The Integration of Students with

Fetal Alcohol Spectrum Disorders

Into Northern Schools: An Ill-structured Problem

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William Gowans

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Abstract

The purpose of this study was to investigate the work of three administrators and their staffs as they attempted to solve the ill-structured problem of integrating students with fetal alcohol spectrum disorders (FASD) into their schools. A further purpose of the study was to investigate the role played by schools in influencing community responses that would enhance the post-school lives of students with FASD.

The study was conducted throughout one academic year and involved three schools in northern Canada. The use of Problem Based Methodology (PBM) permitted research to be conducted within the schools to generate solutions to the problem. By working with their staff, administrators were afforded opportunities to examine their theories in action and engage in double-loop learning as they searched for new theories of action and alternate constraint constructs.

The data for the study were derived from interviews with participating practitioners, parents, health professionals, and District Educational Authority (DEA) members. This permitted the gathering of spontaneous comments and general opinions to be turned into systemic records and detailed statements. The use of PBM determined that data selection involved a search for behaviours in classes of interest. Potential classes of interest were identified prior to the beginning of the study. By the use of a constraint structure, parameters were established for acceptable solutions that generated a theory of action for the ill-structured problem. The four criteria of explanatory accuracy, effectiveness, coherence and improvability were used in theory adjudication (Robinson

1993). Critical dialogue was used between the researcher and participants to collectively make decisions and solve problems through the exchange of the best possible information.

The study suggested implications for organizational theory that could better enable administrators and staff to address this ill-structured problem. The isolation and lack of resources oblige staff to create conditions conducive to inquiry and learning (Schon 1983). In the case of initial solutions the theories in action were similar, suggesting that assumptions surrounding the role of contextual factors caused by the heterogeneous nature of the schools are misleading. Prior to the study by Godel et al. (2000) lack of diagnosis diffused the urgency of the problem. Following the publication of the data from that study the lack of screening and diagnosis was a major challenge to stakeholders. Generation of data on the children with FASD in northern communities is essential to generate an organizational and professional focus

TABLE OF CONTENTS

Table of Figures

CHAPTER ONE

THE PROBLEM

A child with fetal alcohol spectrum disorders (FASD) faces a lifetime of physical

and neurological damage that is entirely preventable. Exposure to alcohol in utero can

manifest itself at birth in facial abnormalities, a failure to thrive during infancy, and a

variety of mental anomalies throughout the life of the individual. Early diagnosis detects

prenatal brain damage which allows an understanding of the accompanying behaviours.

Diagnosis furthermore presents the opportunity for effective treatment to alleviate the

secondary disabilities which threaten the mental health of the child and disrupt school

experiences. Educators are an essential component in the effective treatment offered to

students with FASD by developing special needs programs and altering school

environments (Streissguth, Aase, Clarren, Randels, LaDue, & Smith, 1991).

The teratogen effects of alcohol have been known since ancient times. Mattson

and Riley (1998) credited Aristotle as commenting "foolish, drunken, or hare-brain

women, for the most part bring forth children like unto themselves, morosos et

languidos". Through the ages the effects of maternal drinking have been observed, during

the gin epidemic of the 18th century in England physicians warned against alcohol

consumption during pregnancy, as liable to produce "weak, feeble, and distempered

children" (p. 279).   Modern identification in North America of the effects of alcohol

during pregnancy began in 1973 with the work of K. L. Jones and D. W. Smith who

introduced the term fetal alcohol syndrome (FAS) to describe the most severe form of the

condition (Cooper, 1991). Alcohol-related neurological disorder (ARND), formerly

known as fetal alcohol effects (FAE), describes a condition that lacks the distinctive facial features and growth deficiency of FAS although neurological damage is present. Another focus has been alcohol-related birth defects (ARBD) referring to abnormalities of the skeleton and certain organ systems (May & Gossage, 2001).

Data for the prevalence of children with FASD are not exact and vary according to the method of collection. May and Gossage (2001) assessed the three major types of research gathering techniques in prevalence studies – passive surveillance, clinic-based studies, and active case ascertainment – and suggested the overall prevalence of FAS is likely between 0.5 and 2.0 cases per 1000 births in the United States. Health Canada (2001) identified the rate to be between one and three per 1000 births in this country. Cooper (1991) put the rate at 1.9 per 1000 births worldwide.

The prevalence of alcohol related neurological disorder is much greater than that of FAS. Cooper (1991) suggested a ratio between three and four times greater. May and Gossage (2001) estimated "FAS, ARBD, and ARND may affect 10 per 1000 births, or more, depending on the specific diagnostic methods and criteria used". This rate at one per cent of births with FASD is considered too high for any population to accept.

 Some Aboriginal communities have been found with a prevalence of births with FASD higher than one per cent although there are little data available on the prevalence of FASD in Northern Canada (May & Gossage, 2001; Health Canada, 2001; Cooper, 1991). Asante and Nelms-Matzke (1985) conducted a study on the prevalence of FAS in northern British Columbia and the Yukon. Using a passive surveillance method in an examination of the pre-existing data of Native children they estimated the rate of FAS and other alcohol-related effects at 46 per 1000 Native Canadian children in the Yukon and at

25 per 1000 in northern British Columbia. They further estimated 51 per cent to 66 per cent of children in the study region suffering from learning disorders had been exposed to alcohol in utero.

Robinson, Conry and Conry (1987) conducted an active case ascertainment study in an isolated community in northern British Columbia. Every child and mother in the community was examined and blind diagnoses of affected children made. The data indicated that the prevalence of individuals with FASD in that community was 190 per 1000. The data from the studies by Asante and Nelms-Matke (1985) and Robinson, Conry and Conry (1987) indicate the high likelihood of other northern communities having the prevalence of FASD children significantly above the Canadian average. This suggests a need to investigate the integration of these children into their respective schools, the administrative values and practices applied and the perceived outcomes.

Students with FASD bring a wide variety of cognitive and behavioral disabilities to the school. Among these are delayed and disordered motor development, diminished intellectual functioning, decreased speed of information processing, delayed and disordered speech and language development, short term memory deficits, perceptual problems, and deficits in response inhibition and attention (Kodituwakku, Handmaker, Cutler, Weathersby, and Handmaker, 1995). Parents and teachers frequently describe attention deficit as the most persistent behaviour disorder being exhibited from early childhood, through adolescence, and into adult life (Steinhausen & Spohr, 1998).

The intelligence of students with FASD ranges from the severely cognitively impaired to the normal however the students frequently function at a lower level than their IQ and achievement tests suggest (Thomas, Kelly, Mattson and Riley, 1998). This is

compounded by inappropriate and challenging behaviours, such as lying and stealing, which frustrate both parents and teachers (Burgess & Streissguth, 1992). Inappropriate and challenging behaviours continue into young adulthood due to persisting mental impairment and psychiatric disorders. Many students with FASD remain dependent on support from a compassionate home, school or community environment throughout their lives (Steinhausen & Spohr, 1998).

A cohort of students with FASD presents a significant administrative and leadership challenge to the administration of schools. The examination of school governance and administration as it relates to students with FASD has not, to date, been a focus of significant research. However the growing body of literature and research in the area of school responses to at-risk students and effective schooling generally contains ideas that may provide useful direction for addressing FASD issues in the school. The school by its willingness to accommodate the diversity of behaviour and achievement of FASD students and to develop a climate which nurtures them plays a major role in the success of these students. Schools which initiate change to integrate students with FASD create a supportive school community that holds more students in their school and, in so doing, becomes more effective.

<center>The Context and Background to the Problem</center>

The distribution of population across a vast landscape brings further complexity to the problems posed by students with FASD. The 28 smaller communities in the Northwest Territories (NWT) are home to approximately 13, 000 people. The communities are sparsely distributed on a landscape larger than Ontario and consequently face extreme isolation. Many of the communities are serviced by single weekly scheduled air flights for

mail and perishable foodstuffs. Professionals hired from southern Canada, who frequently find the isolation to be the greatest hardship in Northern service, are the care providers for health, education, and social services. The communities of the Beaufort-Delta Education Council, located in the extreme northwest of the NWT, contain the schools that were the focus of this study. There is a regional centre of 3450 people, three communities of approximately 1000 people and four others that have populations between 300 and 500 people. The schools in the Beaufort-Delta communities are modern, well resourced and connected to the outside world by both telephone and satellite Internet services. These schools reflect the population and demography of other schools in rural Education Councils in the NWT.

The residents of these communities are almost exclusively Aboriginal, with one of mixed non-native, Dene, and Inuvialuit population, one of mixed Dene and Inuvialuit population, two communities being predominantly Dene, and the remaining four predominantly populated by Inuvialuit. Each community has a majority of the population less than 25 years of age due to the higher Northern birth rate in the past generation. Although the birthrate in the NWT is dropping, it remains higher than the national norm as does the incidence of births to teenage mothers (Government of the NWT, 1999). Apart from isolation, there are a variety of social problems facing the people of Northern communities, with a major concern being the high incidence of alcohol abuse. The per capita consumption of alcohol by young people in the NWT is higher than the national norm with an associated pattern of drinking less frequently but imbibing more than their contemporaries in southern Canada when they drink (Native-L, 1996). The high number of drinks consumed on each occasion is a greater danger to in utero damage in pregnant

women as it causes a high peak of alcohol in the blood stream that is prone to cause the prenatal injury to the child (Warren & Foudin, 2001; Streissguth, Barr, Sampson & Bookstein, 1994; Smitherman, 1994). The amount of alcohol consumed during pregnancy is a factor but is less critical than the way in which the alcohol is ingested.

In the environment of this study, 20-30 per cent of children live in poverty and are prenataly exposed to alcohol. It is an environment where sexual abuse is at levels higher than in other parts of Canada (GNWT, 1998). A high number of these children (17 per cent) are born to teenage mothers and are developmentally delayed or at-risk of delay (p. 2.2) caused by the risk-provoking environment in which they and their families live. In such home environments the expected incidence of exceptional children demonstrating extreme behaviours is at a very high level. Thirty two per cent of the children require support in school beyond what is offered in the regular classroom.   Such a cohort will influence the culture of the community and ultimately the school due to the exceptional needs and behaviours of these students.

Educators and administrators frequently find the challenges of working and living in isolated northern communities with the ascribed social problems a severe test of their professional commitment. Staff turnover remains at levels higher than in other North American jurisdictions and impinges on the continuity of instruction and administration. Not only is staff turnover high, teaching experience in the smaller communities tends to remain low with 50 per cent of teachers in these schools having fewer than five years experience and 33 per cent having fewer than two years experience (GNWT, 1999). These conditions challenge the leadership abilities of principals in the communities of the NWT as they consider alternative means of responding to the needs of their student clientele.

Researcher's Story

As a long time northern educator I have experienced the challenge of administering a school with a cohort of students with FASD. Godel et al. (2000) conducted research in a large elementary school in the Northwest Territories. As the principal of that school I facilitated the data collection in the study that involved all of the students aged between nine and 11 years. The data collected included a section on physical size, weight and head circumference, academic achievement and I.Q. of students, and an assessment of each student by the classroom teacher. A further component was an interview with the parents. The focus of the study was to establish the prevalence of students with FASD; to compare physical, behavioural, and learning patterns of the children with FASD with the other students; to assess the usefulness of a FASD score; and to provide feedback to parents, schools and community (p. 1). The results of the study were shared with the parents and staff, prior to the publication of the study. The data indicated that a significant number of the children in the study suffered from some form of prenatal alcohol impairments.

I was unprepared for the impact of the results of the study as were the majority of the school staff. The results of the study were revealing in two separate ways. The first was at the extent of the damage caused by in utero alcohol to our cohort of students. We had long suspected that a number of our students suffered from FASD; unfortunately we had underestimated the extent of the in utero damage inflicted on the group. Secondly, as a group who prided ourselves on our experience and commitment, we were taken aback by our comprehensive inability to understand the magnitude of the problem. The results of

this research were of grave concern for parents the school staff, DEA members and the staff at the Education Council.

The information uncovered by the researchers indicated that we had been faced with an ill-structured problem lacking obvious criteria for an adequate solution, with the means to achieve a solution unclear, and with uncertainty about where to find the information required for any solution (Robinson, 1993). The cohort of students had been viewed as challenging both in their lack of achievement and in a variety of difficult, and even, extreme behaviours. The data confirmed an underlying reason for the under achievement and behaviours. It also suggested that our theory of action was inadequate in its attempt to solve the problem since its purposes were designed to solve a problem with a different set of conditions (Argyris, Putnam & McLain Smith, 1985).

As an experienced and capable group of practitioners we were willing to accept the constraints of the amount of information required and our lack of practitioner experience in the area. By reviewing and amending our pre-established routines, as suggested by Robinson (1993), an attempt was made to re-design and redefine the problem into a number of smaller but better structured problems. This was done through re-thinking our discipline plan into a school-wide policy, altering our special needs programming and also re-allocating resources in that area, and by frequent mini-staff meetings to discuss progress with the cohort of students. Over a period of three years as a staff we adopted a different approach to dealing with students with FASD.

The reformulating of the ill-structured problem was difficult, involving the double-loop learning of Argyris and Schon (1974), but it did generate for me a great deal of personal interest in solving ill-structured administrative problems that feature children

with FASD. The challenge of this research was to further refine the solutions of the ill-structured problem in that school and to extend the interest in finding solutions for the ill-structured problem of an increased cohort of students with FASD to other schools in the Education Council.

<div align="center">Purpose of the Study</div>

The primary purpose of the study was to investigate the work of three administrators and their staffs as they attempted to solve the ill-structured problem of integrating students with FASD into their schools. A further purpose of the study was to investigate the role played by schools in influencing community responses that would enhance the post-school lives of students with FASD. The purpose of the study was addressed through seeking answers to the following specific questions:

1. How did the three administrators work with the three northern schools to respond to the needs of the students with fetal alcohol spectrum disorders?

2. What were the procedures used by administrators in these schools to build and maintain a successful culture to address the needs of the students with fetal alcohol spectrum disorders?

3. What changes were required in school structures to facilitate better response to the needs of students with fetal alcohol spectrum disorders?

4. How did the schools work with their respective communities to respond to the challenge of the fetal alcohol spectrum students?

The use of problem-based methodology to address the ill-structured problem that faced the staffs allowed an investigation of the relevant theories of action. Robinson (1993) posited that resolution of the ill-structured problem requires changing the theories

of action to produce consequences that are no longer problematic. As a researcher my role

included involving the principals and staff members in critical dialogue to develop new

theories of action learned during the research.

