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## INTERNATIONAL EDUCATIONAL TECHNOLOGY CONFERENCE

### AUGUST 16-18, 2017

**LOCATION:** HARVARD UNIVERSITY CAMPUS, CAMBRIDGE, MA, USA

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# THE POSSİBİLİTİES OF MUSİC AND LANGUAGE ACQUİSİTİON: A PROPOSED PAR STUDY

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## INTRODUCTION AND CONTEXT

Norris (2007) states that Indigenous people in Canada are the fastest growing population in Canada; specifically, Indigenous people living in urban areas are the fastest growing segment of the Canadian population. Given the significant population growth, this study focuses on methods to enhance the educational experience for youth studying Indigenous languages. Specifically, the study will explore the use of music in second language classes to increase understanding and engagement of students using a participatory action research model. A Participatory Action Research (PAR) committee will be constituted, and research involving the following classes will be submitted for its approval: A Grade Two Chipewyan Language class in Fort Smith, NWT, a Grade Two Cree Language class in Yellowknife, NWT, and a Grade Two French Immersion class in Edmonton, Alberta.

Traditional languages such as Cree and Chipewyan are being taught as second languages in the NWT. A search in the Government of Northwest Territories online database through the Aurora College Institute of Research website reveals little research on music and language. Fifteen articles were found on the music of the Inuit, but no articles or research was located specific to the South Slave region of the Northwest Territories. This study will explore the possible influence music can have on second language acquisition. Maley (1987), in his article, *Poetry and song as language-learning activities,* states, … "one of the key factors in learning a foreign language is the ability and opportunity to play with it, test its elasticity" (94). Music allows students to do just that, in any language. Usborne, Peck, Smith and Taylor (2011) discuss Aboriginal language revitalization and describe it as one of the most important challenges Canada faces today. Usborne et al. (2011) state that of the fifty-three traditional languages originating in Canada only three currently have adequate chances of survival: Cree, Inuktitut, and Ojibway. Interestingly, two of the three languages noted for having the best chance of survival are spoken in the Northwest Territories (Cree and Inuktitut), and two are spoken in Alberta (Ojibway and Cree).

### Statement of Purpose

The purpose of this study is to explore the factors that may impact the learning of a second language or (SL) among Aboriginal and French students in Northern Canada and Alberta with a specific focus on Grade Two students. The study will investigate how music might improve SL acquisition. Quantitative baseline assessments will be used in all three classes with pre and post testing to see if there is an increase in second language acquisition. Specifically, twenty-five key vocabulary terms will be used in French, Chipewyan, and Cree selected by the PAR committee. Each teacher involved in the study will be asked to conduct a pre-test to establish a baseline of knowledge of these terms. The first cycle of this research project focuses on developing key terms. During cycle two the pre and post testing will take place. During cycle three, the Participatory Action Research committee will determine if the same vocabulary should be tested again or if new vocabulary can be added.

### Research Question(s)

Sagor (2005) notes that action research generally has two purposes; one purpose is to determine what is occurring in the research site, and the other is to test a hypothesis. This research project will attempt to do both. We will observe the integration of music in second language classes while testing the hypothesis that music assists with memory retention and student engagement. Our research question will focus on music and second language acquisition: How can music influence second language acquisition in students from Grade Two in the Northwest Territories and

Alberta? Follow-up questions will be designed, using a participatory action research model in which participants will be given the opportunity to design the research questions. Proposed questions presented to the PAR committee include: How does music engage your students? How is engagement measured? What types of assessments do you use to measure language learning? How can drumming/singing impact second language acquisition? The participatory action research committee, which will comprise one school board member from the NWT, one parent from Edmonton, one elder from the NWT, three teachers, and two co-researchers will discuss each of the questions prior to interviewing and surveying the teachers involved in the participatory action research project.

