was an indication that frequency of LEIC use and dual-training (online and workshop) had some degree of significance.

Chapter 5: Discussion of Findings

The purpose of this mixed-method study was to explore BC teachers' experiences with POPFASD's LEIC planning tool. Through interview and survey data it was revealed that essential themes regarding experiences with the LEIC were Application, Intention, and Inhibitor. Two participants demonstrated a clear understanding of the intention of the LEIC coupled with evidence to suggest they were able to consistently and effectively use neurodevelopmental information to create an effective plan for students however, four participants while being able to describe the intent of the tool, demonstrated that they had on occasion, misapplied information leading to the conclusion that they had either not understood all of the concepts shared or were not yet able to fully analyze and synthesize the knowledge of neurodevelopmental domain impairment in general and knowledge of their learner(s) specifically to create a fully comprehensive and effective LEIC plan. All six respondents described experiences that inhibited their use of the tool. These included aspects such as time, experience or practice, collaboration, configuration of the tool, as well as access to the document.

Overall, teachers' experiences suggest that the LEIC tool could be beneficial in planning for a student with FASD. The qualitative survey data suggests that frequency of use and dual-training methods may increase proficiency and depth of understanding when planning using the LEIC; the qualitative findings are limited due to the small sample size (n=31). In this chapter I will discuss the findings and compare them with the research literature.

Major Findings

The questions posed during the interview were designed to serve three main purposes; firstly, to gather background information; second, to ascertain what process teachers went through when completing the tool, and finally, to investigate their understanding of the intent of the LEIC tool, specifically as it related to the learner's profile, the neurodevelopmental nature of FASD, teacher expectations, and the accommodations that were a result of these considerations. The tool is divided into these three main sections – learner, the neurodevelopmental approach to planning, and the accommodations section. The training provided by POPFASD in both the online course and in the workshop, focuses on each of these three sections separately and then concludes with information linking the three sections together using a strengths-based, neurodevelopmental approach in order to create an effective plan. The accommodations section is the culmination of the synthesis of information from the learner section, the neurodevelopmental section (including expectations of the learner) through to a consideration of secondary behaviours that arise when neurodevelopmental domain deficits go unsupported. The accommodations are strategies that will support the neurodevelopmental domain impairments in order for an individual to meet expectations. I will use the framework of these three sections to discuss the findings as well as describe findings as they relate to the ability to combine the information from the three sections to create an effective plan using a neurodevelopmental approach.

The learner (top) section. The shared experiences of the interviewees suggest that the top section of the tool is the section that is the most accessible and comprehendible. Survey respondents also identified that they felt they knew how to

complete this section. It is important to note that survey questions only allowed for educators to give an opinion – "I know how to complete the LEARNER section of the LEIC planning tool. The layout of the LEARNER section is easy to follow". There was no process in the survey portion of my study to allow me to gather further information and assess their "in practice" knowledge. All of the respondents in the interview iterated that having an understanding of the learner's profile, including strengths and neurodevelopmental impairments were important aspects in successful planning. In general, the results of this study conclude that respondents demonstrated an understanding of how to complete the learner section of the tool as well as an understanding of the intent of the learner section. Possibly, the ability to apply and synthesize the knowledge gained through POPFASD's training in completing the top section more readily than other sections could be because many aspects of the top section are similar to those found in documents such as the IEP – identifying strengths, assessment information, background information, etc. - as well as in many school-based-team discussion documents or other profiles of student learning and is therefore familiar to users. The importance of developing a learner profile is discussed in the research. Millians (2015) described factors necessary in planning for a student. Her research was specific to FASD but not to any one tool. The key factors identified included such things as evaluation of the learner, including strengths and needs, consideration of program, and also instructional supports. The latter two considerations could fall under the neurodevelopmental section, where expectations are considered, and under the accommodations section. The importance of focusing on the learner was also identified in the research conducted by Carpenter et al., (2011) in which they looked at *The*

Engagement and Profile Scale (EPS) which was developed to encourage educators to develop learning plans that centered on student strengths and interests.

While understanding of the learner section seemed to exist for all interview participants, each participant also shared some aspect of this section that inhibited completion. Some described limited time to gather all of the relevant information regarding "perceived developmental levels", others described difficulties with the size of the boxes, and still others described difficulties gathering information from colleagues. For example, one respondent said that they felt teachers did not have time to think very clearly about the profile of the learner. Another mentioned that the term "profile of a learner" was uncommon and probably not understood. One respondent noted that the document was outdated as it contained the term "Learning Style". This respondent was not aware that a more up-to-date version existed.

Neurodevelopmental (middle) section. The neurodevelopmental section of the tool is what makes this tool powerful when planning for learners with a neurodevelopmental disability such as FASD. This middle section considers the expectations placed on the learner, what the brain may be required to do to meet those expectations, and then considers the possible primary disabilities that the learner may have. The importance of focusing on expectations is described by Howell and Nolet (2000) in which they stated that their multi-step process for conducting evaluations included identifying the expectations placed on the student. Kalberg and Buckley (2007) discussed how information about neurobehavioural issues could be utilized to plan for interventions and support. They describe the importance of understanding the specific learning challenges of each student gleaned from neurodevelopmental assessments.

The neurodevelopmental section of the LEIC was the section that generated the most discussion around difficulties with experience and understanding intent. This was also the section where the most misapplication occurred. One respondent commented that they would have like to have seen a needs category which is a category often found on the IEP. This is important because the middle section of the LEIC is the "needs" section – this is where the requirements of the brain are described in relation to an expectation (what is needed from the brain) and also in relation to possible primary disabilities (what needs support). Other respondents described how they skipped areas that they did not understand and moved on to other areas or skipped areas that they did not have time to complete. The middle section is the part of the LEIC where the neurodevelopmental nature of FASD is highlighted and considered in planning.