<center>Context of the Study</center>

The study was conducted throughout one academic year and involved three

schools in Northern Canada. The schools were a large elementary school with more than

450 students in classes ranging from Kindergarten through Grade Six, a mid-sized school

with 175 students from Kindergarten though Grade 12, and a small school with an

enrolment of 29 students in Kindergarten – Grade Nine. The communities ranged in size

from the regional centre with a population of 3450, to a mid-sized settlement of less than

1000 and a tiny hamlet of 140. In each school and community the individual context

obliged the problem to be viewed through a different lens and the principal, staff and

DEA developed different solutions. The individual nature of the schools and communities

suggested a postmodern constructivist approach where each administrator would generate

an individual solution to the ill-structured problem.

The use of collaborative decision making afforded the stakeholders the

opportunity to develop local solutions to a problem that is part of most northern

communities. This opportunity permitted the insertion of community attitudes and

activities into the solution. The role of the administrator and school staff was to attempt

to facilitate these community efforts and partner them through complementary solutions

developed in the school context

This problem was selected because it had been recently identified in northern

schools and required collaborative participation between stakeholders to affect a solution.

It is worthy of note that in each of the communities parents chose not to be involved in this study. Efforts were made by the researcher, principals, and teaching staff to encourage this participation to little or no avail. As the study progressed we investigated initiatives with other professionals and community members to provide outcomes in the community that would extend service to students with FASD.

Significance of the Study

A major consideration in the study was the lack of research in the field of school administration involving increased cohorts of students with fetal alcohol spectrum disorders. The focus of the study was an investigation of the administrative strategies used to solve the ill-structured problem of the integration of children with FASD into Northern schools. The findings of the research gave further insights into the nature of the challenges faced by administrators and provided a picture of their approaches and solutions to the problems to be addressed in the education of children with FASD (Cherry, 1999). The dearth of research on administrative strategies for increased cohorts of students with FASD indicated that this study will be an original contribution to research and theory on or around this problem.

Another point of significance for this study lies in the potential to improve administrative practice in the schools. Problem Based Methodology (PBM) was used in this study. PBM permits research to be conducted within the school situation for the purpose of generating a solution to the problem. Practitioners' problems pose the question of what to do with situations that are constrained by their beliefs and values as well as material conditions and both institutional and cultural expectations. This is somewhat different from the researcher directed study, in which the researchers address

and solve problems by developing theories acceptable within the research community (Robinson, 1993). The understanding of how practitioners solve ill-structured problems can be incorporated into the methodology and improve the connection between research and practice. As schools become centers of inquiry, the problem solving provides a vehicle for change, empowering teachers and principals. In this study the administrators worked with their staffs and were afforded opportunities to examine their theories in action and engage in a double-loop search for new theories of action and alternative constraint structures (p. 20).

<div align="center">Definition of Terms</div>

In this study a number of terms have been used that require clarification. The following definitions provide the meanings used in this study.

Fetal alcohol spectrum disorders (FASD): an inclusive definition embracing all of the conditions afflicting children who have been damaged in utero by alcohol consumption (Warren & Foudin, 2001, p. 155).

Fetal alcohol syndrome (FAS): a set of birth defects caused by maternal consumption of alcohol during pregnancy. It is associated with a characteristic set of facial anomalies and growth deficiencies. Maternal alcohol exposure may or may not be confirmed. FAS is the most common non-hereditary cause of mental retardation. Other problems frequently demonstrated by individuals with FAS are difficulties with learning, memory, attention span, mental health, and social interactions (Warren & Foudin, 2001, p. 154).

Fetal alcohol effects (FAE): Children with FAE lack the characteristic facial defects and growth deficiency but still have the alcohol-induced neurodevelopmental

damage. The term has been replaced in recent years by Alcohol-related

neurodevelopmental disorder and Alcohol-related birth injury (May & Gossage, 2001, p.

159).

      Alcohol-related neurodevelopmental disorders (ARND): children with mental

impairments that are alcohol-induced who do not demonstrate any physical manifestation

of the damage and have confirmed maternal alcohol exposure. (Warren & Foudin, 2001,

p. 155)

      Alcohol-related birth injury (ARBD): physical abnormalities of the skeleton and

certain organ systems, with confirmed maternal alcohol exposure. (Warren & Foudin,

2001, p. 155).

      Ill-structured problems: a problem lacking obvious criteria for solution, with

unclear means of reaching a solution, and with uncertainty about the nature and

availability of the required information (Robinson, 1993, p. 26).

      Prevalence: The frequency of occurrence or presence of individuals with FASD.

The term covers all new and existing cases during a particular time period (May &

Gossage, 2001, p. 159).

      Single-loop learning: modification that allows for a theory to be revised while

preserving its central tenets. Strategies must be capable of operating within the constraints

of these tenets (Argyris & Schon, 1974, p. 19).

      Double-loop learning: modifications that involve change to the values, goals, and

key assumptions that are central to the constraint structure. It alters the fundamental

governing variables bringing change to the whole system (Argyris & Schon, 1974, p. 19).

Problem based methodology: a process for engaging practitioners in making judgments about educational problems that involves reconstructing, evaluating, and changing theories of action. The approach enriches our understanding of educational problems, clarifies and adjudicates theoretical differences between researcher and practitioner, and through the use of critical dialogue, develops and tests an alternative approach, acceptable to the practitioner (Robinson, 1993, p. 18).

Structural response: changes to the structure of the school organization designed to improve the integration of students with FASD**.**

Theories in action: beliefs held by ourselves or others that attempt to explain or predict, on the basis of relevant values, why people behave in a given situation (Robinson, 1993, vii)

District Education Authority (DEA): The local elected board in each community responsible to the parents for the good governance of the school (GNWT, 1996).

Parameters of the Study

The use of Problem Based Methodology, a type of participatory action research, to study the administrative solutions developed in schools with increased cohorts of students with FASD resulted in assumptions, limitations, and delimitations.

General Assumptions

1. That each school contained a cohort of students with FASD. It was further assumed that the practitioners were aware that their school and community contained such a cohort of students and, that they had perceptions regarding these students and were willing to share these.

2. In this research it was assumed that the participants were willing to express their honest perceptions and opinions.

3. It was assumed that action research and the problem–based methodology to be used in the study was an appropriate fit to the problem. It was further assumed that the action research and problem-based methodology encouraged the elements of collaboration, trust, and empowerment

Limitations

1. I found no literature directly related to the administration of schools with a cohort of students with FASD. There is a body of literature dealing with at-risk students and students with more severe behaviours. This literature was used as a theoretical underpinning for interview questions regarding behaviours.

2. Since the study was conducted in three schools contained in a single school district in the Canadian arctic, generalization of the findings to urban or even southern rural schools is questionable.

3.   The lack of parental involvement in this study was a serious impediment to the collection of data and their lack of contribution is reflected in the findings

Delimitations

1. The study was delimited to one school district in the Canadian Arctic.

2. Data collection was continued over the period of one year.

3. The data collected were determined by the participants.

4. Data collection was limited to the staff, parents, and DEA members as individuals and as a group but did not include the students directly.

5. The investigation was primarily related to the administrative processes and the results produced.

6. Participants in the study were the administrators, staff, parents and DEA members who chose to participate and the researcher/participant.

<center>Organization of the Thesis</center>

In this chapter an overview of the study is provided including the background to study, the research questions, the significance of the study, definition of terms, and the parameters under which the study was conducted. Chapter 2 presents a review of the literature relevant to the study. The content of this review of literature was driven by the analytical framework developed from stakeholder insights into the ill-structured problem. In Chapter 3 a description is provided of the research design followed in the study. Chapter 4 provides a detailed description of the setting within Sir Alexander Mackenzie School followed by an analysis of the data pertaining to that school and community. A similar format is used in Chapter 5 for Moose Kerr school and in Chapter 6 for Inualthuyak School. Chapter 7 provides synthesis and discussion of the data which leads to the summary, recommendations, and implications of the study in Chapter 8.

CHAPTER TWO

REVIEW OF LITERATURE AND INITIAL ANALYTICAL FRAMEWORK

Although each school creates approaches that make sense in its local context, these approaches are always the result of deliberation among teachers, parents and students about their goals and needs. Explicit goals for student learning and shared, school- wide values are the framework for restructuring and maintain a press for ambitious teaching and academic achievement along with keen attention to students and their needs. Each school has created ways to know students well and to engage in on-going inquiry as a basis for continual improvement (Darling-Hammond, 1997).

A major purpose of the study was to enhance the schools' responses to students with fetal alcohol spectrum disorders (FASD) by using Problem Based Methodology as part of a collaborative action research project that involved stakeholder groups in planning and decision-making. Through active participation with stakeholder groups suitable responses were sought to the ill-structured problem generated in northern schools and communities by students with FASD. A second purpose of the study was to investigate the role played by the schools to influence community responses that would enhance the post-school lives of students with FASD.

The literature in this review is directed by the analytical framework developed to examine the problem as viewed by the stakeholders in the communities in the study. An initial analytical framework examined what was apparent at the outset using the lens of the perceptions of the stakeholders. This framework was developed with stakeholder insights from interactions and perceptions developed reflecting community views of the problems generated by students with FASD and the responses most appropriate to them. The use of

problem-based methodology as the specific vehicle for the community-based research suggested this initial analytical framework should outline the problems generated by the students with FASD and the appropriate responses determined by the literature. Figure 1 depicts the problems and responses.

Figure 1. Problems and Responses in schools with cohorts of students with FASD.
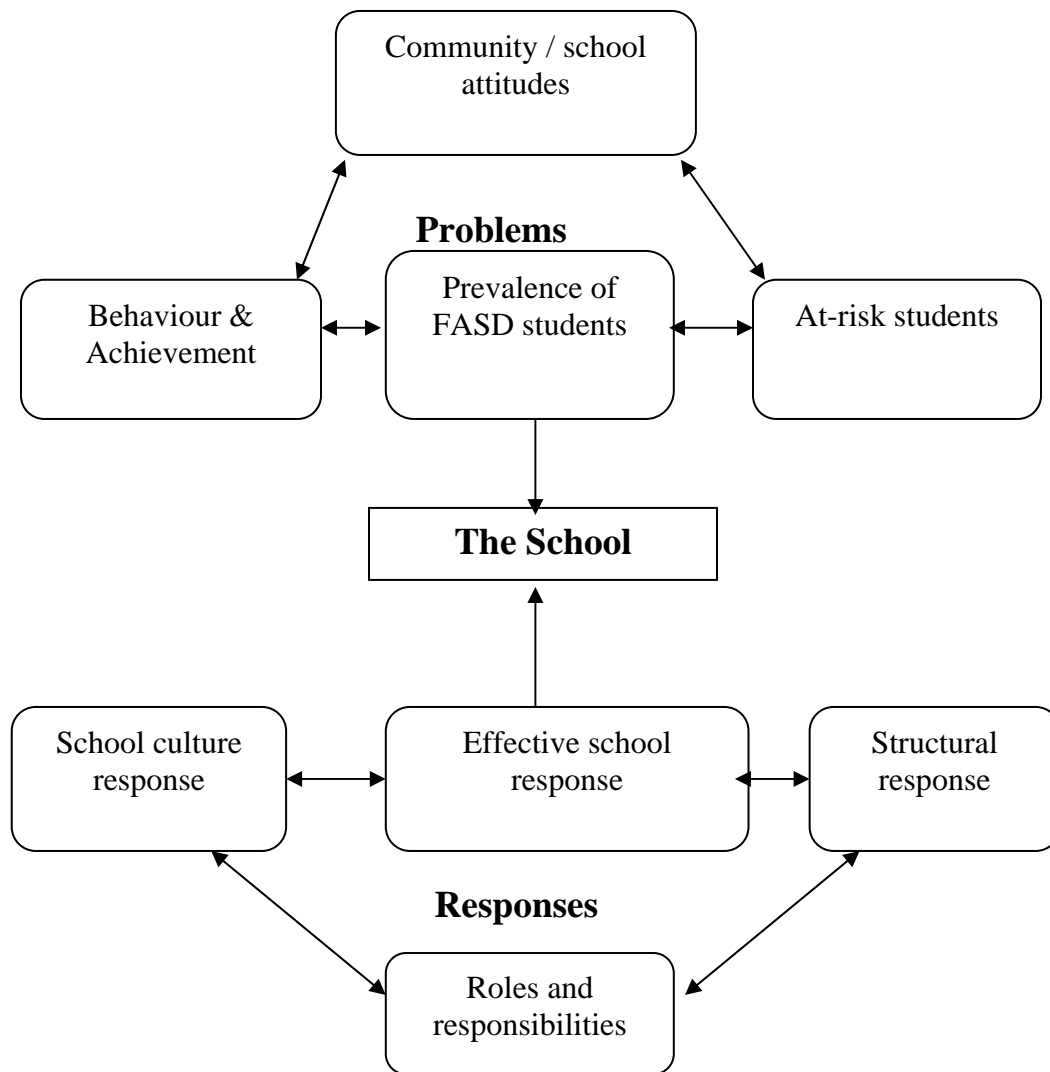
In Figure 1 four major sub-sets of the problem have been identified. These challenges are the prevalence of students with FASD; the achievement and behavioural challenges of the student group; the existence of at-risk students because of this, an

anticipated smaller group of students who will demonstrate extreme behaviours; and the relationship between the school and community. They are balanced by the anticipated responses from schools; efforts to improve or make the school more effective; initiatives to develop a collaborative school culture; changes to the structure of the organization; and the development of roles and responsibilities for the stakeholders. These were dealt with in two main sections. The problem was identified, then the responses outlined

<div align="center">The Problem</div>

Children with FASD begin life as smaller babies than their peers and fail to thrive during infancy. They suffer from brain damage that manifests itself in a wide variety of accompanying behaviours. These behaviours, if left untreated, are described as secondary disabilities and will disrupt schooling, threaten mental health, and involve the children with the legal authorities. The schools can provide an early response and begin the effective treatment of the secondary behaviours and offer some measure of hope for a normal life to children with FASD. The problem addressed in this study was to describe the practices and procedures adopted by administrators to enhance school responses to students with FASD and through the application of these responses to develop new theories of action to deal with this ill-structure problem. The study also sought to identify areas for community influence in the schools in order to to enhance the long-term opportunities for students with FASD.

Prevalence of Students with FASD

The use of alcohol by northerners, and in particular, the tendency to drink less frequently but to imbibe more deeply, suggests that the prevalence of births with FASD will be higher than the national norm (Native –L, 1996). Studies have shown the

prevalence in other northern communities to be considerably higher (Robinson, Conry & Conry, 1987; Asante and Nelms-Matke, 1985) and it is reasonable to believe that the communities in the study included a cohort of students with FASD. The study by Godel et al. (2000) indicated that a cohort of students in one of the schools in the study showed a high prevalence of students exposed to alcohol in utero.