### Purpose and Analysis

Possible factors impacting second language acquisition in Canada, according to Norris (2007), include but are not limited to the legacy of residential schools, increased migration of Aboriginal peoples between communities and cities, linguistic intermarriage, and inadequate access to technology. For French immersion schools, lack of strong language models and resources could impact SL growth. Aboriginal languages are in jeopardy of survival across Canada. Usborne et al. (2011) note that a little over seventeen percent of the Canadian population is fluent in a traditional Aboriginal language, whereas Berger (2006) notes that in Nunavut proficiency rates are much higher. Within the Francophone community, the Office of the Commissioner of Official Languages states that 225,035 Albertans are Francophone. The same site shares that, "...nearly 2 million Canadian students are studying French as a second language, in either core or immersion programs (Alberta Culture and Tourism Francophone Secretariat, 2015). In total, 9,590,700 persons are considered to be Francophone across Canada. French is a growing language in Alberta while Cree and Chipewyan have seen a decline since 1989, according to the NWT Bureau of Statistics (Northwest Territories Bureau of Statistics, 2014).

In the Northwest Territories, the proficiency rates have also decreased since Nunavut split from the NWT in 1999. Norris (2007) states that declining trends in the intergenerational transmission of Aboriginal mother tongues are being offset due to these languages being learned as second languages. Music and fine arts are positive ways to promote language acquisition development/acquisition. Programs such as CODE (Council of Ontario Dance and Educators) are created throughout Canada to assist teachers with educating through the stream of Fine Arts. CODE allows for music and poetry to make readers aware of "...pitch, tempo, tone [and] develop the use of voice production stages: Respiration, Phonation, Resonation, Articulation" (2015). CODE is another program designed to assist teachers developing language through Fine Arts.

### METHODOLOGY

Sagor (2005) notes that the first step to any successful action research project is to have a clear vision. Secondly, you should articulate your theory or hypothesis clearly. Our hypothesis is based on the previous academic research conducted by Chan, Ho, and Cheung (1998) who have stated that adults who participate in music training before the age of twelve have a better memory of spoken words than those who do not, asserting that music training in childhood has long-term positive effects on verbal memory. Chan et al. (1998) have shown this by using magnetic resonance imaging. The left planum temporale region of the brain is larger in musicians than non-musicians. (p. 1) Verbal memory is located primarily in the left region temporal lobe; thus, musicians should have stronger abilities for verbal memory.

Based on the work of Chan et al. (1998), researchers Devin Roberts and Sarah Novosel have a clear vision that music can improve memory retention and increase student engagement in second language courses. We want to share this vision with our participants so that we can build a shared ownership of the project using a PAR model. Hinchey (2008) discusses the importance of buy-in from stakeholders when conducting action research. A participatory action research model will be followed in which willing participants will form a PAR committee to assist in creating the design research questions. This committee will include a parent representative, an Elder, the three classroom teachers directly involved in the study, co-facilitators of the PAR project and one school board official (See Appendix C).

Simpson (2001) and Cajete (1999), who encourage researchers to consider Aboriginal perspectives, warn against colonialism in modern research. Simpson (2001) states that teaching and learning Aboriginal students must entail employing the processes of Indigenous teaching and learning encompassed in Indigenous methodologies. Using a PAR model will allow the Aboriginal perspective to influence and shape the direction of our research and will encourage participant buy-in of the findings and recommendations. Findings of the study will be shared with the participants to gather their thoughts and insights before publishing final recommendations. There will be three teachers interviewed pending PAR committee approval. McNiff (2013) discusses the use of action reach in the natural world. McNiff (2013) encourages the researcher to facilitate action research in a natural way allowing for the research itself to shape questions and findings. We will allow our PAR committee to develop the research as we progress by changing questions or the length of our AR cycles. Student satisfaction and success with music and language acquisition will be the focus of all PAR committee decisions.

To ensure our students feel successful during the study, we will consider the work of Vygotsky (1987). Vygotsky's (1987) zone of proximal development is a theoretical idea that a task should be neither too difficult nor too easy for students. Students need to move smoothly through a zone of proximal development, feeling successful step by step. Vygotsky (1978) also indicates that language acquisition in children occurs in social interactions, as he observed in the 1920's and 30's. Our study will include both aspects of Vygotsky's (1978) work, as children will be interacting in classroom activities and the vocabulary words being taught to students will be scaffolded from simple to complex terms. For example, first, a root word will be taught, followed by family terms. It is important for students to feel successful while being challenged. Term selection and teaching strategies will be approved by our PAR committee.