What is particularly noteworthy were the views of an interview respondent who described the need for theoretical knowledge to complete the LEIC, particularly in relation to the middle section. This participant stated that even with training this section was challenging. This interviewee also identified that more practice and more knowledge made this section easier to work with. Millians (2015) systematically reviewed and summarized a number of studies and reports on education planning and interventions for students with FASD and she identified that teachers found diagnostic reports complex and also that experienced teachers were better able to modify programs. Being able to understand how a student's primary disabilities could impact learning is critical in completing the LEIC.

It is interesting to note that the respondents who were more comprehensive and in-depth in their descriptive experiences of LEIC planning also described a richer

background knowledge and more experience that also suggested greater understanding either of FASD specifically or special education in general. It is important to note that the effect of teaching experience did not yield significant differences in survey respondents' beliefs about their practice in using the LEIC. However, self-reporting has limitations in that opinions and beliefs about practice and knowledge are difficult to confirm. The respondent who had the least difficulties with the LEIC and whose descriptions demonstrated a more effective use of the tool also had the most training in the area of FASD, including multiple trainings on using the LEIC. This respondent also used the tool more frequently and had also taught others how to use it. From the survey data, more frequent use of the tool and dual-method trainings in its use were identified as being significant in respondent's closed-ended, Likert scale responses, with those respondent's scores showing they felt greater affinity to the tool. Karmiloff-Smith (1998) stated that a neurodevelopmental profile is relevant to the development of an individual; it is therefore reasonable to conclude that considering the neurodevelopmental profile of the learner is critical in educational planning for an individual with FASD.

Accommodations (bottom) section. Creating appropriate accommodations to support a student is the ultimate goal of the LEIC. The respondents in this study identified that developing accommodations was part of the planning process, however, not all respondents in the interview were able to link the strategies back to an understanding of the domain impairments and the learner's current profile. Some interview respondents shared that they did not even reach the accommodations portion of the planning process or they skipped to the accommodations and filled in that section when they were unsure of earlier sections. This demonstrates that some interviewees had

not made the link between the accommodations, the learner profile, and the neurodevelopmental domain difficulties. Survey respondents data on questions about linking primary disabilities and strengths to the accommodations suggests that they "strong[ly] agree[d]" that they did this (Mo=9.00). Again, the survey methodology did not give respondents the opportunity to elaborate and therefore their practice was not confirmed. In Clark's (2012) study of a POPFASD intervention program, she identified that the LEIC planning tool was part of the intervention program. Clark stated that teacher's found the LEIC to be valuable in identifying accommodations as part of a planning process. One of the major differences between Clark's study and the present study is that Clark's participants were part of a longer-term intervention program in which they had a two-day training in which the LEIC was a part, followed by other trainings (not LEIC specific) and ongoing mentorship from a POPFASD teacher consultant. Continued focus on the LEIC was a part of the mentorship support. It is important to note that while the LEIC was part of Clark's study, little data is given on the specific use of the tool. The importance of the environment, an area in the accommodations section is identified in the research of Karmiloff-Smith (1998) in which it was stated that a neurodevelopmental profile is relevant to development but it is also suggested that the environment and development itself were important factors. The LEIC planning tool examines the learner, their neurodevelopmental profile but also looks at factors in their *microsystem* (Bronfenbrenner, 2005) as well as other systems when considering planning.

Chapter Summary

The quantitative and qualitative findings of the lived experiences of BC educators who had used the LEIC were discussed in this chapter. The data shows that the population of BC educators who participated in this study found the LEIC to be a useful tool, however the data also indicates that it is complex and effective use can require an understanding of the neurodevelopmental elements of FASD that a one-time workshop is not likely to afford. The analysis of BC educators experience was cross-referenced with the literature described in Chapter 2. Limitations and implications will be described in Chapter 6, as well as my personal reflections.

Chapter 6: Conclusion

In Chapter 1, I introduced the purpose of this study, identified the significance of the investigation, and provided my own context that brought me to focus on the LEIC in my research. In Chapter 2, research literature was shared on neurodevelopmental theory and FASD, as well as planning tools and FASD. Chapter 3 presented the detailed methodology of this mixed-methodology study. In Chapter 4, I results of the qualitiative interview and the quantiatitve survey were provided. Chapter 5, analyzed the data and proposed interpretations of the results. This discussion was framed within the context of the research literature as well as Bronfenbrenner's Ecological Systems Theory. In this final chapter, I will present the limitations, put forward implications for POPFASD, as well as further research implications. Lastly, I will share personal reflections.

Limitations of the Study

This study has limitations. This study is qualitative and therefore my personal bias and opinions had to be identified as I analyzed participant data, particularly the data from interviews. I also had to be cognizant of my own experiences as I conducted the interview. I also came to this process with expectation of outcomes and I needed to be continually cognizant of that as I analyzed the data. Frequent conversations with my supervisor, coupled with coding and repeatedly recoding the interview responses, and also reflecting on my process through journaling helped me in this process. My inexperience as a qualitative interviewer also needs to be acknowledged. Within my own process I recognized that my interview skills improved with each interview. It is important to also acknowledge the limitations caused by sample size for the survey. Despite frequent attempts at attracting survey respondents, the number of respondents on

the survey was low. There were 31 respondents however only 27 of the respondents' data was analyzed. This small sample size makes the results not generalizable to the teaching population. It is also important to consider the demographics of both the survey and interview populations. The population for the survey was made up primarily of non-enrolling teachers and the population for the interview was completely made up of support teachers. Special educators are usually required to case manage and are typically well-versed in planning tools. A final and significant limitation is that both the survey and the interview are restricted due to the self-reported nature of the data.

Implications for Further Practice - POPFASD

One of the motivations for completing this study was the fact that POPFASD had not undertaken any formal research on the use of the LEIC tool. The only data gathered was data gathered right after a workshop or online course in the form of a feedback question. As a part of small team and a teacher consultant for POPFASD, I wanted to gather information on the long-term use of the tool so that the information could inform future decisions about the tool itself and the training that accompanies it. What became apparent in the study was the fact that teachers felt the LEIC was a useful tool, however, teachers also shared inhibiting factors in its use.