Burgess and Streissguth (1990) suggested that a pediatrician or a dysmorphologist are best qualified to determine if a child has FASD. The lack of such specialists in Northern Canada obliges physicians to make such diagnoses. The children are diagnosed using a coalescence of evidence because no definitive test has yet been developed. Warren & Foudin (2001) suggested the criteria for diagnosis are evidence of growth retardation, a characteristic pattern of mild facial anomalies evidence of neuro-developmental abnormalities, and a confirmed history of maternal drinking. Growth deficiency involves both height and weight that is evidenced by a low birth weight that tends to persist throughout life. The children are shorter than their peers and are frequently thin with an emaciated look. Girls tend to gain weight during puberty and may look somewhat plump but the boys are inclined to remain underweight until late adolescence. The second characteristic is in the primary facial features. There are four of these; short pulpebral features, a long smooth philtre, a thin upper lip, and a flat mid-face. Other, less diagnostic features, include a short nose, small chin, outer ear abnormalities, and epicanthal folds of the inner corner of the eye. The last of these is a racial characteristic of many Aboriginal children and should be discarded as a factor in their diagnosis (Godel et al., 2001). The third characteristic is Central Nervous System (CNS) Dysfunction. This may be considered the most important to educators as it brings with it cognitive defects and

challenging behaviours. The major indicators of CNS dysfunction are small head circumference, poor coordination, low intelligence, hyperactivity, attention deficit, deficient organizational skills, impulsivity, poor judgment, difficulty in group and team activities, developmental delays, and motor problems. The lack of a validated objective biological marker to confirm maternal drinking during pregnancy obliges physicians to rely on maternal self-reports and reports from collaterals, police or social services. Physicians and researchers frequently feel uncomfortable giving a diagnosis in this field without confirmed maternal drinking (Burgess & Striessguth, 1992; Novick & Streissguth, 1996; Warren & Foudin, 2001).

The lack of expert diagnosis in northern communities makes it difficult to establish the prevalence of students with FASD in the schools in this study. Godel et al's. (2000) study indicated a prevalence much higher that in southern jurisdictions. This coupled with other studies in prevalence in northern communities would suggest a need for northern schools to have an understanding of the challenges faced by students with FASD and how these challenges are to be addressed.

The Behaviours and Achievement Problem

Academic achievement by students with FASD is lower than that of their same-age peers. A study in IQ scores of students with FASD showed the mean to be between 65-70 with a range of scores from 30 to 105. This indicates the range is from the severely cognitively impaired to the normal. These IQ findings are compounded by the lack of correlation between IQ and functional skills of children with FASD. Frequently they function at a much lower social level than their IQ and achievement tests would indicate (Burgess & Striessguth, 1992). Thomas, Kelly, Mattson and Riley (1998) found that the

deficits in social skills become more pronounced over time, caused by a plateauing of social abilities between four and six years. The result of this arrested social ability is "a failure to develop a theory of mind (that) may impair one's ability to develop empathy and more advanced interpersonal skills" (p. 523).

The low achievement of students with FASD is complicated by their inappropriate and challenging behaviours. As young students they demonstrate impulsivity, poor attention, and difficulty making transitions. They are unable to face consequences and are frequently found to be lying, stealing, and engaging in inappropriate social interactions (Burgess & Streissguth, 1992). This type of behaviour may be described as naïve in younger children but is extremely problematic in adolescents. At that point in their lives many students with FASD cannot handle money, are not employable and are lonely and depressed. Despite their need for more supervision at this crucial time in life most adolescents with FASD refuse to cooperate with parents and other care givers (Smitherman, 1994, p. 124).

The lower achievement of students with FASD, coupled with their inappropriate and challenging behaviours, is a challenge for classroom teachers and administrators. In this study administrative response to this section of the ill-structured problem of the integration of students with FASD has major implications to school and community outcomes dealing with adolescent students with FASD. Attempts by the schools to identify outcomes preventing the onset of these behaviours were an effort to facilitate a better response to the problems faced by adolescent students with FASD. A further thrust of the study was to examine the outcomes that develop a connecting partnership with the community in which the students will spend their adult years. The partnership between

school and community faced a challenge from the adolescent students with FASD that had long term implications

The At-risk Student Problem

Studies of at-risk students identify them as a group with much behaviour akin to children with FASD. An at-risk student is defined as any student in school, or pre-school, who is functioning from a disadvantaged position due to detrimental influences in her life (Lenarduzzi, 1992). Some of the more common at-risk behaviours are substance abuse, illegal activity, school truancy, suspension, expulsion and failure, poor family environment, transience, residing in the inner city, lack of extra-curricular involvement, and poor home-school relations (Johnson, 1997). Edwards, Danridge and Pleasants (2000) identify a number of environmental, social, and cultural factors that contribute to the at-risk designation for children.

- Minority racial/ethnic identity
- Living in a low socioeconomic home
- Living in a single parent family
- Having a poorly educated mother
- Having a non-English language background
- Living in an impoverished neighborhood or community
- Living in a violent neighborhood or community

Lenarduzzi (1992) identified the major influences on at-risk children coming from the social, family, and school domains. The main social contributors are race, personal problems, peers, and work. The student's school history and performance, coupled with the school climate, are influences that the school itself brings to bear. The student's family structure, educational level, socio-economic status and mobility are contributing factors from the home.

Sugai (1997) in a study of students defined as suffering from Chronic Problem Behaviour suggested the behaviours are developed because of three main deficiencies. The first is a home lacking consistent behaviour management, behaviour monitoring, and behavioural consequences. His second concern is with neighbourhoods without positive social engagements where students suffer from negative peer networks. Third he blames schools with unclear rules and consequences, expectations not taught and modeled, punitive disciplinary approaches, high academic failure and lacking individualized programming.

Secondary disabilities. The birth defects borne by children in the fetal alcohol spectrum are frequently overlooked at birth. The facial features that might provide identification become less obvious in adolescence and make diagnosis more reliant on cognitive and behavioural markers. Assessment of intelligence may be determined by the use of I.Q. tests, however assessing behaviour is much more complicated and time consuming. Without diagnosis, children with FASD go untreated and this has serious implications for all children with FASD since interventions do not begin until a diagnosis is made (Novick & Streissguth, 1995). Streissguth and O'Malley (1997) stress the importance of early diagnosis as a protective factor against secondary disabilities. Their research indicates only 11 per cent of children with FASD are diagnosed by age six.

The physical characteristics of height and weight as well as the many identifying facial features need not be present in every child with FASD. The lack of such facial features does not exclude the children from cognitive and behavioural deficits. The damage to the Central Nervous System is similar to that of children exhibiting the physical characteristics although I.Q. levels tend to be higher. The children with ARND

tend to be less severely damaged than the children with FAS but suffer from a higher level of secondary disabilities. Their higher intelligence, with IQs above 70 rather than below, makes it more difficult for them to receive services and interventions. The overlap of intelligence distributors and behaviours suggest that all children with FASD would benefit from early diagnosis and a program of treatment from health professionals. The treatment demands a variety of professional help including support and advocacy from social workers, special education services from schools, mental health specialists providing behavioural and cognitive therapy, and physicians providing medications (Burgess & Streissguth, 1992; Streissguth & O'Malley, 1997; Warren & Foudin, 2001).

The secondary disabilities are preventable with diagnosis and treatment. The most prevalent of secondary disabilities are mental health problems that are experienced by most people with FASD. Streissguth and O'Malley (1997) reported a 94 per cent prevalence of mental health problems in a population of 415 individuals between the ages of six and 51 years. Steinhausen and Spohr (1998) in a longitudinal study found 63 per cent of their population suffered from psychiatric disorders. The mental health problems take the form of depression, threats and attempts at suicide, attention deficit problems, panic attacks, and hallucinations. All of these problems increase with age, save for attention deficit. Other areas of concern are inappropriate sexual behaviours, disrupted school experience and trouble with the law (Streissguth & O'Malley, 1997; Smitherman, 1994; Steinhausen & Spohr, 1998).

The challenges a cohort of students with FASD bring to a school are wide ranging and require a coordinated approach from the time the students enter the school until they leave. The approach is further complicated by the lack of diagnosis. This prevents the

allocation of resources to students with FASD and increases the likelihood of secondary disabilities in youth.

The prevalence of mental health problems, inappropriate sexual activity, disrupted schooling and trouble with the law suggest that a number of students with FASD are likely to demonstrate extreme behaviours both in school and in the community. Steinhausen and Spohr (1998) suggested that many children with FASD "continue to be problematic during adolescence and even young adulthood because of persisting mental impairment and psychiatric disorder" (p. 337).

School / Community Relationships Problem

Fetal alcohol spectrum students attend the community school but their home is in the larger community. This larger community must learn to accommodate these young people as they grow (Burgess & Streissguth, 1992). Furman (1998) saw community as based on awareness of others and their multiple cultures and belief systems. Understanding the need for interdependence with those who are different is critical since values in the present world tend to be pluralistic. She saw communities of difference based on respect, justice, and appreciation as the postmodern norm. Promoting feelings of safety, belonging, and trust of others among their members fosters these *postmodern* communities.

Furman (1998) expressed reservation about how traditional schools and communities and their structure can be maintained in a postmodern world. The kinship community is seen as the center of every community, related to family, and is based in the home. Valuational communities surround it in a second layer which Tonnies (1887/1957), described as "communities of the mind" made up of churches, clubs and civic

organizations of individuals who share the same views. On the outside layer are the "communities of otherness" where membership is not voluntary and a variety of people come together to work for the common good, i.e., local public school. Furman (1998) described schools as communities of otherness that should represent cultural diversity and valuation differences. In Northern communities, with a predominantly Aboriginal population, there is little requirement for cultural diversity. Instead the school, with a staff largely drawn from Southern Canada, faces the task of adequately representing the Aboriginal culture to the students and parents. The northern culture is usually represented in the form of Aboriginal language instruction and some on-the-land experience.   The fundamental philosophy of the Aboriginal people views family and kinship as the centre of their community life. The family is tied to the land, with the family name often being taken from the area where the family has hunted for generations. The concept of "the land" embraces the plants, animals, water, ice and sky. In fact the word "nature" best describes the unbroken circle of life in which everyone has a role (GNWT, 1998)

The early diagnosis of a child with FASD alerts the family and health community to the situation. The application of appropriate intervention tactics, and a life of support and treatment may minimize the damage to the child (Streissguth & O'Malley, 1997; Smitherman, 1994). In the NWT, early intervention for pre-school age children is the responsibility of health professionals. Transfer of the child from the domain of the home to the school is rarely seamless. Springate and Stegelin (1999) see this time as critical in involving parents in their child's education. They recommend parents and teachers work together to enrich curriculum objectives and context and to develop mutual respect which will maximize their joint expertise, resources and interest in the child. Burgess and

Streissguth (1992) suggest that the academic achievement children with FASD may be compromised relative to their peer group and is also likely to become further compromised as the students move through the school and their subject matter becomes more abstract. For children with FASD benefiting from early intervention, the interests of the health, social services, and educational professionals involved further complicate this difficult time. The school, to access the child's confidential information, must acquire parental permission; this is almost the only determined step in the process. There is an absence of a formal protocol to access and exchange confidential information in the NWT (GNWT, 1996).

In the partnership with the community, one role of the school is to ensure the knowledge of best practices to assist students with FASD exhibiting extreme behaviours becomes part of the community culture. Following school years as their contemporaries move away, seeking higher education or job opportunities, the FASD cohort may become even more influential in the community. Community stakeholders, in the form of parents and local board members, are owners of the school vision and the school culture it creates. The development of the school vision makes all stakeholders aware that a cohort of their children faces a lifetime of disability. These children will become adults and it is a major duty of the school to prepare this cohort for their adult years. Another duty is to prepare the community for those years (Shelton & Cook, 1991).

Renihan and Renihan (1995) suggested that there are a number of cultures in a responsive school. The cultures of parental involvement and parental choice serve to

Figure 2. Five Cultures of the Responsive School

Note: From Responsive High Schools: Structuring Success for the At-Risk Student by F.I. Renihan & P.J. Renihan, 1995, The High School Journal, Oct/Nov, p.3

develop parental empowerment while those of institutional self-improvement and professional collaboration are important for the empowerment professional staff. The most important of these is a culture of pastoral care that provides, through an emphasis on professional and parental empowerment, a means for student empowerment. The responsive school is shown in Figure 2.

Responses

The anticipated responses to the problems faced by students with FASD by the school staff, parents, and community members are outlined below and are based on the concept of praxis. Cherry (1999) suggests that praxis is "the integration of opportunities and chances based on bringing to the surface and acknowledging individual and collective

ways of thinking and behaviour" (p. 7). These individual and collective ways of thinking

may be used by principals, teachers, parents and other interested individuals as they work

both singly and in cooperative groups to respond to the problems of students with FASD.

As presented here they are descriptive and it is reasonable to presume given the creativity

of practitioners and parents, they are not an exhaustive selection of responses. Their

purpose is to provide a framework into which responses can be classified and assessed.

The Effective Schools Response

In the literature, school effectiveness and school improvement have long been

placed in opposition, forcing educators to select a "camp" and defend their choice. This is

unfortunate since as MacBeath and Mortimore (2001) suggest, they are "integrally and

umbilically related" (p. 2). Both movements seek to assist schools to make a difference in

the lives of their students and societies. Whether identified as school effectiveness, school

improvement, or building capacity, responses of this type may be developed to combat

organizational stresses brought by the many problems in schools containing a cohort of

students with FASD.

The multiple needs of the children with FASD demand learning from everyone in

the school if successful administrative and teaching strategies are to be devised. A major

building block in the drive to build capacity is an affective climate in the school. The

process of considering teachers' ideas affirms these teachers as professionals. This

affirmation is important to their learning and encourages them to participate in the life of

the school. Teachers whose ideas are not affirmed tend to withdraw from school life. It is

the principal's task to draw teachers who are not affirmed into the circle of contributors.

Their opinions must be sought and suggestions given due consideration. On the other

hand, teachers who are overly dominant need to be reminded that everyone has an opinion and has the right to have that opinion heard and considered (Mitchell & Sackney, 2000).

Another building block used to build capacity are structures requiring staff interaction and participation in making important decisions about school policy and direction (Leithwood, Jantzi & Steibach,1999). The building of trust among stakeholders, especially school staff members, is critical. Principals who build trust with their staff make a start on the road to school improvement. Trust has many dimensions: integrity, honesty, truthfulness, competence, consistency, reliability, predictability, good judgment, loyalty, openness, sharing, and concern (Walker, Shakotko & Pullman, 1998). The development of these dimensions of trust among the members of the school staff will allow them to work together in an environment that is open and welcoming to change.