To empower communities, one representative will act as a liaison to develop and screen potential survey questions. Appendix A provides a breakdown of the format of all the research, including both qualitative and quantitative data collection. The researchers will engage stakeholders at the various stages of the action research cycle with a particular focus on the design stage, communication outcomes stage, and the taking action stage. This engagement is subject to our PAR committee approval.

**Participants**

Three classrooms will be suggested to the Participatory Action Research committee. It should be noted that the PAR committee will be granted the opportunity to change or add schools to the study. The following schools are suggested: A Grade Two Chipewyan Language and Culture class in Fort Smith Alberta, a Grade Two Cree Language & Culture class in Yellowknife, and a Grade Two French Immersion classroom in Edmonton, Alberta. The suggestion of Grade Two students in Yellowknife and Fort Smith was purposeful; they will be compared to their counterparts at the same grade level in Alberta. The instructors involved have experience using traditional drumming and singing in their classrooms, which will be used consistently. The selection for Grade Two French Immersion students was purposeful; the Grade Two FI class is already involved with music, but music instruction will be more consistent during this time. Programs such as Jolly Phonics or AIMS will be suggested pending approval of the committee. Jolly Phonics is a song-based program used to instill the proper use of sounds of the French language in a learner's vocabulary. AIMS is an action program in which every French word, or gender word, is assigned an action. This allows for the movement to influence a second language in a learner.

**Ethical Considerations**

Kemmis and McTaggart (2007) state that following a participatory action research model does not guarantee empowerment of participants involved with research cycles, especially those such as ours that requires their input. The researchers will follow ethical standards that are outlined by the University of Calgary Conjoint Faculties Research Ethics Board, to ensure participants truly have a voice at each stage of the research. Using a PAR approach to research, Smyth and Williamson (2004) noted that creating a research advisory group made of various stakeholders including policy makers and service deliverers was important to respecting ethical guidelines in their project studying war-affected populations in Northern Ireland. Smyth and Williamson (2004) note,

"A research advisory group was established for each project, and representatives of donors, policy makers, and service providers were invited to participate in that group, which monitored the research design, piloting, fieldwork and other data collection, analysis and documentation and dissemination." (p. 146)

For this PAR project, both our PAR committee and the supervisory committee established through the University of Calgary will oversee the research. The committees will advise us on stakeholder engagement and ensure we are following ethical guidelines. The PAR committee will provide documentation, including the guidelines and policies of the University of Calgary Conjoint Faculties Research Ethics Board. The supervising committee will be able to point out ethical considerations for the researchers to consider; however, ultimately it will be the researchers' responsibility to conduct ethical research.

## Consent Plan

Leadbeater (2006) asks whether individual youth participants are competent to give consent or assent. This, in turn, raises questions about the appropriate gatekeepers or guardians who can give consent or speak on their behalf. In Canada, young people's legal right to consent to research participation varies by province. In Alberta, the age of consent is eighteen, and in the NWT it is nineteen. The University of Calgary Conjoint Faculties Research Ethics Board, which follows the Government of Canada's Panel of Research Ethics standards, states that young people between sixteen and eighteen years of age with sufficient understanding are able to give their full consent to participate in research independently of their legally authorized representative. As the study will be working with students in Grade Two between the ages of eight and nine years, parental consent will be necessary.