One of the first recommendations for the LEIC would be to ensure that educators had clear and easy access to the tool. All six participants shared experiences that related to access – some participants had a version of the tool that they could type directly on to but it was outdated, others had a version that was outdated but only had a "hard" copy. None of the participants had both a current copy and a copy that they could enter information directly on to.

A second recommendation would be for POPFASD to review its process for sharing information regarding changes to the LEIC document as well as to the language and approach that is part of the LEIC process. Some participants indicated that despite the fact that they thought the tool was valuable, they tended to forget to use it and they stated that they would like reminders about the LEIC, possibly in the form of an email.

It is interesting to note that the majority of participants were non-enrolling teachers, given POPFASD's limited resource pool (three teacher consultants) and the number of teachers in the province, it may also be beneficial for POPFASD to focus their training on support/resource/learning assistance teachers whose principle role is that of case manager. It is likely that this group of teachers come to the planning table with experience in planning and problem solving as well as experience in working with students with FASD and other neurodevelopmental disabilities, and if they do not, their role requires them to gain that knowledge in order to effectively support students, and by extension the classroom teacher, in developing appropriate accommodations. It is also the role of the case manager to bring the team together so that the planning is collaborative and maximizes the knowledge and resources available. The research in this study indicated that collaboration was also an inhibiting factor.

Neurodevelopmental disabilities are complex. The network that assesses individuals for FASD is called, "The Complex Neurobehavioural Behaviour Network". Comprehensive and effective use of the LEIC requires training, experience, and practice opportunities. It is questionable if a half-day, full-day, or six-part online session adequately provides this. The data suggested that teachers who use the tool more frequently and teachers who have had more than one training experience are more likely

to use the tool effectively. It is recommended that POPFASD explore dual-method trainings with opportunities for repeat exposure or "check ins" as identified by some of the respondents.

Implications for Further Research

Despite the inhibiting factors, all respondents reported that they felt the tool was a useful tool for planning for individuals with FASD and other complex learning needs. More than one respondent felt it was the best tool for really developing a comprehensive plan. This is significant. At present there appears to be no other planning tool that goes to the depth of the LEIC in developing supports for individuals with a neurodevelopmental disability. Further research could explore, in greater depth, the strengths of the tool as well as the limitations as it relates to the general population of teachers. It would advantageous to conduct research that compared the LEIC planning tool to the Individual Education Plan. It would also be interesting to conduct research that compared one-time training with ongoing training on the LEIC as well as frequency of use.

Reflections

Throughout the process of undertaking research I have reflected on the important work of POPFASD, contemplated the practices of many caring and committed educators, and framed this in the context of the ever-changing world of education. It is my belief that education in British Columbia is at transition point. I feel hopeful that the education system is, for the first time in many years, ready to grasp the concept of a truly inclusive education environment. Critical to this is time for reflective practice, time for professional conversation and training, and a time for truly thoughtful planning. I believe

that the LEIC planning tool can be a part of that reflection, collegial conversation, and planning process. I have listened and re-listened to the experiences of six educators, all of whom feel this tool can help to make a difference in planning for students with FASD. It is my hope that the research undertaken here may spark further discussion about the best way to train and support teachers so they can, in turn, support their learners.

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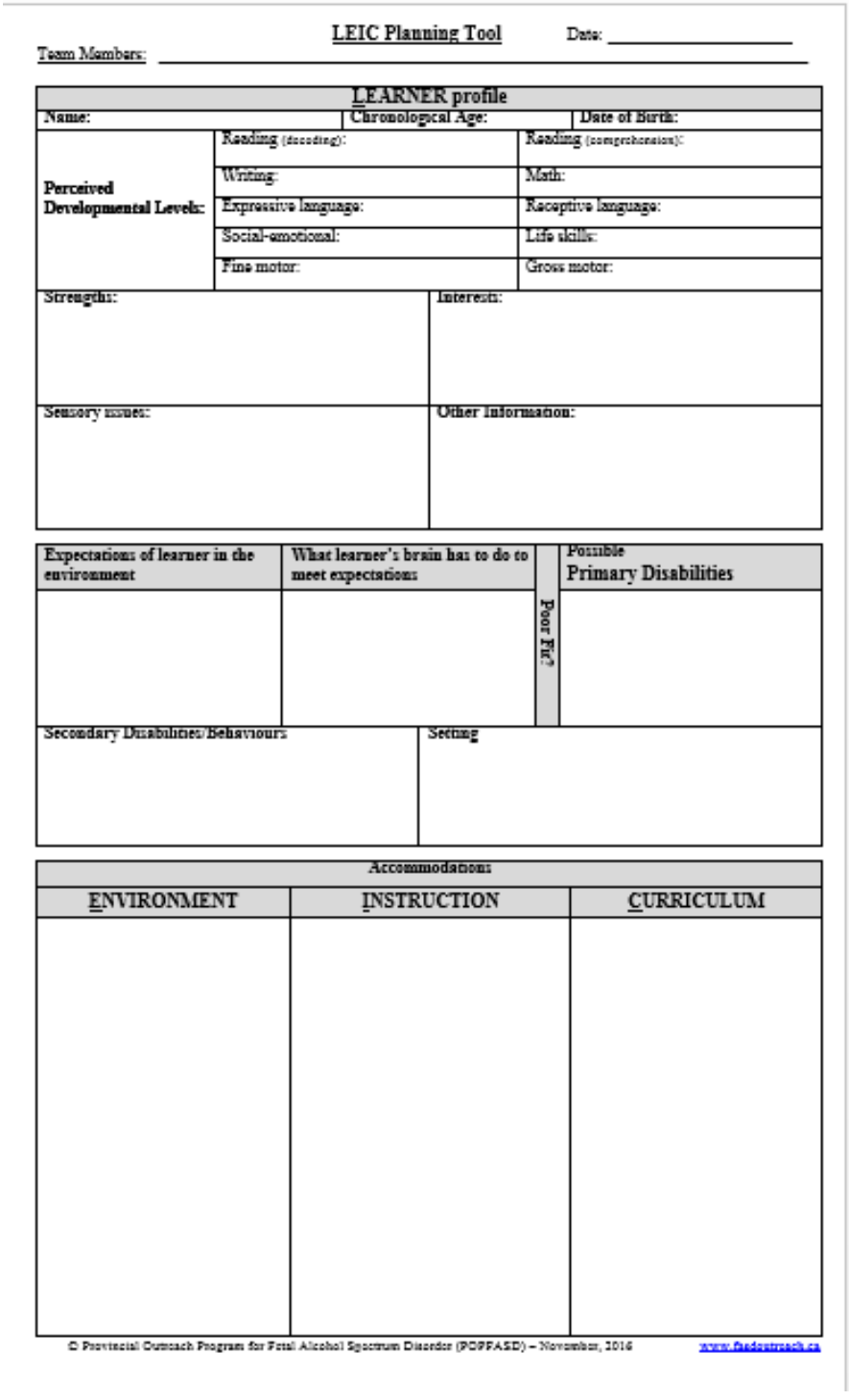
Appendix A
LEIC Planning Tool