The development of trust among a staff that operates in an affirmative climate is an important step in building capacity. When it is developed the principal, due to the trust with and among staff members, may allocate time and resources that allow staff to work together to generate knowledge that will benefit the students (Hargreaves, 1998; Sackney, Walker & Mitchell, 1999). The production of such knowledge will greatly increase the capacity of the school and will be of prime benefit to students in the fetal alcohol spectrum. The staff will have the opportunity to create knowledge and will bring benefits through this knowledge to the remaining students in the school.

Levine and Lezotte (1990) identified a series of correlates suggesting they are to be discovered in unusually effective schools. They caution that correlation is not causation and that the correlates may be produced by other school actions that lead to higher achievement. MacBeath and Mortimore (2001) suggested 11 salient factors from a

meta-analysis of contributors to school effectiveness conducted by Sammons, Mortimer

and Thomas (1996). The 11 factors are:

1. professional leadership
2. shared vision and goals
3. a learning environment
4. concentration on learning and teaching
5. high expectations
6. positive reinforcement
7. monitoring progress
8. pupils rights and responsibilities
9. purposeful teaching
10. learning organization
11. home-school partnership

MacBeath and Mortimore (2001) and Renihan and Renihan (1995) caution

against the use of lists as the major identifier of effective schools. The salient features

listed above and others like them are understandings that will assist principals, teachers

and parents to make informed, collaborative decisions about how to improve their

schools. Sergiovanni (1997) suggests lists of salient factors are useful to give an

understanding of some broad general characteristics of improved school effectiveness but

should not be prescriptive. Each school is situationally specific and the application of a

generic list of correlates across the spectrum is likely to generate unforeseen negative

consequences for teaching and learning.

The students with FASD will find the composition of the classrooms in which they

attend school to be important. Nicholls (2002) posited that both class size and class

composition are important in determining the success of the students. Class size refers to

the number of students in a class. Class composition is defined as "the make-up of each

classroom in terms of students' abilities, skills, interests, strengths, and needs" (p. 3).

Fullan (1992) suggested "successful school improvement depends on an understanding of

the problem of change at the level of practice and the development of corresponding

strategies for bringing about beneficial reforms" (p. 27).

The Cultural Response

The concept of organizational culture was imported into education from the

business field in an attempt to generate an efficient and stable environment for learning.

For the purposes of this review of literature and to illustrate what school culture means,

the following definition from Deal and Peterson (1998) was used:

> … everything that goes on in schools, what they talk about, their willingness to change, the practice of instruction and the emphasis given student and faculty learning… Culture is the underground stream of norms, values, beliefs, traditions, and rituals that builds up over time as people work together, solve problems, and confront challenges. (p. 1)

In the cultural response to the problem, in-school administrators will begin by

taking stock of the existing culture. Cultural change means shifts in many relationships,

which give stability to the school, and it is important that dialogue foreshadow changes.

Care must also be taken to draw as large a pool of individuals into the process as possible

(Stolp, 1994). Donaldson (2001) also urges caution in such endeavours. While agreeing

that the culture and social norms of most schools make classical hierarchical leadership

difficult, he sees difficulties in attempts to encourage educators to grow. Many of these

difficulties lie in the attention and energy teachers dedicate toward students and teaching.

By placing such heavy emphasis in this area of their professional lives, educators have

little time or interest for school-wide management issues, long range plans, or even other

teachers.

A "vision" of the school based on the collective beliefs held by the stakeholders on

what the school represents is critical to its culture. To be effective the vision should be

established by the stakeholders by regular discussion and review of the norms, values beliefs, traditions and rituals suggested by Deal and Peterson (1998). The vision must also be used when problems arise concerning distribution of scarce resources or when there are disagreements over priorities (Leithwood, Jantzi & Steinbach, 1999). A vision belonging solely to one individual (the principal) or a small group (senior staff) is unlikely to take hold and grow within the entire school body. Fullan (1992) asserted principals can be blinded by their own vision and feel they must manipulate the staff and the school culture to conform to their views.

North American schools tend to be inhibited by the emphasis on the private or solitary nature of teaching (Firestone & Louis, 1999). Collaboration in teaching gives the opportunity for peers to learn from each other. With encouragement to invest in their professional education, support and encouragement to assume leadership roles, the opportunity to reflect on practice, and positive interaction with their peers, educators can work with the principal to develop a positive school culture (Leithwood, Jantzi & Steinbach, 1999; Peterson, 1999). A school culture that promotes a focus on productivity, performance and improvement helps teachers overcome the uncertainty of their work. Stress of the values of collegiality and collaboration builds a culture that promotes a social and professional exchange of ideas and opinions that amplifies the energy motivation and vitality of the staff. (Deal & Peterson, 1998, 1999; Peterson, 1999).

The problems faced by the students with FASD in the home community are not easily overcome. Adults with FASD endure a higher than normal incidence of mental health problems, are prone to engage in inappropriate sexual behaviours, frequently have employment problems, have difficulty with independent living, need treatment for alcohol

and drug addiction, and frequently run afoul of the justice system (Streissguth & O'Malley, 1997; Novick & Streissguth, 1996). Legge, Roberts, & Butler (2000) stressed that, although there is an increased awareness of the problems children with FASD bring to a community, interest is uneven. Further, communities in the same jurisdictions demonstrate varying levels of development. Some communities have coordinated activities, extensive networking, support measures, policy development, and adaptive services to address these needs, while others are at the stage of raising public, professional, and political interest.

Positive school cultures encourage growth in educators by permitting risk-taking in a collegial environment. This means a principal who wishes to improve school culture cannot merely adjust the norms, values, beliefs, traditions, and rituals in a school. These components of school culture are not changed directly. Instead the culture is changed over time as educators and other stakeholders embrace new ideas and challenges. The principal, who endeavours to change culture, may proceed in a variety of ways with an understanding of the three levels of culture in play in every school. On the outside and clearly visible are artifacts. These are the observable parts of an organization's culture – its language, products, and creations. Although they are easy to observe, they must be allied with the two deeper levels if they are to be understood. Espoused values are statements made by members of the organization concerning how things are and what people do. They are rational and can be analyzed; often showing what is said may not be the complete truth. At the deepest level are basic assumptions that are rarely, if ever, articulated. Being deeply embedded, they need not be discussed but are able to provide continuity in times of stress (Schein, 1992).

An important step in developing the collaborative partnership between school and community is the transfer and adaptation of the school's vision and culture into the community. In acquiring group learning, Leithwood, Steinbach and Ryan (1997) identify this common vision as the first of three major components. A second is a sharing of norms, beliefs and assumptions. The final component is self-talk which is defined as a variety of communications that persuade group members to accept group ideas positively and to strive to improve these ideas. The school, through its culture and attempts to build capacity, should be the first to develop these ideas. It remains for the principal and teaching staff to broadcast the message to the community leaders, parents and other community members to guarantee that young adults with FASD can live in a community that nurtures and protects them.

Decker and Schoeny (1992) suggest that the practice of community education is not new. It has a history dating from the end of World War II, and community education, despite demonstrating success, has yet to achieve universal adoption. They propose that community education is a genuine educational philosophy that practitioners have largely ignored. Goodlad (1992), who was involved in the early efforts of community education, sees part of the problem being the lack of adoption of community education built into schools themselves where the emphasis on testing detracts from education.

A final consideration in improving school culture in the schools in this study was the inclusion of local culture (GNWT, 1996). The population is overwhelmingly Aboriginal in the seven communities and this Aboriginal culture should be reflected in the school (GNWT, 1999). Reflection of the Aboriginal culture encourages Aboriginal students and parents to readily enter and enjoy school life. Firestone and Louis (1999)

warned against "resistance cultures" among students who see themselves as obliged to "act white". Sensitivity in the school culture to Aboriginal feelings will prevent such negative feelings. The sensitivity of the students with FASD is also of consideration. They are part of the school and community culture and, if not made to feel that way, are likely to develop their own "resistance culture" to the school mainstream.

The Structural Response

The study also examined the school structures that were either in place or were introduced to facilitate optimal integration of students with FASD. The structural response involved academic and curricular restructuring as well as approaches that empowered parents, students and school professionals.

The range and complexity of the often multiple disabilities of students with FASD challenges school administrators and staff to respond with an improved organizational arrangement. Organizational decisions made affecting students with FASD will also affect the structure of the rest of the school whether they affect the physical character by reducing stimulus or the daily schedule with less student movement. The high number of students with FASD who are at–risk, or who demonstrate more severe behaviour problems, suggest responses that will alter the school structure.

The at-risk student response. Edwards, Danbridge and Pleasant (2000) suggest that the at-risk student is one who is likely to experience low academic achievement, poor school attendance, grade retention and dropping out . Teachers who view students at-risk as an educational challenge can alleviate these conditions by structuring their classrooms to create a community of learners and by holding high expectations. These teachers frequently develop a supportive interpersonal relationship with the students and their

parents. Students respond positively to these efforts, making it essential that the school administration develop processes to support the efforts of these teachers (Edwards, Danbridge & Pleasant, 2000; Lenarduzzi, 1992). The adaptation must come from the school as it develops programs to meet fundamental needs that are frequently not met by regular school programming. The creation of a supportive school community generates "holding power" that is defined as the ability to keep students in school.

Wehlage, Rutter, Smith, Lesko and Fernandez (1990) see a fundamental need for students to own a sense of school membership. It is developed through the social bonds that create the social psychological state that tie the student to the school. The result of social bonding is a student who is attached to the staff and other students, accepts and is committed to the norms, is involved in school activities, and has a belief in the institution. When a student accepts these feelings the requirements for school membership are fulfilled and the student attains school membership

In a study of 21 inner-city schools in a major Western Canadian city, Johnson (1997) surveyed 28 administrators and found they strongly supported family-based approaches as a means of reducing student at-riskness. Typical of these family-based approaches are parenting classes, encouraging parents to emphasize the value of education to children, parental school involvement, teacher visits to student homes, and job training. The administrators surveyed responded with an interest in early, intense and coordinated intervention that was broadened beyond the school to the community needs. Furthermore, they opined that school and public resources should be applied to the needs of families and parents at risk. Renihan and Renihan (1995) proposed that schools be responsive to parents through encouraging involvement in schools and allowing parents to make

choices about the education of their children. They also viewed parental involvement on three levels; as a passive audience; as supporters; and as collaborators. In the second and third categories the parents are involved, with collaboration on a higher level than that of supporting. Renihan and Renihan (1995) further argued that parents are responsive in direct relationship to the importance they attach to the problems the school addresses in the lives of their children. If the school is to succeed in this challenge it must identify the programs that meet the needs of the students as seen through the eyes of the parents.

In addition to these approaches to generate "holding power" Sugai (1997) suggested three effective interventions. These are social skills training, academic and curricular restructuring, and behavioural interventions. He also asserts that students with

Figure 3. A school-wide system of behaviour support
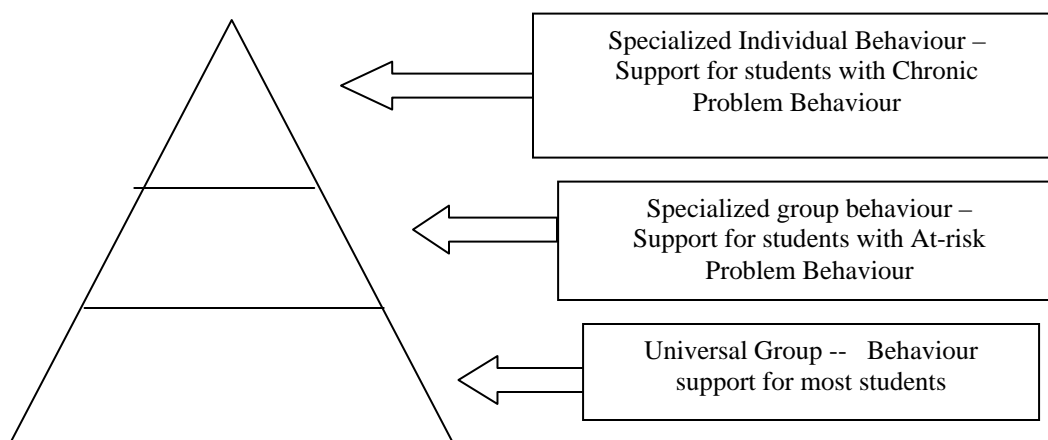
Note: From Sugai, G. (1996). Providing effective behaviour support. SAIL: Technical Assistance Journal, Vol. 11, No 1, pp. 3 – 6

significant problem behaviours do not respond to a school-wide discipline policy or social skills intervention. The behaviour needs of these children can best be met by specially

designed and individualized interventions and maintained by a school-wide system of behaviour support. All school personnel are involved in providing support by determining the specific level of behaviour programming required. This is achieved by assessing the intensity and severity of the problem behaviour displayed by students as illustrated in Figure 3.

Such a comprehensive school-wide plan requires regular maintenance. This ongoing planning process includes developing specific action plans, ongoing staff training, consistent implementation and regular monitoring for effectiveness (Sugai, 1997). James (1993) suggests it is essential that students suffering from emotional / behavioural disorders explore the concept of a behavioural intervention component in an Individual Educational Plan (I.E.P.). The instructional and behavioural expectations, as well as the school's procedures to manage both should be integrated into the I.E.P.

Williams (1998) in a study that enabled students with severe behaviours to become contributors to classroom life used three major components. These were acknowledgement of out-of-school skills, harnessing these strengths in the service of schoolwork, and basing skill building on the student's experiences and inclinations.

Restructuring resources response. Godel et al. (2000) suggested that providing the solution to the problems posed by the students with FASD might detract from the resources required by the students in the mainstream. Another approach to the problem viewed equal distribution of resources as a contributor to inequities to the students with the greatest need. These inequities cause an eventual redistribution of resources (Punshon, 1998). Efficiency suggests allocation of the greatest resources to the neediest students from the outset in an attempt to redress what are undeserved equities (Rawls, 1971).

Handicaps faced by children with FASD are undeserved and it is reasonable to expect society to compensate them. In a later work, Rawls (1973) supported the allocation of educational resources to support the long-term expectation of those less favoured. This, he referred to as the difference principle and stressed that value in education is not measured in terms of economic efficiency alone.

Such a redistribution of resources is unlikely to pass unnoticed in any school or the greater community. The administrator who radically alters the structure of a school is best advised to seek alliances that will help diffuse the response (Dimmock, 1996). These may be found in the form of local boards and parent-teacher groups. The formation of alliances with these groups will further develop a new way of collaborative working within the school. Major players in this process – principals, parents, teachers, students, and local board members – will be obliged to adjust as power and influence relationships change (Dimmock, 1996).