Without parental consent, ethical and practicality issues will arise. Because the key vocabulary used will be pulled from provincial and territorial curricula, all students can participate in the class activities that involve music-based activities. The three teachers involved in the study will be asked not to share the results of the students without consent. The researchers involved with the study will be aware of who these students are based on the collection of consent forms and will also ensure that their information is excluded from the study. Initial consent will be applied to the University of Calgary Conjoint Faculties Research Ethics Board that reviews research ethics. The Government of the Northwest Territories requires all research involving human subjects to follow the guidelines and application process of the Aurora College Institute for Research. Once permission has been received from the University of Calgary in conjunction with the policy and procedures of the Tri-County Research Ethics Committee, Aurora College's application process will begin. In total, it could take up to two months to complete. Thus, with respect to commensurability of the project, application for this should begin as early as August of 2018. Both school boards/districts involved with the study will need to give their permission and will require their own consent forms to be signed by participants. As early as September of 2017 the specific school boards involved will be contacted, and permission for research involving primarily teachers, but also students, will be requested. The two respective school boards have indicated that permission can be obtained within four weeks, but this is subject to change. The action research project itself will not be scheduled to fully commence until January of 2019 to allow all necessary paperwork, consent and permission to be obtained. The expected completion of the research would be January of 2020, allowing one year to conduct all relevant research with regards to this action research project. This would allow for a total of six months to a year for a review of the findings of the research to be shared with stakeholders and the PAR committee involved with the initial design of the project. The PAR committee can decide to extend or shorten the study's timelines.

An incommensurable aspect of our research would be the wide range of students and teachers involved in the study. There would be a major discrepancy in the years of experience as well as the education of the participants in Alberta and the NWT. The Northwest Territories does not require Aboriginal Language and Culture teachers to hold a Bachelor of Education degree. However, in Alberta, French language teachers are required to hold a B.Ed. However, as of late, and due to lack of language teachers available, the Edmonton Catholic School District has begun to hire Educational Assistants with language backgrounds (such as French), to instruct certain courses where class sizes are larger than 25 (Veilleux & Bournot-Trites, 2005). These Educational Assistants then become instructors, and because they do not hold a degree in Education, must then be supervised in some capacity. Aboriginal Language and Culture teachers can prove their competency through completing language aptitude tests. There is a wide range of experience

and education with our ALC teachers. Some hold master's degrees, while others have immense on-land experience and knowledge. This could cause questions about the validity of the study's findings and raise ethical questions. It will be important that the study provides this information to the public.

As language revitalization is linked to the residential school experience, sensitivity must be given to the data collection process. Some participants who are educators may have been students in these schools. Bloomberg and Volpe (2012) suggest that the success of a study can be impacted if ethical standards are not met. The University of Calgary Conjoint Faculties Research Ethics Board refers to decision-making capacity as the ability of potential or actual participants to understand relevant information presented in research. The researchers must explain all aspects of the study to participants involved in Alberta and the NWT. Information will not be shared without proper consent being authorized due to learning being a sensitive topic.

## METHODS

"Participatory action research *does* provide opportunities for co-developing processes *with* people rather than *for* people" (McIntyre, 2007, p. 12). We intend to have all stakeholders involved in each cycle of our action research through collaboration and discussion, and with decisions based on the committee's approval. Koch, Mann, Kralik, and van Loon (2005) describe a similar three-cycle participatory action research project in which the researchers consulted Indigenous peoples in Australia by listening to the recommendations of participants involved in the research initially in shaping their questions. Koch et al. (2005) describe the importance of listening and responding to the voices of elders and stakeholders during the various cycles of PAR, especially in cycle one and three. Koch et al. (2005) state,

It is argued that reflection occupies a central place in participatory action research cycles of 'look, think and act.' 'Look, think and act' processes are appealing precisely because they are meaningful to research participants in their everyday lives. When these processes are internalized as modus operandi, they can be sustained throughout one's life as strategy for building capacity or moving on. (p. 261)

We will empower our educators in very much the same way as Koch et al. (2005) describe, ensuring that respective communities consider teachers, elders, parents, and school board officials. We will also recruit an elder to sit on our observation committee, advising the researchers on all three cycles of the action research project. In the second cycle, Koch et al. (2005) describe answering questions and conducting interviews via email. As bandwidth and Internet connectivity can be an issue in the NWT, the researchers involved may have to rely on the phone and in-person visits to receive the necessary participant feedback. This is why Yellowknife and Fort Smith were selected; these communities are relatively close to one another. Researcher Devin Roberts will be based out of Yellowknife and Fort Smith during the research cycles while Sarah Novosel will be living in Edmonton during the same time. These locations are subject to the approval of the PAR committee.