LEIC Planning Tool Date: _____

Team Members: _____

LEARNER profile			
Name:	**Chronological Age:**		**Date of Birth:**
Perceived Developmental Levels:	Reading (decoding):		Reading (comprehension):
	Writing:		Math:
	Expressive language:		Receptive language:
	Social-emotional:		Life skills:
	Fine motor:		Gross motor:
Strengths:		**Interests:**	
Sensory issues:		**Other Information:**	

Expectations of learner in the environment	What learner's brain has to do to meet expectations	Poor Fit?	Possible Primary Disabilities
Secondary Disabilities/Behaviours		**Setting**	

Accommodations:		
ENVIRONMENT	INSTRUCTION	CURRICULUM

Appendix B
LEIC Planning Tool: Guiding Questions

LEIC Planning Tool Guide

LEARNER profile *use "R.I.O.T." – Read file, Interview student/parent, Observe, Test for skill levels					
Name:		Chronological Age:		Date of Birth:	

Perceived Developmental Levels:		
* Use age levels, grade levels, [illegible] 1-4, or other to represent developmental levels (use all available sources of assessment information)	Reading (decoding): How well does your student print into speech, matching a letter or group of letters to their sounds to make syllables and words?	Reading (comprehension): How well does your student gain meaning from the words/sentences they have read?
	Writing: At what level can this student express his/her thoughts using words, grammar, and punctuation?	Math: At what level does this student function in math (computation, concepts, problem solving?
	Expressive language: How well does this student communicate their thoughts verbally?	Receptive language: How well does this student understand incoming verbal information?
	Social-emotional: At what level does this student's social-emotional behaviour indicate?	Life skills: How independent is this student when it comes to daily functional life skills?
	Fine motor skills: How well is this student able to control and coordinate their small muscle movements?	Gross motor skills: How well is this student able to control/coordinate their large muscle/whole body movement?

Strengths:	Interests:
What are this student's strengths? This information needs to be built into the programming for this student.	What does this student like to do? This information will help to "hook" our kid into their learning as well as provide us with things to talk to our kids about.
Sensory issues:	**Other Information:**
Are there any sensory processing issues that need to be addressed? Do you observe any evidence that this student is over/under sensitive to external stimuli (sounds, lighting, smells, touch, movement, taste, etc.)?	Information from "R.I.O.T." – Reading files, Interviewing student and/or parents, Observations of student in school environment, Testing – formal and school-based. Also can include a record of preferred learning style, family info, medications, school history, and any other pertinent information

Expectations of learner in the environment	What learner's brain has to do to meet expectations		Possible Primary Disabilities
What do we want the student to do? Student will follow directions, student will be on time for class, student will change from one activity to another easily, student will focus on task for __ minutes, student will wait for his/her turn to respond, student will complete his/her work, etc.	What does the student's brain have to do to meet our expectations? Store/retrieve from memory, focus, screen out distractions, think ahead, make plans, process quickly, inhibit reactions, think and use language at age-appropriate level, generalize skills to all settings, shift attention, self-regulate, think abstractly, etc.	Poor Fit?	Which of the following are observable? Slow processing, impulsivity, memory issues, generalizing difficulties, abstraction issues, inattention, language difficulties, dysmaturity, perseveration, sequencing difficulties, sensory issues, cause/effect difficulties, need to move, regulation, organization

Secondary Disabilities / Behaviours	Setting (i.e. when, where, how often?)
What is your student's response to his/her current school program? What behaviours are you seeing in the classroom and school?	When does this behaviour typically occur? Where does this behaviour occur? How often does this behaviour occur?

Accommodations		
ENVIRONMENT	INSTRUCTION	CURRICULUM
What changes to your classroom setting can you make to better support the suspected primary disabilities? These strategies and adaptations may include ideas for supporting the student who displays sensory issues, motor issues, organizational issues, communication issues, anxiety issues, and academic issues. e.g. providing visual directions or colour-coding [illegible] for the student with memory issues	Which instructional strategies can you try that would support the suspected primary disabilities? Again, these strategies may address a student who displays sensory, motor, organizational, communication, anxiety, and academic issues, but maintains a focus on building on strengths and supporting the primary disabilities. e.g. providing transition warnings for a student who perseverates or presenting one direction at a time for students who process more slowly	How can we make the curriculum, resources, materials, and activities a better fit for this student? Taking into account the student's strengths, interests, and learning style plus any sensory, motor, organizational, communication, anxiety, and academic issues, which resources or adaptations to materials/activities/assessment will best serve this student? e.g. for the student who gets frustrated by the amount of work, chunk that work into more manageable pieces

Appendix C
Informed Consent – Survey

Researcher: Meredith Keery – UNBC Master of Education (Special Education) Student

250-981-0231 or keerym@unbc.ca

Supervisor: Dr. Andrew Kitchenham – UNBC School of Education Chair and Professor

250-960-6707 or andrew.kitchenham@unbc.ca

Thank you for agreeing to take part in this survey which is being conducted by me, Meredith Keery, as part of a study entitled, *BC Teachers' Experiences with the LEIC Planning Tool: A Mixed-Methods Study.* This study is part of my Master of Education (Special Education) at the University of Northern British Columbia.