Changing the structure of any school and making it a more democratic institution where students, staff, parents, and local board members work with the principal to make decisions, is not without its perils. Chief of these, for the principal, is increased demands of leadership, coupled with an increased workload, in areas of administrative maintenance and lower order duties (Dimmock, 1996). Principals who are already under duress due to heavy workloads rarely welcome the increased demands. However, Dimmock (1996) suggests that the improvements in staff morale, school culture, school capacity and the increased interaction with the students, parents, and other community members make such a sacrifice tenable.

Roles and Responsibilities

The NWT Inclusive Schooling Directive (1996) guarantees all children equal access to educational opportunities, to respect their diversity, and to maintain high standards. Within this document are criteria that each administrator will use to arrive at a professed view of the success of the education offered students with FASD. Literature from other sources will be used to identify further the roles and responsibility of the administrators in this study.

Parents The Directive also guarantees parents of children with FASD that their child's education will build on strengths and respond to student needs. Schooling will be community based and will promote involvement of the parents and guardians in their child's education. Parents have a role to play in the development and implementation of the Individual Education Plan. This educational plan will direct their child's education (NWT Inclusive Schooling Directive, 1996). They are also expected to play an active role as an advocate for their child, part of which may be in seeking education about their child's disabilities (Springate & Stelegin, 1999).

Fullan (2000) suggested that the closer the proximity of "the parent to the education of the child the greater the impact of child development and educational achievement" (p. 198). The benefits of parental engagement are clearly outlined by Coleman (1998) as cited in Fullan (2000). He saw the collaboration between parent, student and teacher as a "power of three" and argues that "Student commitment to school (or engagement in learning) is primarily shaped by parents through the "curriculum of the home"; but this parental involvement is an alterable variable, which can be influenced by school and teacher practices". This suggests that the school must be proactive in seeking

the particular pathways that promote this parental involvement. Fullan (2000) cautioned that the differences in ethnicity, age, and class that are frequently experienced in Northern school situations compound the problems for educators but do not alter the importance of the engagement.

Renihan and Renihan (1995) suggested that choice for parents is an instant empowerment. In the sparsely populated regions of Northern Canada a school that accommodates the option of choice also considers alternatives to the regular curriculum. Aboriginal parents may require to be empowered by choice of an alternative program to the academic status quo if they are to become involved in their community school.

District Education Authority Members. The members of the District Education Authorities in the Beaufort-Delta region are charged through NWT Inclusive Schooling Directive (1996) and the Education Act (1996) to provide education for all students in their school district. Of interest in judgment of perceived effectiveness in the first document would be the development of a local inclusive schooling policy with a clearly delineated appeal procedure (NWT Inclusive Schooling Directive, 1996; GNWT, 1996). In the latter document the following are most pertinent: a) the consideration of any comments and recommendations with regard to their school provided by students, student representatives, parents, and school staff who have an interest in the school; b) the willingness to enter into agreements with health, justice, social services or other community agencies for services to students for effective delivery of education programs and Individual Education Plans; c) monitor, evaluate, and direct the delivery of school programs to assure the highest possible education standards in the school; and, d) evaluate school plans and provide direction (NWT Education Act, 1996).

LaRocque and Coleman (1989) investigated the practices of successful and less successful school boards. Although many policies and initiatives were similar in both types of boards they discovered that board members in the more successful boards were considerably more knowledgeable about district programs and practices. They also had a clearer sense about what they wanted to accomplish, based on a set of firmly held values and beliefs, and engaged in activities which provided them with opportunities to articulate these values and beliefs (p. 15).

School administrators. Principals and other in-school administrators may be seen as responsible to ensure that teachers have the necessary resources and support service to provide effective instruction to students with FASD. As a leader, the principal is expected to develop a collaborative culture both in the school and between the school and community. The principal is also charged to provide staff development in areas of perceived need (NWT Inclusive Schooling Directive, 1996).

The role of administrators in school-community relations involves interaction with parents, teachers, students, businesses, and other community members to seek input, feedback, and assistance to determine the role of the school in the community spectrum. The main goal of school-community relations is to involve the community in the educational process as a means to assist students to learn. In the role of directing school-community relations the principal had to be aware of the belief systems prevalent in northern Aboriginal communities. The Dene suggested that their cultural philosophy, "The Dene Perspective" (GNWT, 1993), is supported by four fundamental pillars. These are:

- The relationship with the land

- The relationship with the spiritual world

- Consensus and cooperation with other people, and

- Continual self-evaluation and growth

The Inuit (GNWT, 1996 , p. 31) believed their Foundation is based on a series of concentric circles of belonging. The family and kinship are in the centre of a circle and are tied to the land which often gave the family its name. The land encompasses all of

Figure 4. The Foundation of Inuit Educational Philosophy

TUNNGAVINGA
THE FOUNDATION

Cycle of Seasons	Cycle of Life	Circle of Belonging
Early Fall	Past	Family and Kinship
Fall		Community
Winter	Present	Regions
Early Spring		Territory
Spring	Future	Canada
Summer		Circumpolar World
		World
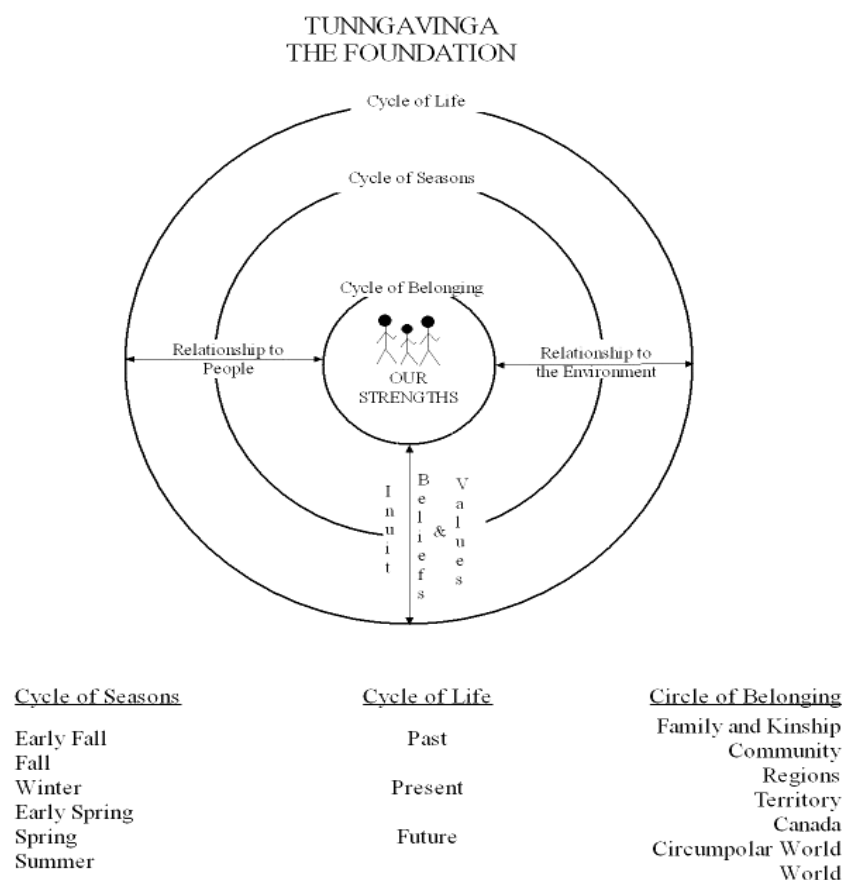
Note: From Inuugatigiit : The Curriculum from the Inuit Perspective (GNWTa, 1996) p. 30

nature: plants, animals, water, ice, wind, and sky. Outside the circle of family is the circle of seasons. Inuit believe that each season is an important part of life and that each season brings different challenges and gifts. The next outer circle is that of life. This involves a connection of all living things past, present and future. Extending outward from the family at the centre and holding the circles together are Inuit Values. These are required to develop sharing, self-respect and obedience to the natural and spiritual. Like a spoke on a large wheel the Inuit beliefs stretch from the family centre outward and are often told in parable form to show people how to teach and shape Inuit identity

The differing philosophic views held by the participants, both Aboriginal and non-Aboriginal, suggest a variety of beliefs concerning their roles and responsibilities. Understanding of the nature of these philosophic differences will be vital when allocating importance to the outcomes designed to enhance the schools and community responses to students with FASD.

Other jurisdictions have also struggled with isolated schools and communities where there are a variety of beliefs in play. Their experiences can be utilized to bring insights to appropriate responses to community problems in the Arctic. Examples of this work are to be found in Saskatchewan's School PLUS Program which provides an excellent overview of community education in that province. Another publication by Saskatchewan Education outlines policy, vision, goals, principles, strategies, and "best practices" for community schools. Responses to community schooling problems are published by Manitoba Education, Citizenship and Youth (2006) in the form of a support

document. This publication describes successful community schools, identifies the components of that success, and provides information essential to their creation.

Teachers. In each school the teaching staff is responsible for the development of appropriate instructional programs under the leadership and support of the Program Support Teacher. They are expected to be part of the Individual Education Plan team that meets regularly using a problem-solving approach to address the program and support the needs of students with FASD. They are also charged to direct classroom assistants to implement programs most effectively (NWT Inclusive Schooling Directive, 1996).

Coleman (1998) suggested that each teacher be proactive and invite the parent to be involved in the instruction of the child. This collaboration is best conducted in an atmosphere where the parents' rights and responsibilities are asserted and where parents are informed about the child's curriculum and the instructional methodology used. Teachers should also provide activities that the parent and child can do together and feedback to parents/guardians on their child's educational program. Darling-Hammond (1997) saw the relationship developing where both teacher and parent can "offer observations about student's strategies, paces, and styles of learning; their different strengths and experiences; the ways they express what they know; and the kinds of teaching strategies effective for them" (p. 145).

Community members. The role of Aboriginal community members in northern communities brings them closer to children through the importance placed on the extended family. This is emphasised by the Dene through their belief in consensus and cooperation (GNWT, 1993). The Inuit hold a similar view with the family as the centre of their life and the community as the next circle of influence (GNWT, 1996). In both

cultures the closeness of family and community members is important. It is also common for other adults to take over parental responsibilities should the parents be unable to fulfill their normal roles.

    Other community professionals. In the communities in the study other professionals were, as in the case of teachers, frequently outsiders who arrived in the community to provide services. These were commonly health care providers, police officers, and administrative officers for the hamlet. Their tenure was often brief and they did not have the opportunity to establish relationships with the children of the community in the manner of a teacher. They were obliged in the nature of their professions to cooperate with the educational staff to provide services to the students, the parents and to other community members.

<div align="center">Ill-Structured Problems</div>

    The use of Problem Based Methodology as the specific vehicle for the community based research suggested that some examination be given of the concept of ill-structured problem at the heart of this methodology. Robinson (1993) suggested that most educational problems are ill-structured. These problems are described as lacking obvious criteria for solution adequacy, with unclear means for reaching a solution, and with an uncertainty about the nature and availability of the required information. In contrast, well structured problems have clear solution criteria, with definable procedures to reach a solution, and specific amounts of available information (Simon, 1973).

    Schon (1983) viewed ill-structured problems, from the practitioner's perspective, less as problems than as "messy, indeterminate situations". This makes ill-structured problems, both in education and in other disciplines, difficult for the practitioner to define.

The initial practitioner task is one of problem setting rather than problem solving. Problem setting is the process by which, he suggested, "we define the decision to be made, the ends to be achieved, the means which may be chosen. Jonassen (1997) viewed ill-structured problems as emergent and suggested it critical to conduct an initial examination of context to build a body of information about the problem area. The knowledge of the domain of the problem, gained in this problem setting phase, is important in both the understanding of the problem and in the generation of solutions. However he cautioned that ill-structured problems frequently possess elements not known with any degree of confidence, multiple solutions or no solutions at all, and possess multiple criteria for evaluating solutions making adjudication uncertain. In short, the major problem–solving activity in solving ill-structured problems is providing a problem with structure when none is apparent (Simon, 1973).

Ill-structured Problems in Education

Robinson (1993) suggested an examination of the theories in action to illuminate the meanings, values, and purposes behind the actions of people involved in the ill-structured problem. Three major benefits, she suggested, will result from this examination. The first will identify whether or not the theories of action are a contributor to the problem. Should this be the case it may be extremely difficult to suggest a resolution until the theories of action are amended. The second benefit accruing from this examination will be the identification of the participants contributing to the problem and of those participants who can be recruited to resolve the problem. This gives explanatory and predictive power and permits an interpretation of why participants behave and how they are likely to behave in future situations (Argyris & Schon, 1974). The final benefit

from a review of the theories of action is that embedded in this approach is the opportunity to fashion change in a cooperative rather than coercive manner.

Robinson (1993) cautioned that, while useful in the solution of some ill-structured problems, theories in action should not be used exclusively. In some cases they provide a lack of emphasis on context of the problem and the social structure inherent in many educational problems. The approach she suggested is one that formulates the problem on a modest rather than a grand scale. This allows the participants to break the problem down into a number of smaller, well-structured problems. Modestly formulated problems allow tighter analyses, the ability to identify critical evidence, and permit easier feedback that is essential for theory revision. Simon (1973) also argued for smaller, well, structured problems that can be co-ordinated to create a coherent solution. Weick (1974) believed grand scale attempts to solve ill-structured problems suffered from the difficulty in co-ordinating the tasks and the psychological difficulty of participants facing a challenge that is likely beyond their normal capacity. He suggested that participants break the problem into small tasks and look for small wins. These small wins reduce importance, make demands less of a burden on the participants and raise their perceived skill levels.

The study examined the structures and strategies used by the three schools and communities to enhance the long-term prospects of students with FASD by an examination of the roles and responsibilities of the participants. This was designed to provide a framework for their efforts in this area. Insights were provided into the relationships between the participants especially in the differences of their fundamental views on family and community. Another implication of the study is how the partnership

between each school and community enhanced the long-term prospects of students with FASD.

The framework of the study revolved around the anticipated problems of the students with FASD and the responses that would spring from the school staffs and community members. The problems were identified as prevalence of students with FASD, behaviours and achievement, at-risk students, and school / community relationships. The categories of response were cultural, school effectiveness and improvement, the structural response and the roles and responsibilities of the participants in the study. The anticipated use of Problem Based Methodology, and the attempted solution of an ill-structured problem, prompted the inclusion of the literature that informs how practitioners examine long range problems and achieved their solution.