Koch et al. (2005) describe the third cycle of action research as capacity building. As we hope our research will have long-term significance for possible curriculum design and implementation, it will be important that our research committee is active in reviewing data collected and discussing future action. We hope to make recommendations that can be used by both the territorial government in the Northwest Territories and the possibly the provincial government in Alberta; thus, input for stakeholders will be essential. Elders, school board officials, and parents must see this research as their own and not simply something teachers and the researchers have designed and concluded. The findings of this study will be shared at the annual NWT Teacher's Association conference in February of 2021.

### Action Research Design

Hinchey (2008) shares that the most important thing to do first is to look at one's classroom and accept what needs to be changed. This is where a committee would be selected, and the group would discuss questions and concerns. One initial concept Hinchey (2008) states that could have an impact on the research is that for teachers, "…improvements they pursue are varied as teachers and classrooms themselves" (p.3). Therefore, the group will decide on one or two methods to try to improve language through music. Once the questions and specific musical strategies are decided upon, teachers will use these strategies in the classroom, with the support of the committee, to see if their strategy works. During this time, it is crucial that the teacher and committee members involved take various forms of data as

proof. From there, the committee will meet again to review data and decide what needs to change for the next cycle, and what can remain the same. Hinchey (2008) states,

It's not enough to plan and implement an action: its results must be systematically analyzed to determine whether or not the desired improvements have occurred and whether unintended consequences, good or bad, turned up well. For this reason, the process is generally described as being cyclical (p.4).

This cycle will be repeated two times before the final data is collected and analyzed. From this data, the committee will be able to make a final decision regarding music and best practices for its integration to support and improve language acquisition practices.

## Implementation Plan and Timeline

The implementation will begin on a set date, given by the committee, which ideally would be January of 2019. There will be regular check-in dates. "Check-ins" will be done through submitting reflection pieces, or answering questions created by the committee. "Checking in" will occur weekly. Check-ins will be the responsibility of the co-facilitators but will require the input of the teachers whose classrooms are being studied and the PAR committee. Sagor (2005) states that researchers should reflect on the experiences that are occurring and provide feedback to the participants involved deciding on what to focus on during the next cycle. In particular, it will be important to collect pre and post assessments on student performance during cycles one and two. Each cycle should last three months. This is because, in language programs, repetition and time are key for students in acquiring new skills. In total, this project will last nine months, which is almost an entire school year. Results from district mandated assessment tools can be used to measure student improvement between years, allowing the committee to come to stronger conclusions. The PAR committee can determine if a cycle needs to be shorter or longer.

## Knowledge Mobilization Plan

According to the University of Saskatchewan, "...knowledge mobilization requires careful thought and planning" (p.1, n.d.). This informational site also includes questions that researchers should include and respond to, to ensure the success of their research. These questions will be used in the various cycles to ensure that the plan is well developed and properly executed.

The first step is to "develop awareness or interest" (University of Saskatchewan, n.d., p.1). This will be done through collaborating with others in various provinces and providing documentation of questions or statistical facts to stir the curiosity of stakeholders and participants.

Second, the University of Saskatchewan suggests that one should, "generate practice change" (n.d., p. 1). This would include teachers being encouraged to try different strategies or materials when practicing music in the classroom. These purposeful choices impact results, so it is imperative that ethical considerations are taken into account.

"Public action/policy action" (n.d., p. 1) would be the end of the last cycle and is perhaps one of the more imperative steps. This is where the data, conclusions, results and information are shared. This information, however, should be used to improve communities. This is why stakeholders are crucial in the process when promoting change to a broken system. Levin states,

knowledge is socially constructed and its use takes multiple forms that can be more or less direct or more or less rapid, with slower and less direct impacts more common. Some of the most powerful examples of research knowledge leading to changes in policy and behavior—for example, smoking or use of seatbelts or the end of corporal punishment in schools—took several decades to evolve. (Levin, 2008)

The University of Saskatchewan also discusses the importance of "Gain[ing] new knowledge/further[ing] research" (n.d., p. 1). This knowledge may assist in determining future district or provincial goals, depending on how interest is developed, which is the first step in this plan. The new knowledge gained through data collection may also leave researchers or the community with new questions, allowing the research to be taken to a new level in the future.