As an educator and teacher consultant with the Provincial Outreach Program for FASD (POPFASD) I am interested in gathering information from BC teachers who have taken POPFASDs online or workshop training on the LEIC planning tool to understand their experiences with this tool.

The survey should take approximately 15-20 minutes to complete. There are no known or anticipated risks. The benefits associated with this study are several and include: (a) assisting you in expressing views on the LEIC; (b) providing feedback on the tool which might then be used by POPFASD to enhance or improve the tool (c) participating research on the LEIC where no previous professional research exists.

Your participation in this research is completely voluntary. In terms of protecting your anonymity, the survey does not require you to identify yourself or provide contact information. If, however, you do agree to participate in the one-on-one interview, you will be giving up any anonymity. Should you provide name or contact information on the survey this information will not become part of my survey analysis and further information regarding the interview process, as well as confidentiality will be provided prior to the commencement of the interview process.
I will consult with my supervisor, Dr. Andrew Kitchenham, but he will only have access to the anonymized data.

Your confidentiality and the confidentiality of the data will be protected in a locked filing cabinet my home office and on my password-protected computer. The results of this study will be shared as a thesis for my Master's qualifications. It is also anticipated that the aggregated results will be shared with POPFASD. Any individual participant can also receive the thesis, upon written or spoken request.

This research may also lead to an invitation to present at scholarly meetings or be published in scholarly journals. The data from this study will also be kept until for five

years following the completion of the project (anticipated date: May, 2017) and then will be disposed of by shredding the paper copies, erasing electronic data, and destroying any recordings.

As a researcher, I have sought a review of the ethics application of this study and the UNBC Research Ethics Board has completed and indicated that I may conduct this study. If you have any questions, you can contact me at 250-981-0231 (cell) or by email at keerym@unbc.ca. For any concerns or complaints you might have about the research, please contact the Office of Research at the University of Northern British Columbia (250.960.6735) or via email at reb@unbc.ca.

By clicking on the survey link button you are agreeing to take this survey. If you would like a printed version of the consent form, you can click on the link to create a .pdf version for printing. Thank you for your interest and participation in this study. I genuinely appreciate your time.

Appendix D
Informed Consent - Interviews

Researcher: Meredith Keery – UNBC Master of Education (Special Education) Student
250-981-0231 or keerym@unbc.ca

Supervisor: Dr. Andrew Kitchenham – UNBC School of Education Chair and Professor
250-960-6707 or andrew.kitchenham@unbc.ca

You are invited to participate in a study entitled, *BC Teachers' Experiences with the LEIC Planning Tool: A Mixed-Methods Study,* which is being conducted by me as part of my Master of Education (Special Education) program at the University of Northern British Columbia.

As an educator and teacher consultant with the Provincial Outreach Program for FASD (POPFASD), I am interested in interviewing teachers who have taken POPFASD's online or workshop training on the LEIC planning tool to understand their past and continued experiences with this tool. The interview will be audio-recorded, transcribed, collated, and analyzed by me.

If you agree to participate in this research, you will have a series of questions posed to you by me. The interview will be conducted in person, whenever possible; otherwise the interview will be conducted using Blackboard Collaborate or by phone. The questions will be about your experiences with the LEIC planning tool and you will be (or have been) provided with the core questions in advance. You were chosen because you responded to a survey in which you indicated a willingness to participate in a further interview and because you have undertaken POPFASD's online or workshop training on the use of the LEIC planning tool.

The interview should take approximately NINETY minutes and will be conducted at the best location for you. The sessions will be audio-taped. You will have the opportunity to review and verify the transcribed interview. Participation in this study may cause some inconvenience to you, including the time taken to read this consent form to participate in the interview, and to review the interview transcription. There are no known or anticipated risks to you by participating in this research but some questions or statements could evoke an emotional response. If emotions are raised, I encourage you to either let me know as it could be pertinent to my research or skip the question. Although it is unlikely that you will interact with any other interviewees please remember not to discuss the questions and or answers with other interviewees so as to maintain anonymity.

The benefits associated with this study are several and include: (a) assisting you in expressing views on the LEIC; (b) providing feedback on the tool which might then be

used by POPFASD to enhance or improve the tool; and (c) contributing to research on the LEIC where no previous professional research exists.

Your participation in this research is completely voluntary. If you do agree to participate, you may withdraw at any time without any consequences or any explanation. If you do withdraw from the study, your data will not be used in the analysis and it will be destroyed unless you expressly request that the information you have provided up to the time of your withdrawal be retained in the study.

In terms of protecting your anonymity, I will use pseudonyms for participants so that the real identities are not evident. I will also change information or combinations of information (e.g., particular experiences in a particular role), so a participant's identity will be kept anonymous as much is possible. As mentioned, all interview responses will be transcribed by me. I will consult with my supervisor, Dr. Andrew Kitchenham, but he will only have access to the anonymized interview data.

Your confidentiality and the confidentiality of the data will be protected in a locked filing cabinet my home office and on my password-protected computer. The results of this study will be shared as a thesis for my Master's qualifications. It is also anticipated that the aggregated results will be shared with POPFASD. Any individual participant can also receive the thesis, upon written or spoken request.

This research may also lead to an invitation to present at scholarly meetings or be published in scholarly journals. The data from this study will also be kept for five years following the completion of the project (anticipated date: May, 2017) and then will be disposed of by shredding the paper copies, erasing electronic data, and destroying any recordings.