Recent Publications in the Field of FASD

In the years of 2002-2007, publications in this field were heavily weighted in the field of diagnosis. Previous research has identified the relationships between alcohol and frequency of use, gestational age, nutritional status, maternal and fetal susceptibility and the prevalence of FASD.

Accurate and timely diagnosis is essential to improve outcome by providing appropriate patient care and reducing the risk of secondary disabilities. It also provides better opportunities for prevention and provides accurate numbers of prevalence (Astley & Clarren, 1999)

Canadian guidelines for diagnosis of FASD have been developed in an effort to reach agreement on a national standard. The guidelines are organized into seven categories, screening and referral; the physical examination and differential diagnosis; the

neuro behavioural assessment; treatment and follow up; maternal alcohol in pregnancy; diagnostic criteria for fetal alcohol syndrome(FAS); partial FAS and alcohol related neuro developmental disorder; and harmonization of Institute of Medicine and 4-Digit Diagnostic Code approaches.

The guidelines observe that optimal outcomes from diagnosis are not possible unless the community and family are prepared for the assessment. Participants will need help and support to move through the diagnostic process, including information about FASD and community supports and resources available to them. Fear of labelling may lead some parents or guardians to look for an alternative diagnosis of attention deficit or hyperactivity (Chudley, Conry, Cook, Loock, Rosales, & LeBlanc, 2005).

The remote communities of Canada's North pose their own challenges to the formation of diagnostic teams and availability of diagnostic services but the use of telemedicine for distant diagnosis, consultation and training is an alternative approach that can overcome some of the handicaps imposed by distance and isolation.

Diagnostic accuracy

Astley (2003) suggested that diagnosis of individuals with prenatal alcohol damage varies widely between physicians. She posited that the guidelines for Central Nervous System dysfunction reflect a gestalt approach depending on the physicians overall clinical impression rather than the interpretation of precise data. To overcome these limitations the 4-Digit Diagnostic Code was developed (Astley & Clarren, 1999). The four digits of the Diagnostic Code refer to the magnitude of expression among the four key diagnostic features of FAS. These are:

1. Growth deficiency
2. FAS facial phenotype

3.   Brain damage/dysfunction
4.   Prenatal alcohol exposure.

Each feature is ranked independently on a four point Likert scale with 1 reflecting complete absence and 4 indicating a strong presence.

This resource offers a digital approach on a continuum of disability. This is more precise and contains more predictive power than the gestalt approach to diagnosis. Nanson (2003) in reviewing the work of Astley in developing the 4-Digit Diagnostic Code agreed that physicians may be trained to use the system with a high degree of accuracy. However, she observed that the use of four digits does not provide an accurate description to service providers of the child's condition e.g. FAS, ARND, ARBD. Consequently the four digits do not provide a description of the conditions essential if other professionals are to provide programs and services.

Aboriginal Views

The Aboriginal view of FASD is somewhat different from that held in the mainstream. Maguire (2003) reflected that most of the research based in the United States and that it lacks Aboriginal content. She expressed the belief that by living with FASD for a protracted period the Aboriginal communities are aware of their problem and are moving beyond denial to acceptance.

Maguire (2003) viewed lack of trust as one of the main impediments to success in screening and prevention programs conducted in Aboriginal communities by non-Aboriginal people. Inn her view many of these practitioners and service providers are not sufficiently educated about how Aboriginal people view FASD. The outsiders view their role as immediate and as one of treatment of a disease: the Aboriginal people view FASD as long term since it is a lifetime disorder.

Schnarch (2004) suggested Aboriginal people adopt a self-determined approach to research. This will be accomplished by controlling ownership, control, access, and possession (OCAP) of all research on Aboriginal people. He posited that Aboriginal people have been over-researched without having any control over the research agenda. Consequently the research has had little in common with Aboriginal priorities.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

At the beginning of every research project the dilemma of establishing the perspective from which the design of the study will flow must be addressed. There are a number of methods available to every researcher and the chosen method should fit the purpose of the research. White (1999) identifies three main modes of research – explanatory, interpretive, and critical.

Explanatory research uses the philosophic tradition of positivism and its theories to explain and predict natural events using deductive-nomological explanation as the normal model. Explanatory research has not been successful in developing grand theories in the social sciences (Stringer, 1999; White, 1999). Interpretive research involves analytical philosophy, hermeneutics, and phenomenology and is concerned with understanding action rather than explaining behaviour. It is concerned with the meanings people attach to norms, rules, and values and strives to enhance mutual understanding between the researcher and the participants. Good interpretive research follows the standards of inquiry and presentation; is readily understood; is comprehensive in its coverage of the situation and actors involved; and, is consistent with no contradictions. By itself, however, interpretive research does not lead to social change (White, 1999). Critical research seeks to help people remove constraints on belief and action that prevent true understanding of themselves and their situation. Critical research recognizes that a certain tension exists between our strivings and the limitations imposed on us by social conditions, even those conditions of which we are only vaguely aware. The role of theory

is to reveal these contradictions and thus permit us to pursue our own freedom (Denhardt, 1984).

The use of self-reflection of one's thoughts and actions permits the critical researcher or other involved participants to make judgments of fact and value. This requires a relationship between the researcher and the participants since following the self-reflection the participants are often motivated to take action to change their situation to a form that better suits their own interests (White, 1999).

This study had two main purposes. The first investigated the work of three administrators and their staffs as they attempted to solve the ill-structured problem of integrating students with FASD into their schools. A further purpose of the study was to investigate the role played by schools in influencing community responses that would enhance the post-school lives of students with FASD.

Both goals were interpretive, dealing with norms, rules and values. The interpretation resulted in an increased understanding of the school and community. The possibility that the participants would elect to make changes to their school and community further suggested a critical component to the research.

<center>Problem-Based Methodology</center>

This study was assisted by the adoption of concepts used in problem-based methodology. This methodology examines educational problems and proposes solutions from the perspective of the practitioner. Researchers and practitioners face different problems. Practitioner's problems "are problems about what to do, and what counts as a solution is constrained both internally by their own beliefs and values, and externally by material conditions and institutional and cultural expectations" (Robinson, 1993, p.13).

The constraints that act upon the principals and staff in the Beaufort-Delta schools are of resources, experience in the field of northern education, and expertise in dealing with students with FASD. Practitioners must solve problems while adjusting and adapting for the above-mentioned constraints. This is a different approach from that employed by traditional research where constraints are frequently removed so that the evidence will fit the researcher's hypothesis. The research then loses meaning for the practitioner who is obliged to work and to research for solutions in a practical context. Experimental research frequently eliminates variables "that are most significant to practitioners' decisions about how to act" (p. 14).

The role of the researcher is one of service to the practitioner and by seeking to promote practitioner knowledge the researcher may be obliged to moderate the importance of theoretical approaches to research (Kemmis & McTaggart, 2000). Problem-based theory is practitioner research that follows the approach suggested by Argyris and Schoen (1984) who developed the concept of espoused theory of an organization differing from the theory of action. Problem-based methodology looks at an improvement in theory of action and by doing this it brings additional resources to the study. There are three key themes upon which PBM focuses:

1. Practitioners' problems and how practitioners seek solutions;

2. Alternative methods to resolve educational problems; and

3. Moving beyond description of the problem to problem resolution.

Practitioner Problems

When solutions are sought within the constraints of the structure, practitioners are permitted to enjoy meaningful participation in the research process. Robinson (1993) states:

> Researchers must conduct these processes of problem understanding and resolution as a critical dialogue with the practitioners, so that competing theories of the problem can be adjudicated and new theories of action learned during the course of the research itself, rather than left to some subsequent process of dissemination. (p. vii)

Usually educational practitioners face problems that are ill-structured. A well-structured problem has few decision makers or stakeholders, limited alternatives, is well-defined and has agreed upon values to direct solution action. On the other hand, the ill-structured problem has many decision makers or stakeholders, numerous alternatives, competing definitions of the problem, and conflicting values for solution making (Dunn, 1981). The challenge of integrating students with FASD into northern schools is an ill-structured problem and its solutions will benefit from the assistance of problem-based methodological approaches

One suggested approach to the solution of ill-structured problems is to break them down into smaller well-structured problems (Simon, 1973). This approach does not work well in education where most problems are ill-structured because they are either under-theorized or because of a lack of agreement concerning the adequacy of numerous and rival solutions (Robinson, 1993). This is not to say that ill-structured problems need only be addressed if they are on a large scale. Robinson (p. 51) suggests that problems that are modestly formulated lend themselves to formulation due to the greater ease with which

researchers and practitioners may learn what is involved in achieving solutions and can more readily mobilize the resources.

Another technique to address ill-structured problems is the use of a constraint structure to establish parameters for acceptable solutions (Robinson, 1993). The constraints work with strategies that complement them to generate a theory of action for the ill-structured problem. There are two types of theories in action distinguishable by the evidence from which they are derived (Argyris, Putnam & McLain Smith, 1985). If the theory in action is suggested by the way people say they behave, or indicate they would behave, it is described as an espoused theory. If the theory in action is verified by actual behaviour it is described as theory in use. In the former the constraints describe the belief system of the practitioners: in the latter the constraints are in actual use. In their search for better theory to solve ill-structured problems researchers have developed criteria and a method of theory adjudication (Robinson, 1993).   Robinson (1993) gives four criteria as basic to this approach. These are explanatory accuracy, effectiveness, coherence, and improvability. By using the four criteria researchers can adjudicate between suggested solutions to an ill-structured problem.

Explanatory Accuracy

In adjudicating the adequacy of one theory over another use can be made of the accuracy of causal accounts of the phenomenon. In the causal account, the particular events and processes, together with the conditions of the phenomenon can be weighed and valued (Robinson, 1993). There is a greater emphasis on agreement between inferences and conclusions in PBM than mere agreement per se.

Effectiveness

In determining the effectiveness of a theory in action the criterion revolves around the production of intended consequences without violating important constraints. Problems, where the theory of action has a causal theory embedded within it, contain considerable overlap between effectiveness and explanatory accuracy. However many theories in action do not contain causal theories of the problem. In such cases practitioners need to use the effectiveness criterion as well as explanatory accuracy, because success in the first criterion is not a sufficient or necessary condition for success in the second (Robinson, 1993).

Coherence

This criterion demands that theories be judged using knowledge that is outside the framework of the theory. With coherence the evidence should be consistent with theories that have previously been accepted as relevant. By using "best theory" as a constraint on theory formulation coherence establishes the parameters and reduces the uncertainty of ill-structured problems (Robinson, 1993).

Improvability

It is possible that the use of criteria of explanatory accuracy, effectiveness, and coherence may still generate theory that is in error. By maintaining theories that are open to the possibility of error, and consequently revision, practitioners establish a greater possibility for the growth of knowledge and for problem solving (Robinson, 1993).

The integration of students with FASD into these northern schools was an ill-structured problem. The use of problem-based methodology permitted the practitioners to describe solutions they had sought to this problem outside the structure of the school

board and the Education Act. These solutions were judged for effectiveness using the four criteria to adjudicate and solve ill-structured problems.

<center>Alternative Approaches to Resolve Educational Problems</center>

The use of critical dialogue between researcher and practitioner in an examination of the problem is a key feature of problem-based methodology. This process can best be described as a conversation that is simultaneously critical and collaborative and is frequently beset with psychological and social barriers to effectiveness (Robinson, 1993). Argyris and Schon (1974) suggest when solution strategies remain within the existing constraint structure and require no change to the central tenets of a theory in action since single-loop learning occurs. However problems that require major adjustments to practitioner's core values and beliefs will also require double-loop change. This involves reconstructing the theories of action that drive the problem situation, determining their causal role in the problem, and if necessary, developing, implementing and evaluating a new theory of action.

The use of single-loop learning is less disruptive than double-loop learning and permits the practitioner to continue with the predictable activities that are part of our daily lives. Double-loop learning destroys this routine but is essential when a theory in action requires change to the governing variables. The results of double-loop learning cause change throughout a person or organization's theories-in-use.

<center>Solving Educational Problems</center>

Robinson (1993) suggests that critical dialogue is similar to what Argyris (1982) describes as Model Two. In critical dialogue behaviour, practitioners and researchers collectively make decisions and solve problems through the exchange of the best possible

information. This is ensured when all parties expose their perceptions, attributions, and evaluations to the critical review of others . The public exchange of these opinions and reviews allows their accuracy to be gauged and their implications discussed. A second benefit of critical dialogue is an increased feeling of responsibility and commitment to the problem-solving process. The testing of perceptions by all parties allows them to assess the costs and benefits of being involved in the study. This may also be applied to the understanding and resolution of sensitive issues before information may be shared.

Figure 5: A Model of Critical Dialogue

Guiding Values	Key Strategies	Consequences
Increased valid information for all participants	Openness about own views, the reasons for them, and their fallibility	Problem-solving effectiveness is increased through -greater availability of information -higher quality information
Enhance freedom of informed choice	Public testing of the adequacy of one's own views and understandings	Commitment to the process and outcomes of increased problem-solving is increased
Enhanced commitment and responsibility	Bilateral control of the process and content of the interaction, including the management of emotionally difficult issues	Emotional issues do not jeopardize problem-

Note: From Problem-based Methodology by V. Robinson, 1993, p.55

The use of critical dialogue between researcher and practitioner in problem-based methodology is guided by three principle values that Robinson (1993) urges be translated

into a set of appropriate interpersonal skills. The first value is valid information that, by

the use of openness and acceptance of controversial and even embarrassing information,

increases the problem-solving effectiveness through the availability of greater amounts of

higher quality information. The second value is free and informed choice that when tested

in a public forum and exposed to the scrutiny of others becomes tempered and

more committed to the problem-solving process. The third value is internal commitment

that is developed by a high quality of dialogue translated into behaviour that addresses

and solves emotional issues. In Figure 6 the values of critical dialogue and the strategies

and consequences relating to their application have been illustrated.

The espoused theory of critical dialogue is frequently subverted when practitioners

and researchers have something at stake and disagreement is anticipated (Argyris, 1982).

This is accomplished by the theory of unilateral control which is employed in difficult

situations or when unpleasantness is to be avoided (Robinson, 1993). This theory of

unilateral control is akin to Model One as described by Argyris (1982). The desire to win

when something is at stake and avoid unpleasantness in the process is

 not a problem when conflict is not present. With ill-structured problems that arouse

negative feelings, such unilateral tactics can lead to an escalation of conflict or a passive

acceptance of what the controlling participant desires. Either approach causes a reduction

in the quality of information and in commitment to the problem solving process

(Robinson, p. 61).