**Significance of the Study**

It is the hope that the findings of this study could be used to assist in the development of new Indigenous and French language curriculum in Alberta and the NWT. Currently, the NWT and Alberta are in the midst of creating new language programs. Educators will have the opportunity to make suggestions for curriculum improvement. This study could be used as an example of how to involve second language learners in music to improve engagement and memory in the classroom.

This participatory action research project provides a case study that other schools can use as research to explore the use of music in the classroom with language learning. If the study can provide tangible evidence of music assisting with language acquisition across three diverse classes, it could prompt further research on the topic. It is also encouraged that research findings will demonstrate to teachers the importance of collaboration. Hopefully, a sense of community engagement and appreciation can be shared between the three communities, celebrating language and learning.

**CONCLUSION**

This research project suggests that there may be a relationship between music and second language learning when the educational experience is more enjoyable and engaging for students. However, beyond the mood and emotional connection music can provide, previous research suggests it can also assist with memory and language retention. Patel (2008) suggests that one can learn the "rhythm" of a language for accuracy with fluency and understanding for the listener. Patel (2008) suggests that this rhythm of language can be learned orally and through both singing and drumming. Maley (1987) also shares that music and poetry discuss "...themes/common to all cultures [such as] love, death, nature, children [and] religious belief[s]" (p.94). Conducted in three unique settings with two different languages, this action research project will demonstrate that music enhances a learning environment. It will be impossible to draw full conclusions until the research is complete. Pre/post- assessments during the first and second cycle of the action research project will also attempt to show a relationship between music and memory retention. (Refer to Appendix B for data collection cycles). Fisher and Frey (2014) discuss the importance of applying words one remembers from a language and moving from shallow knowledge of words such as remembering them, to applying vocabulary in spoken word and writing. Our pre and post assessments will test memory as well as the application of the language. The success of this three-cycle participatory action research project will hinge on the research committee's ability to complete the three cycles in a timely fashion. If disagreements about the types of questions and assessments occur, the proposed timelines may not be achieved. It will be the responsibility of the researchers to meet with the PAR committee regularly so that all members of the committee are active. We look forward to the challenge and opportunity this participatory action research project presents and welcome feedback from colleagues and the public regarding this upcoming project.

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**Appendix A**

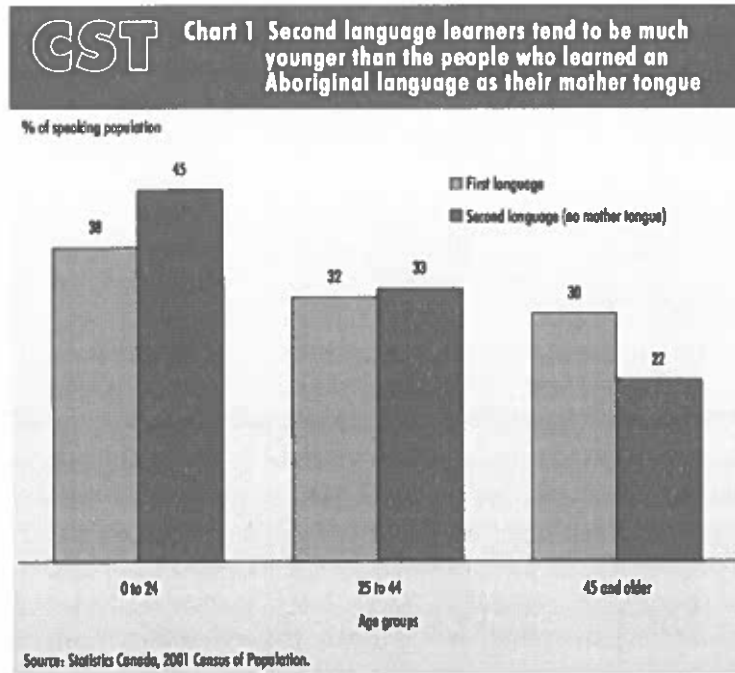| Method of PAR | Time |
|---|---|
| 3 Qualitative in person interviews  (20-25 questions) | One hour to complete. |
| 15 Quantitative online survey (15 questions) | 30 mins to complete. |
| 15 Quantitative paper survey (20 questions) | 30 mins to one hour to complete. |
| 3 Qualitative phone interviews (10-15 questions) | 30 mins to one hour to complete. |