As a researcher, I have sought a review of the ethics application of this study and the UNBC Research Ethics Board has completed and indicated that I may conduct this study. If you have any questions, you can contact me at 250-981-0231 (cell) or by email at keerym@unbc.ca. For any concerns or complaints you might have about the research, please contact the Office of Research at the University of Northern British Columbia (250.960.6735) or via email at reb@unbc.ca.

Your signature below indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered. Thank you for your interest and participation in this study. I genuinely appreciate your time.

_____
Signature

_____
Printed name

_____
Date

Appendix E
Notification in POPFASD Monthly Newsletter

Meredith Keery is looking for BC teachers to participate in an online survey. This survey is part of a Master's thesis entitled, *BC Teachers' Experiences with the LEIC Planning Tool: A Mixed-Methods Study,* which is being conducted by Meredith as part of her Master of Education (Special Education) program at the University of Northern British Columbia.

As an educator and teacher consultant with the Provincial Outreach Program for FASD (POPFASD) Meredith is interested in surveying teachers who have taken POPFASDs online or workshop training on the LEIC planning tool.

If you have taken POPFASDs online or workshop training on the LEIC planning tool in the last ten years and are interested please click on the following link.

The survey takes approximately 15-20 minutes to complete. Thank you for your interest and support.

Researcher: Meredith Keery – UNBC Masters of Special Education Student
250-981-0231 or keerym@unbc.ca

Supervisor: Dr. Andrew Kitchenham – UNBC
250-960-6707 or andrew.kitchenham@unbc.ca

Appendix F
Recruitment Email to POPFASD District Partners

Good Afternoon Everyone,

I am working on my Master's Thesis - topic is the LEIC planning tool and I am having difficulties with getting the 100-150 survey respondents I need. My supervisor has suggested an "incentive" and so I have added an incentive. If you have a means of sending out the attached request for survey participants I would appreciate your help.

Thank you and have a good weekend.

Meredith

Appendix G
Request for Permission – POPFASD and Response

Mr. C. Molcak,
Supervising Administrator for POPFASD
3400 Westwood Drive
Prince George, BC
V2N 1S1

Dear Mr. Molcak,

As part of my Master of Education (Special Education) program at the University of Northern British Columbia, I am completing a study entitled, *BC Teachers' Experiences with the LEIC Planning Tool: A Mixed-Methods Study.*

As an educator and teacher consultant with the Provincial Outreach Program for FASD (POPFASD), I am interested in surveying as many teachers as possible who have taken POPFASD's online or workshop training on the LEIC planning tool to understand their continued experiences with this tool. At the end of the survey, I will be asking teachers if they would be willing to participate in an in-depth interview that will allow me to probe deeper into their experiences with the LEIC. I plan to interview between four and eight teachers. The interview will be audio-recorded, transcribed, collated, and analyzed by me.

I am seeking POPFASD's permission to:

1) Access POPFASD's database for names and email addresses of teachers who have participated in online training over the past ten years so that I may contact them to ask them to participate in the online survey.
2) Use POPFASD's monthly newsletter to seek the interest of teachers in completing a survey as a second method for gathering survey participants. Enclosure – suggested notification for newsletter.
3) Use POPFASD's website to create a page where interested participants can access the survey and also download and print a copy of the consent letter.
4) Finally, use POPFASD's Blackboard Collaborate interface to conduct interviews with teachers where I cannot conduct face-to-face interviews. While the telephone will be presented as an option, I feel Blackboard Collaborate will provide a more comfortable environment for participants and allows for recording.

I anticipate posting information in POPFASD's December and January newsletters and providing a link to the survey and consent letter until the middle of March.

Interview and survey participants will be provided with a consent letter that outlines the purpose, benefits, and risks associated with this study. The benefits include:

(a) assisting teachers in expressing views on the LEIC; (b) providing feedback on the tool which might then be used by POPFASD to enhance or improve the tool; and (c) participating in research on the LEIC where no previous professional research exists. There are no known or anticipated risks but participants will be told that it is recognized that by participating in a survey or interview some questions or statements could evoke an emotional response and if emotions are raised, they will be encouraged to either let me know as it could be pertinent to my research or to skip the question.

The consent letters also provide information regarding issues of confidentiality and an understanding that the UNBC Research Ethics Board application process will have been completed and reviewed prior to commencing any research. No names will be required to complete the survey. If, however, at the end of the survey, they agree to participate in an interview then they will be giving up anonymity by providing a name and contact information. This will be clearly identified at the end of the survey, prior to providing contact information. Interview participants will be informed that they may withdraw at any time without any consequences or any explanation. If they do withdraw from the study, data will not be used in the analysis and it will be destroyed unless they expressly request that the information they have provided up to the time of their withdrawal can be retained in the study.

Thank you for your time and consideration. I look forward to hearing from you soon.

Sincerely,

Meredith Keery

Enclosure

Researcher: Meredith Keery – UNBC Masters of Special Education Student
250-981-0231 or keerym@unbc.ca

Supervisor: Dr. Andrew Kitchenham – UNBC
250-960-6707 or andrew.kitchenham@unbc.ca

From: **Chris Molcak** Friday, November 04, 2016 10:19:48 AM

Subject: Re: Request from POPFASD to support my Masters Thesis

To: **Meredith Keery**

Hi Meredith

Please proceed :) Best of luck on the research!

Chris
Principal - FASD Outreach

Meredith Keery writes:
Hello Chris,

Please find attached a letter requesting the support of POPFASD as I endeavour to undertake research on the LEIC planning tool. I know that on Friday we talked about various aspects of this request and I have since gone away and clarified in my own mind what it is that I am requesting. I am hoping to have my proposal into my supervisor, Dr. Andrew Kitchenham, this week and it is also my plan to have my application to UNBC's Research Ethics Board (REB) by November 9, 2016. The final deadlihne for this month is November 10th. My application will require consent from POPFASD on the items outlined in the letter. I have also included a copy of the proposed notification that would go into the newsletter. I would appreciate it if this consent could be in written format so that I can submit this along with my application to the REB, could you also identify in the letter that you have approved the newsletter notification (if you do).