Specific Context of the Study

The Educational Council was typical of many northern school boards. The schools

and communities varied in size from a regional center of more than 3 000 people to a

hamlet of 140 people. The communities, with the exception of the regional center, were all relatively isolated and predominantly Aboriginal. The great majority of the teaching staff was not from the community, or indeed from the north, and teacher turnover was at a higher level than in southern jurisdictions. The average experience of the teachers in the smaller communities was less than five years. The teaching staff of the school in the regional center was more experienced both in years of teaching and northern experience however retirements have altered the balance of teacher experience leaving the regional center school with similar teacher experience to the other schools in the study. In all of the schools support staffs were local people and their tenure tended to be of a protracted period. All of the schools were felt to have a cohort of students in the fetal alcohol spectrum.

There were three levels of access to the schools in the study. The school in the regional center was accessible to the researcher at all times. In the Mackenzie Delta the school was most accessible in the mid-winter months from early January when the ice-road was in place. This allowed driving access to the community until mid-April at which point flying became the mode of transportation. The school on the Arctic Archipelago was accessed using scheduled plane service which is available year round. The staff and community members from both of these schools were also interviewed in the regional centre.

The design of the study was constrained to some extent by travel restrictions. The principals were approached about participation in the study in October. Late in February data was collected in the school in the regional centre and also from staff members in the school on the arctic archipelago. The data for the school on the Mackenzie Delta were

collected both as staff members visited the regional centre and by a visit to the school in March.

Another constraint on the design was the inability of the principals to engage community members as participants in the action research. This difficulty placed the problem-based methodology as the premier method of solving the research questions.

Data Collection Techniques

The gathering of data permits the spontaneous comments and general opinions that are gathered as the study unfolds to be turned into systematic records and detailed statements (Winter, 1996). The process of gathering requires a general plan if it is to provide a documentation of the observation stage and the material required for reflection. The data for this study were derived from interviews with all participating practitioners, and DEA board members. An on-site visit was made to the each of the schools and more extensive data were collected.

The inclusion of problem-based methodology determined that data selection involved a search for behaviors in classes of interest and the knitting together of these classes to show their unity as a problem (Robinson, 1993). The recording of these data were accomplished with field notes of observations and tape recordings of meetings and interviews.

Interviews with Individual Participants

During the Principal's group meetings in February and May, 2003 I met with the individual administrators to allow expression of their thoughts. A further personal interview was conducted when I was on site at each school. At that time I interviewed

staff members who had special concerns or interests in the study. I also interviewed

community health professionals and DEA members who had input to the study.

Reflection Meetings

The difficulty of access to the communities and the participants in this study made

it impossible to arrange these meetings. An exception to this case was that of the

principals whose frequent travel to Education Council meetings made meeting for

reflection possible. The meetings were conducted at the end of the school year of the

study. This is a limitation of the study and is noted.

Data Collection and Administrative Methodology

In this section the timetable of research cycles and data collection are outlined.

The data were collected throughout one school year. The distances involved between the

communities obliged the researcher to interview participants in the study when they were

available in the regional centre. An on-site visit was made to each school.

Invitation to Participate

The invitation to participate in the study was by a letter addressed to the Principals

in the schools in the Beaufort-Delta Education Council. This letter was mailed to them in

the first week in September 2002. The principals were apprised of the problem as

identified in the largest school in the Education Council and the methodology to be used

in the research. They were invited to participate in the study with the understanding that

their participation was voluntary, they could withdraw at any time, and that their school

would reflect a specific context to the research and problem-solving. It was the

responsibility of the individual principals to invite a small number of parents to participate

in the study.

Research License

A research license had to be secured from the Research Council of the NWT

before the study could proceed. This application was made in the first week of September

2002 and involved approval of the various hamlet, village, and town councils as well as

the DEA for each community. The Education Council also had to approve the research.

This application was made during the first week in September 2002 and was completed

following the Education Council meeting the next month.

The school in the regional centre was readily accessible to the researcher. In

February 2003 I began to interview the staff members. These were the principals, the

program support teacher and two teachers whose classes contained many at-risk students.

Also interviewed at that time was the public health nurse who had practised in the school

for five years. School policies on discipline, attendance, and home schooling were

gathered at this time.

Interviews with the principals from the schools outside the regional centre took

place in Inuvik during the first week of February 2003. The participating principals

gathered for Education Council meetings and were interviewed during their stay in Inuvik

and their espoused theories documented. They were asked to bring copies of their school

policies on discipline, attendance, and home schooling and the document analysis was

begun.

While action research and problem-based methodology are emergent approaches

to research, part of the general plan for data collection involved some open-ended

questions to the participants. The questions are contained in Schedule C

On-site interviews. The interviews in Inuvik were conducted with teachers and DEA members early in 2003. The school in the Mackenzie Delta was visited and interviews conducted in early April 2003. At that time the ice road on the Mackenzie River was in use making motor vehicle travel possible in the area. While in the school, I interviewed the program support teacher, a program support assistant with duties centred on students with FASD, and a classroom teacher. In addition an interview was conducted with the community nurse.

The arctic coast school was visited prior to the granting of the research licence when my duties for the Education Council took me to the community. Unfortunately interviews could not be conducted at that time. As mentioned above, the principal was interviewed in February while in Inuvik attending Educational Council meetings. A classroom teacher and the Aboriginal language teacher were also interviewed in Inuvik in March 2003. They were returning from professional development in southern Canada and were obliged to overnight in the regional centre.

Data analysis. The analysis of the data in the study was accomplished through the lens of critical dialogue. The use of explanatory accuracy, effectiveness, coherence, and improvability allowed theory adjudication. This placed the process of problem analysis and resolution in the hands of the stakeholders (Robinson, 1993). The critical dialogue process is not a simple one and Robinson (p. 169) cautions on the dangers of inequality of expertise. She suggests that bilateral management of the key tasks of problem-based methodology are more easily attained after the practitioners gain some experience with the critical dialogue process. It is worth noting that disagreements are expected in critical dialogue and resolution is not always possible. Robinson (p.171) believes that some

unresolved disagreements occur in every ill-structured problem. This is indicated in

Figure 5 and it is suggested that this situation be handled in a bilateral rather than a

unilateral manner.

Validity, Reliability, Rigor

Verification is the degree of confidence that may be afforded the findings of a

study. It refers to the mechanisms used during the research to contribute, in an

incremental fashion, to reliability and validity and by so doing to the rigor of the study

(Morse, Barret, Mayan, Olson,& Spiers, 2002). While the mechanisms may be different

from traditional validation techniques, and some controversy surrounds the need for

validity in qualitative research (Wolcott, 1994), I believe the issue of validity cannot be

ignored. The knowledge claims of this study are justified, in part, by triangulation,

prolonged engagement, and detailed description. These are commonly used in interpretive

research and are complemented by group reflection and effects on practice from action

research. The use of error detection and correction and member checks from problem-

based methodology rounded out the justification of knowledge claims.

Triangulation

This term refers to a mechanism which collects data on the same phenomenon

using a combination of sources or methods i.e. persons, times, places (Jick, 1979). In this

study source triangulation was used for data collection from the principals, staff, parents,

DEA members, health professionals, and community officials. Method triangulation was

achieved by collecting data through participant reflection meetings, individual interviews,

and artifact collection.

Prolonged Engagement

In this study interviews were conducted with a number of stakeholders in each school and community. This permitted the observation of behaviours and gathering of opinions that identified the espoused theories and theory in action of the various stakeholders.

Detailed Description

The provision of a detailed outline of the context of the study and a complete and accurate account of the activities and the data that are the basis for the findings provided a foundation for assessing the usefulness of the results in other settings. To this purpose the schools, communities, participants, the research activities and the data were described in detail.

Effects on Practice

One of the themes of action research is to produce social change. The changes made in the practices of teachers in the schools or the change in relationships between community members and students with FASD was validation of the successful results of the study. If stakeholders believe that there is an improvement in the structure, culture, and effectiveness of the schools this indicated that the study had enjoyed some success.

Error Detection and Correction

In this process disconfirming evidence was noted and given appropriate weighting in the data analysis. This is common practice in quantitative research but has no equivalent in qualitative methodology. Cronbach (1980) as cited in Robinson (1993) states "the job of validation is not to support an interpretation, but to find out what might be wrong with it. A proposition deserves some degree of trust only when it has survived

serious attempts to falsify it" (p. 116). This involved a search for weaknesses in

hypotheses that are accepted, as well as a search for better solutions to the problem. A

common method in PBM is to review the attributions and verify if they are correct by

rereading transcripts, reflective logs, or field notes. The detection and correction of error

was conducted to disconfirm hypotheses in favor and to search for possible alternatives.

Member Checks

This process negotiates research accounts with participants and is viewed by

Lincoln and Guba (1985) as the primary method of establishing credibility in qualitative

research. In PBM the purpose of member checks is to improve theory through the

detection and correction of error and to examine the basis for particular beliefs (Robinson,

1993). Member checks provided three major contributions to validity in PBM. The first

was proving the data to be reliable through agreement by the participants that the records

accurately reflect what occurred. The second was to accurately reflect the researcher's

reconstruction of the theories of action. The third contribution was to verify the

researcher's critique of the practitioner's theory. At this juncture participants had the

opportunity to raise objections to the researcher's analyses and, through critical dialogue,

prevent unchecked attributions from the researcher.

Ethical Considerations

In this research the guidelines developed by the Social Sciences and Humanities

Research Council were followed and each person being interviewed was given the

guidelines. The research was approved by and licensed by the Research Institute of the

NWT.

The participants were fully apprised of the nature and purposes of the study, their participation was voluntary and they could withdraw at any time. Each participant signed a waiver to that effect. Each participant was given the opportunity to react to reports and interpretation of the data of which they were part. Anonymity of the schools and participants will be maintained. The three principals of the schools who participated were interviewed. A sample group of teachers, health professionals, and District Education Authority members, were interviewed. No students were interviewed as part of this study.

Summary

In this chapter the practical action research allied with the use of problem–based methodology was outlined. The aims of this action research study were to produce practical improvement, innovation, and change to the schools. It was also the aim of the study to allow practitioners to better understand praxis (Zuber-Skerritt, 1996). In this chapter I introduced problem-based methodology as a means of examining the ill-structured problem from the practitioner's perspective. It was utilized, through an examination of the ill-structured theories of the problem, to promote an understanding of the espoused theories and to develop new theories in action. This was achieved by the use of critical dialogue between the researcher and the practitioners to resolve the educational problems of students with FASD and to devise new strategies for their integration into the school and community.

The use of a variety of techniques from interpretive research, action research, and problem-based methodology guaranteed verification of the findings of the study. The ethical considerations protected the anonymity of the participants in what can be a sensitive topic.

CHAPTER FOUR

THE LARGE SCHOOL: CONTEXT AND DATA PRESENTATION

In this study the findings were influenced by the context in which the study was conducted. To assist readers to determine the usefulness of the findings, thick description of the context is required. A detailed description is provided of the schools, teachers, leadership, and the nature of the schools processes to address that need. Further detailed description is provided of the communities, their populations, leadership, and economies. Understanding of the influence of context of each community and school will be facilitated by separate presentation in individual chapters. My understanding of these schools and community elements was formed over the course of a year of formal interviews, informal discussion, and observation at meetings and informal gatherings.

The three schools in this study are part of an Education Council located in northern Canada. The Council consists of nine schools with a total population of 1,837 students, mainly of Aboriginal descent, and approximately 180 teaching staff (Mackay, 2003). The Council is under the direction of a Board of Representatives each of whom is nominated from the District Education Authorities (DEA) in their community. There are also two representatives from the Aboriginal claimant groups of the region, giving a high percentage of Aboriginal representation in the decision-making process. The Chairperson, Vice-Chairperson, and a third member are elected by the ten representatives of the Education Council and form an Executive. The cost and time required for travel permits the Education Council to meet face-to-face only three times per annum leaving the Executive to give guidance and direction to the Director and office staff on a regular basis.

The central office staff comprises of a Director, an Assistant Director, a Superintendent of Schools, three educational consultants and a variety of support personnel.

<div align="center">Inuvik: The Large Community</div>

The tri-racial character of the regional centre is exceptional in the Canadian Arctic. While other towns have a mixture of races, Inuvik is the only place where the Inuit, Dene, and non-native people live together (Town of Inuvik, 2002). The population, whatever their ethnicity, must be hardy, due to the extreme nature of the Arctic climate. The short summers are often pleasant with 56 days of 24-hour daylight and a mean July temperature of 14C. The Arctic winter is daunting with mean January temperatures of – 30C and 30 days without sunlight from early December to early January.

History

In the early 1950's the location of the regional centre, Aklavik, caused concern to Prime Minister Diefenbaker's government. The community was prone to flooding and had no high ground suitable for expansion. Consequently construction of a new regional centre was considered. The concept was given impetus in the spring of 1954 when Aklavik suffered a particularly severe flood (Legislature of the NWT, 2000). Survey teams were dispatched, the present site of Inuvik selected, and planning began immediately. Late that summer several million board feet of lumber were barged up the Mackenzie River from Alberta to permit construction to begin in the spring of 1955 (Legislative Assembly of the NWT, 2000). By 1956, a temporary school was available with the health office and the RCMP station opening the next year (Lamoureux, 1999).

Inuvik was declared a hamlet by proclamation of the 5th Council of the NWT on July 18,

1958 (Inuvik Town Facts, 2002).

Construction continued during the decade and the population grew steadily. A

Kindergarten-to-Grade 12 school was completed in 1959 and a 55-bed hospital opened in

1961. The Scientific Research Laboratory was completed in 1964 as a facility to provide

assistance to government, university, and industrial scientists. In 1967 the Inuvik

Centennial Library was completed and the community had grown sufficiently to be

accorded village status. The growth continued and in January 1970, Inuvik became a

town with the right to elect a mayor and council.

Construction of a town at this latitude during the Cold War fostered military

interest and in 1961 HMCS Inuvik was commissioned, holding that name until 1966 when

she became Canadian Forces Station Inuvik. The station was decommissioned in May

1986 and the resultant departure of approximately 800 people was a severe blow to the

community (Sutton, 2001; Legislature of the NWT, 2002).

The 1970s was a decade of explosive growth in the north and Inuvik enjoyed both

the benefits and drawbacks of that development. Exploration for petroleum in the

Mackenzie Valley and the Beaufort Sea began in 1971 providing employment and

business opportunities for local people. During this period the Dempster Highway was

constructed and by 1979 a gravel highway ran 740 kilometres south from Inuvik to

Dawson City, Yukon, providing almost year round access to the community. The

economic activity, beginning in the early 1970s, lasted almost two decades and during this

period the reputation of Inuvik as a town of "pick-ups, boats and booze" was fashioned

(NNSL, 2000). It was not until 1990 that a combination of low government subsidies,

low petroleum prices, and local resistance to resource development resulted in the withdrawal of oil companies.