**Appendix B**
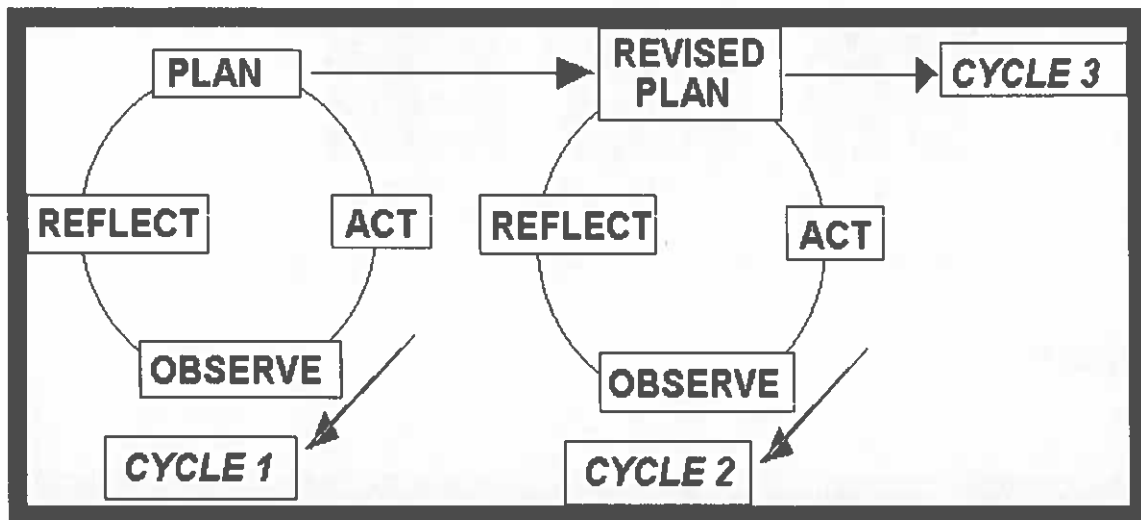


**Appendix C**

| PAR Research Committee |
|---|
| 1) Educator in Fort Smith |
| 2) Educator in Yellowknife |
| 3) Educator in Edmonton |
| 4) Elder from the NWT |
| 5) Local School Board Member (SSDEC) |
| 6) Parent in Edmonton |
| 7) Two Doctoral Students University of Calgary (Devin Roberts & Sarah Novosel) |

## Appendix D



**CST** Chart 1 Second language learners tend to be much younger than the people who learned an Aboriginal language as their mother tongue

% of speaking population

Legend: ▫ First language   ▪ Second language (no mother tongue)

| Age groups | First language | Second language |
|------------|----------------|-----------------|
| 0 to 24 | 38 | 45 |
| 25 to 44 | 32 | 33 |
| 45 and older | 30 | 22 |

Source: Statistics Canada, 2001 Census of Population.

## Appendix E

**Alberta's French-speaking population** *(2011 Census unless otherwise stated)*

| | Definition of terms | Ranking |
|---|---|---|
| **French/Acadian origins (2006)**: 390,895 (12 percent) | • Refers to the ethnic or cultural origins of the respondent's ancestors and does not take into account knowledge of language. | • Provincially, 3rd largest cultural origin after British/Scottish and Germans. |
| **French-speaking**: 238,770 (6.6 percent) | • Refers to the individual's self identified ability to conduct a conversation in French. | • Provincially, 2nd largest language group after English. |
| **Francophone**: 81,085 (2.2 percent) | • Refers to the first language learned at home in childhood and still understood by the individual. | • Provincially, 3rd largest mother tongue language group after English and German. • Excluding Québec, 3rd largest Francophone population after Ontario and New Brunswick. |
| **Unilingual French-speakers**: 3,205 (0.0 percent) | • Refers to individuals who do not speak any English. | • Provincially, there are 5 other languages with more speakers who cannot speak either English or French (Chinese, Punjabi, Cantonese, German and Vietnamese). |