Please let me know if you need clarification on anything. I appreciate your consideration Chris.

I apologize in advance if you receive with these documents the "feedback bullets" from Dr. Kitchenham. Something is up with my computer and I can't always get them to disapper.

Meredith

Meredith Keery
Teacher Consultant
Provincial Outreach Program Fetal Alcohol Spectrum Disorder (POPFASD)
T: (250) 564-6574 local 2024
www.fasdoutreach.ca

Appendix H
Seeking Consent for Research, School District #57 and Response

SCHOOL DISTRICT NO. 57(PRINCE GEORGE)
2100 Ferry Avenue, Prince George, B.C. V2N 4R5 Phone: (250) 561-6800 • Fax (250) 561-6801 www.sd57.bc.ca

Meredith Keery
28130 Ness Lake Road
Prince George BC
V2K 5N1

November 8, 2016

Dear Ms. Keery,

This letter is to confirm your request to conduct research in School District 57. As we discussed, the school district recognizes the integral part that research plays in education. We support the research sponsored by our local tertiary institutes as a priority. Your project, "BC Teachers Experiences with the LEIC Planning Tool: A Mixed Methods Study", is intriguing and should provide useful information for you and the district.

This letter's purpose is to indicate that you have district approval to proceed with your project. "District approval" allows the researcher to approach principals and subsequently teachers or other staff to request their permission to conduct research in the school/classroom.

If you have any questions, please do not hesitate to call me. Good luck with your project. I look forward to receiving a copy of the final report.

Sincerely,

C Heitman

Cindy Heitman
District Principal, Learning Innovations

Appendix I
Online Survey Questions

LEIC Tool Survey

(A. Have you participated in POPFASD's LEIC planning tool training?

Response	Chart	Percentage	Count
a. Face-to-face workshop		0.0%	0
b. Online training course		0.0%	0
c. Both workshop and online training		0.0%	0
d. No training then can't go any further but say "thanks"		0.0%	0
		Total Responses	**0**

B. Have you participated in POPFASD's online training more than one time?

Response	Chart	Percentage	Count
Yes		0.0%	0
No		0.0%	0
		Total Responses	**0**

C. Have you participated in a POPFASD's workshop that included the LEIC training more than one time?

Response	Chart	Percentage	Count
Yes		0.0%	0
No		0.0%	0
		Total Responses	**0**

D. In what year did you last participate in a POPFASD training that included the LEIC planning tool? If you do not recall, write "unsure".

There are no responses to this question.

E. How many years have you been teaching?

Response	Chart	Percentage	Count
a. 0-5		0.0%	0
b. 6-10		0.0%	0
c. 11-15		0.0%	0
d. 16-20		0.0%	0
e. 21-25		0.0%	0
f. More than 25 years		0.0%	0
		Total Responses	**0**

F. What best describes your present teaching role?

Response	Chart	Percentage	Count
a. Resource or support		0.0%	0
b. Classroom		0.0%	0
c. Counsellor		0.0%	0
Other, please specify...		0.0%	0
		Total Responses	**0**

G. If you are a classroom teacher, what grade grouping best describes your present teaching assignment?

Response	Chart	Percentage	Count
a. K to 3		0.0%	0
b. 4 to 7		0.0%	0
c. 8 to 10		0.0%	0
d. 11 to 12		0.0%	0

	Total Responses	0

H. If you are a non-enrolling teacher what level of school do you teach in?

Response	Chart	Percentage	Count
a. Elementary		0.0%	0
b. Secondary		0.0%	0
Other, please specify...		0.0%	0
		Total Responses	0

I. In what type of school are you employed?

Response	Chart	Percentage	Count
Public		0.0%	0
Private/Independent		0.0%	0
		Total Responses	0

A. Have you used the LEIC planning tool to plan for a student or students with FASD?

Response	Chart	Percentage	Count
Yes		0.0%	0
No		0.0%	0
		Total Responses	0

B. Have you used the LEIC planning tool to plan for a student or students with Complex Learning Needs (CLN)?

Response	Chart	Percentage	Count
Yes		0.0%	0
No		0.0%	0
		Total Responses	0

C. Have you used the LEIC planning tool to plan for a student or students with an exceptionality but not FASD or CLN?

Response	Chart	Percentage	Count
Yes		0.0%	0
No		0.0%	0
		Total Responses	**0**

D. If you answered yes to any of the three previous questions, how frequently do you use this tool?

Response	Chart	Percentage	Count
a. Once a year		0.0%	0
b. 2 – 3 times a year		0.0%	0
c. More than 3 times a year		0.0%	0
		Total Responses	**0**

E. If you answered no to any of the three previous questions, please explain why you didn't use the LEIC.

There are no responses to this question.

F. Do you use this tool on your own?

Response	Chart	Percentage	Count
Yes		0.0%	0
No		0.0%	0
		Total Responses	**0**

G. Do you use this tool collaboratively?

Response	Chart	Percentage	Count
Yes		0.0%	0

No		0.0%	0
		Total Responses	**0**

H. If collaboratively, please note who is typically involved in the collaborative process?

Response	Chart	Percentage	Count
a. classroom teacher		0.0%	0
b. resource or support teacher		0.0%	0
c. education assistant		0.0%	0
d. counsellor		0.0%	0
e. youth care worker		0.0%	0
f. aboriginal education worker		0.0%	0
g. principal or vice-principal		0.0%	0
h. POPFASD District Partner		0.0%	0
i. school psychologist		0.0%	0
j. school speech and language pathologist		0.0%	0
k. school occupational therapist		0.0%	0
l. parent		0.0%	0
m. student		0.0%	0
n. key worker		0.0%	0
Other, please specify...		0.0%	0
		Total Responses	**0**

I. Have you ever sought from POPFASD, additional support, beyond online or workshop training to enhance your ability to use this tool. This could include your District Partner

Response	Chart	Percentage	Count
Yes		0.0%	0

No		0.0%	0
		Total Responses	0

J. Consider the use of the LEIC Planning Tool and please indicate on a scale of 1-9 (1=strongly disagree, 9=strongly agree)

	1	2	3	4	5	6	7
The LEIC planning tool is user-friendly and supports my ability to plan for students.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
I know how to complete the top section or LEARNER section of the LEIC planning tool.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
The layout of the LEARNER section is easy to follow.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
I know how to complete the middle or GOOD FIT/POOR FIT section of the LEIC planning tool.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
The layout of the middle or GOOD FIT/POOR FIT section is easy to follow.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
I know how to complete the bottom or ENVIRONMENT/INSTRUCTION/CURRICULUM section of the LEIC planning tool.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
The layout of the bottom or ENVIRONMENT/INSTRUCTION/CURRICULUM section is easy to follow.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
	0 (0.0%)	1 (100.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

K. Consider the LEIC Planning Tool and please indicate on a scale of 1-9 (1=strongly disagree, 9=strongly agree)

	1	2	3	4	5	6	7	8
The LEIC planning tool is user-friendly and supports my ability to plan for students.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (

I know how to complete the top section or LEARNER section of the LEIC planning tool.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
The layout of the LEARNER section is easy to follow.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
I know how to complete the middle or GOOD FIT/POOR FIT section of the LEIC planning tool.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
The layout of the middle or GOOD FIT/POOR FIT section is easy to follow.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
I know how to complete the bottom or ENVIRONMENT/INSTRUCTION/CURRICULUM section of the LEIC planning tool.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
The layout of the bottom or ENVIRONMENT/INSTRUCTION/CURRICULUM section is easy to follow.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0

L. Consider the brain-based elements of the LEIC Planning Tool, please indicate on a scale of 1-9 (1=strongly disagree, 9=strongly agree)

	1	2	3	4	5	6	7	8	9	Total Responses
The guiding questions (on the back of the LEIC) help with determining how to complete the LEIC planning tool.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
I consider the link between the possible primary disability and expectations when	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0

completing the LEIC planning tool.										
I consider the link between the possible primary disability and secondary disabilities when completing the LEIC planning tool.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
Considering the setting for secondary behaviours (when, where, how often) helps with planning.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
When planning accommodations or strategies I frequently reflect on the possible primary disabilities.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
When planning accommodations or strategies I frequently reflect on and include strategies that support student strengths, interests, and learning styles.	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0

M. What are the strengths of the LEIC planning tool?

There are no responses to this question.

N. What are the weaknesses of the LEIC planning tool?

There are no responses to this question.

Please provide your contact information if you are willing to take part in an interview either in person, on the phone, or via Blackboard Collaborate.

Variable	Response
Name	There are no responses to this question.
Email	There are no responses to this question.
Phone Number	There are no responses to this question.

Appendix J
Semi-Structured Interview Questions

Pre-Interview Information
Date:
Face-to-Face:
Phone:
Blackboard Collaborate:

Participant Information
Pseudonym:
Teaching Role:
Teaching Experience (years):
Teaching Level or Grade Group:

I appreciate your willingness to be interviewed today. As I indicated earlier, I am a Master of Education (Special Education) student at the University of Northern British Columbia and I am completing a study entitled, *BC Teachers' Experiences with the LEIC Planning Tool: A Mixed-Methods Study.*

As an educator and teacher consultant with the Provincial Outreach Program for FASD (POPFASD), I am interested in interviewing teachers who have taken POPFASD's online or workshop training on the LEIC planning tool to understand their past and continued experiences with this tool. The interview should take approximately NINETY minutes.

There are no known or anticipated risks to you by participating in this research but some questions or statements could evoke an emotional response. If emotions are raised, I encourage you to either let me know as it could be pertinent to my research or skip the question.

The benefits associated with this study are several and include: (a) assisting you in expressing views on the LEIC; (b) providing feedback on the tool which might then be used by POPFASD to enhance or improve the tool; and (c) contributing to research on the LEIC where no previous professional research exists.

Your participation in this research is completely voluntary. If you do agree to participate, you may withdraw at any time without any consequences or any explanation. If you do withdraw from the study, your data will not be used in the analysis and it will be destroyed unless you expressly request that the information you have provided up to the time of your withdrawal be retained in the study.

In terms of protecting your anonymity, I will use pseudonyms for participants so that the real identities are not evident. I will also change information or combinations of information (e.g., particular experiences in a particular role), so a participant's identity

will be kept anonymous as much is possible. All interview responses will be transcribed by me and you will have an opportunity to review the transcripts. I will consult with my supervisor, Dr. Andrew Kitchenham, but he will only have access to the anonymized interview data.

Your confidentiality and the confidentiality of the data will be protected in a locked filing cabinet my home office and on my password-protected computer. The results of this study will be shared as a thesis for my Master's qualifications. It is also anticipated that the aggregated results will be shared with POPFASD. Any individual participant can also receive the thesis, upon written or spoken request.

You have been given and have signed a consent letter outlining this and other elements of this research study. Before we begin the interview do you require time to review the consent or do you have any questions?

1. Tell me about your teaching experience, the grade or grades you teach, the subject, the role you have in your school?
2. Have you taken any POPFASD courses? If so, were they online or in person.
3. What made you decide to take POPFASD training?
4. Did you participate with colleagues? What colleagues?
5. Did the course include the LEIC planning tool?
6. Tell me about your experience using the LEIC planning tool since you took POPFASD training. (Prompt: consider positives, negatives, advantages, disadvantages).
7. Were colleagues involved in the planning process? Did it include anyone from outside the school? The student? The parents? Tell me about the collaborative process. (Prompt: consider positives, negatives, advantages, disadvantages).
8. How helpful did you find the layout of the LEIC?
9. Walk me through the process of filling out the three sections.
10. What were the challenges, if any, in completing the sections?
11. After you complete or completed the LEIC tell me what you did next.
12. In your experiences, tell me what you have used the LEIC planning tool for up until now.
13. "On question "x" you indicated… Can you tell me more about…." and others may arise spontaneously out of the interview itself.