Population

The 1996 Canadian census indicated that there were 3290 people living in Inuvik. Of these 60 per cent were non-native, 25 per cent Inuit, and 15 per cent Dene/Metis. The 2001 Canadian census suggested a population of 2894, a drop of 12.2 per cent. These data, as with all data on the NWT from that census, were in dispute because it observed a shrinking northern population during a time of high employment and high birth rates. The current suggested population for the Town of Inuvik is 3450 people.

The Aboriginal organizations in Inuvik settled their land claims with the Canadian government. Following the Berger Inquiry in 1976 and the 10 year moratorium on a pipeline the Inuvialuit accepted a settlement in 1984. This was the first land claim for an Aboriginal organization in the NWT while the Gwich'in settlement in 1992 ranked second.

The settlement of these land claims permitted both Aboriginal organizations to establish a corporate presence in the community. The Inuvialuit have their headquarters in a square, three-story building in the centre of town. The building was constructed in 1988 and retrofitted in 2002 to increase the workspace. The Gwich'in corporate headquarters are housed in a two-story building south of the elementary school. Both organizations have interests in managing the land they were ceded as part of their settlements and also have significant business investments making them major employers in the Town of Inuvik.

The non-native population in the north has a record of transience. Miller (2000) suggested three essentials to the relationships between the northern Aboriginal people and the non-natives from the beginning of contact. These were Native residency, non-native transience, and an indifferent Canadian government. In recent years the government has indicated a growing interest in the north and, in the case of Inuvik, the outsiders, in defiance of the non-native transience, have put down roots. There is a core group of non-natives who have settled in the community and make it their home. They enjoy the pace of life, are independent of mind, and are as committed to the north as the Aboriginal people with whom they share their town (NNSL, 2000).

Leadership

The mayor and twelve councilors are elected to three-year terms. The mayoralty candidates run separately from the councilors. The present council has two Aboriginal persons and two women in its ranks.

The Inuvik District Education Authority (IDEA), a group comprising of seven elected members, governs the local schools. A student representative elected from the high school body also sits on the IDEA but has no voting rights. The principals of both Inuvik schools report in both written and oral fashion at the bi-monthly meetings. The IDEA employs its own secretary and manages its own budget. Other areas of responsibility are the hiring of teachers and support staff, facility use for after-school groups, busing, and initiatives to support the academic program. Examples of these are the on-the-land and the work experience programs.

Economy

The desire of the federal government fifty years ago to create a modern, planned community in the Arctic has bestowed many benefits upon the people of the area. Boasting many of the services of a comparable southern town there is a busy atmosphere about the community not seen elsewhere in the Arctic. The community remains modern with paved streets, streetlights, and a traffic light. Daily jet service provides transportation from the south; there are three hotels, each with a dining lounge; six churches for worship; and a variety of stores carrying similar goods to those in the south despite the premium added by the long journey to bring those goods to Inuvik (Pilon, 2000).

In 1970 the Honourable John Diefenbaker, as he dedicated the Town Monument to commemorate the three peoples coming together, described Inuvik as: -

> The first community north of the Arctic Circle built, not only as a base for development and administration, but as a centre to bring education, medical care, and new opportunity to the people of the western Arctic. (Pilon, 2000)

Inuvik remains the regional government centre of the western Arctic and is also the major service centre for the petroleum exploration industry in that area. Other components of the local economy are in the renewable resource area involving hunting, fishing, and trapping. In recent years tourism has become an important factor. The community continues to enjoy a vibrant economy and many of the benefits of another boom (Legislative Assembly of the NWT, 2000). Experience suggests that with these benefits, and a predicted tripling of the population, there are inevitable drawbacks to such a boom (Lamoureux, 1999).

The newly recharged economy has once more produced a cohort of well-paid working people in the community who wish to relax and enjoy their leisure hours. Whether they are local people or transient, their social climate is one where alcohol use is

common. Another factor is a general birth rate higher than the national average as well as a higher than average birth rate of teenage mothers (Government of the NWT, 1999). The majority of the community babies of this boom will be raised in Inuvik and attend the local school. It appears inevitable that the prevalence of students with FASD in that school will remain at a high level. A description of the elementary school, the staff, administration, environment and processes, follows.

<div align="center">Sir Alexander Mackenzie School</div>

The largest of the three schools in the study, was constructed in the late 1950's and opened in 1959. It is a large two storied structure located in the centre of the largest of the three communities. Constructed as a cross, the south-north axis is an administration and gymnasium wing that is intersected by an east-west classroom wing. In the fashion of the time, this school was wood-framed with walls of windows that in subsequent years have been replaced to permit more efficient heat conservation in the long Arctic winters.

The front entrance to the school opens into a large two-roomed foyer. To the east side is the school administration office and on the west is the staff room. The second room of the foyer leads into the school gym, which is a large wood-floored facility with a stage at the north end faced by a balcony at the south. On the east side of the gym a hallway extends northwards. The school library, a day-care facility, and a small wood shop are located here.

Also extending from the second room of the foyer are the classroom wings. These run east to west with the central stairway and foyer dividing them. In the lower east wing are the four kindergarten and three grade two classes. The upper east wing hosts the three grade six, three grade five, and three grade four classrooms and a computer laboratory. On

the west side the lower level contains the four grade one classrooms, the Home

Economics room, and a large storage and audio-visual room. The upstairs west wing

contains three grade three classrooms and the three language classrooms. Student work is

displayed throughout the hallways and on the central staircase. In the main foyer is a large

display case that holds displays of student work not easily displayed on walls. These are

periodically changed to reflect school events such as the science fair or trapping

workshops.

Since the construction of the school and its opening in 1959 there has been no

major retrofit. Regular maintenance has benefited the building and, although dated, the

school is accommodating. Each classroom has an Internet connection, with one or more

computers; in addition, there is a large computer laboratory with computers for 24

students. The school library contains a wide selection of books as well as four computers

with Internet connections. Each upper and lower wing contains two television and VCR

machines for classroom use.

Staff

There are 23 classroom teachers in this school. A recent literacy initiative from the

Education Council reduced class size in kindergarten and grade one to 15 students. It also

introduced full-time equivalence in kindergarten classes. This provides four classes in

kindergarten and four classes in grade one with three classes in each grade from two to

six. A simultaneous introduction of immersion French began in the kindergarten level and

is now offered through grade two.

There are five specialist teachers on staff. Three of these specialists are involved in

teaching a second language as every student in this school studies French, Gwich'in or

Inuvialuktun except the cohort of students in French immersion. The fourth specialist area

is physical education. This has been a long-time initiative providing, not only daily

instruction in physical education, but also an after-school sports program that is strongly

supported by the students. A music teacher rounds out the specialist group. Music was

introduced in the school year of the study and the position funded for one year only.

By northern standards this is an extremely stable school. Teacher turnover, until

recent years, had been at 10 per cent or less with five teachers serving more than 20 years

in the school and as many more enjoying 10 or more years of service. Recent retirements

have changed this situation and are an impending factor for more than 20 per cent of the

staff. Alteration to the staff profile, presently underway, promised to bring younger

teachers with energy and new ideas into the school. Younger teachers were generally new

to the north and were obliged to adjust their ideas and refine their methods to better meet

the needs of the students.

Administration

The school principal was in his sixth year in the position and enjoying his first

northern experience after completing many years of service in a Canadian province. His

duties included reporting to the District Educational authority, assisting staff encountering

difficulty when operating the school administrative software, introducing and piloting the

new discipline policy, ensuring that the computerized reporting process is seamless for the

staff members, hiring teachers and allocating teaching duties.

The assistant principal was a long time northerner, whose duties included

management of the school budget, supervising the caretakers, ordering and receiving

supplies, and teaching approximately 50 per cent of each school day. Further comment on the assistant principal is curtailed, as he is also the researcher in this study.

The program support teacher (PST) was an integral part of the school administration due in large part to the incumbent's 30 years of service in the school. This senior staff member supervised a staff of seven program support assistants (PSA) regularly timetabling the small group sessions and classroom visits that each PSA conducted daily. Weekly meetings between the program support teacher and the PSAs were arranged to facilitate an exchange of information on special needs student progress and needs.

Another major responsibility was the construction of Individual Educational Plans and Modified Plans with each classroom teacher. Almost every classroom teacher was consulted in the construction of the Modified Plans for 145 special needs students as well as the Individual Educational Plans for 15 more severely challenged students. Peripheral duties included Kindergarten registration conducted in May of each school year and the development of class lists each spring for the beginning of the school year.

School Environment and Processes

During the school year of the study the instructional day was lengthened by 15 minutes. This was accomplished by eliminating the afternoon recess and the time utilized in two half days each month dedicated to planning. On one of those afternoons the staff planned using grade level meetings as a means of sharing their common concerns. The staff belief was that this time for planning was an essential component in building a unified approach to program delivery. One of the afternoons was dedicated to coordinate their teaching over the upcoming month. This permitted teachers of similar grades to plan

themes, schedule visits of community members and board consultants, timetable library visits, and to organize an approach to share any scarce resources. The second afternoon was utilized by the staff in committee work with an emphasis on school-wide planning. Each staff member was a member of one of four committees dedicated to this purpose. The committees were community involvement, school spirit, restitution, and literacy. Each committee met, reviewed the work accomplished in the month since the last meeting, made plans and established duties about upcoming events and, following their meeting met with the entire staff. Each committee reported on their meeting and participated in discussion on the meetings of the other committees

During this year the five professional development days were dedicated to the development of a new behaviour plan based on restitution principles. This plan was viewed by the administrator and the staff as part of the solution in dealing with students with FASD. Following in-service, a behaviour plan based on restitution principles was adopted in February and piloted throughout the rest of the school year.

This school has a large dedicated staff that arrives early and leaves after 5 p.m. During the year of the study, the staff were frequently seen in their classrooms during the weekends preparing for the upcoming week or volunteering for one of the many extra-curricular events. Prominent among these were the extra-curricular sports clubs. One teacher held the physical education teaching position for 19 years. That teacher developed after-school intra-mural sports activities such as soccer, basketball, floor hockey and Borden ball (a type of European handball) that were heavily subscribed to, and enjoyed by the students. The school had also developed representative teams and enters local and territorial competitions and tournaments.

Lifestyle sports and activities were also encouraged. A stock of skates and helmets were available to permit students to skate at the adjacent recreation complex. Cross country skis and poles were provided for a ski club that is situated on what was once the national training centre for that sport. The ski club is also within walking distance of the school, permitting classes to ski as part of their physical education program.

<div align="center">Gathering the Data</div>

In my position as Assistant Principal of this school I was familiar with the staff, students and parents and had worked in the community for 18 years. As previously stated, I was also familiar with the problem of a cohort of students with FASD and had been aware of the results of the study by Godel et al. (2000). Some staff members, who were also aware of the Godel et al. (2000) study, and its implications for the student body, expressed interest in my study and hope that positive results could flow from the action research and problem solving.   At the start of the school year in which the data was collected I resumed my duties as assistant principal following a year of educational leave and was seconded for the fall term to the Education Council office. This presented little difficulty in connecting with the administration and staff as my Educational Council duties took me into the school on a regular basis

The FASD prevalence information became available to the school staff, DEA and general public in late 2001. When the results of the study by Godel et al. (2000) were published the problem held community interest, while the solution was viewed as a part of the administrative workload.   One of the responses developed by the principal was the concept of selective grouping classes that placed students who were at-risk as a selected

cohort within a grade. He also introduced extra instructional minutes in the 2002- 2003 school year to permit the staff two afternoons each month to meet and plan.

Arriving back in the community after the decision had been taken, I was able to observe the staff members become involved in their planning and committee work. When I returned to the school I became a member of the school and community committee and was also involved with the two teachers who were teaching the selective grouping classrooms. These teachers worked collaboratively at the outset due to their mentorship relationship. As the challenges of the school year unfolded they began to work collaboratively on changing the curriculum of their classrooms.

My position as Assistant Principal allowed access to the administration, staff, and community members, making data gathering relatively straightforward. As the assistant principal, with responsibility for the school budget, I was frequently asked for financial resources both by committees and teachers and became familiar with the problems being discussed. The ill-structured problem of the students with FASD who were largely in the selective grouping classes was one such problem and the subject of much discussion with the teachers involved and the school principal. Formal interviews were conducted by the researcher with the principal, program support teacher, two classroom teachers, the public health nurse and the past chair of the District Education Authority (DEA). These varied in length but dealt with similar content in an attempt to ascertain if the positions of the respondents differentiated their views and opinions on the topic of integrating the students with FASD

Problems

The data are reported in categories as outlined in the analytical framework shown in Figure 1 (p. 19). The challenges are prevalence, behaviours and achievement, at-risk students, and community / school attitudes. The response categories are effective school response, structural response, school culture response and roles and responsibilities.

The Prevalence of FASD Student Problem

Discussion with staff members and the principal indicated an elevated prevalence of students with FASD in this school. The national rate of prevalence represents an expected population between 0.5 and 1.5 students with FASD in this school (Health Canada, 2001).

At the beginning of his tenure the principal faced the problems presented by an enlarged cohort of students with FASD for the first time. His many years of administration in southern schools had given him little experience in this field:

> Before I came up here I can honestly think back and …identify, with certainty, only maybe four or five kids, maybe even less than that, that I look back and say that I know they were Fetal Alcohol from working with them. (A11002, p.1)

However in his time at the school he had become aware of the evidence presented by Godel et al. (2000). This caused the principal to become more aware of the problem but had not provided himself with a clear picture of the prevalence of students with FASD in his school:

> It's difficult to say with the great deal of certainty as to the extent of the problem. The only study I am aware of actually that has been done and that has been accepted as a clinical study is the one that Dr Godel has. I think that is an unusual group. I don't think our general group is that high. However it is significantly higher than other schools I've worked in other parts of Canada. (A11003, p. 1)

With his awareness of the recent study and his northern experience he came to believe

that "up here, we are probably looking at three or four kids in each class we would suspect

of Fetal Alcohol" (A11004).

The principal was supported in this view by the former District Education

Authority (DEA) member who also referred to Godel et al. (2000) as complementing her

experience over many years in the community:

> There has been a lot of alcohol use over the last 20 years, so I think it is a fairly
> safe assumption that a lot of these children are coming from homes where alcohol
> was used during pregnancy and the problems do relate. I know Dr Godel did one
> study on one group of kids and I think it is pretty reasonable to extrapolate that his
> findings really have not changed. (A16001)

Another official emphasized the difficulty of attempting to identify the extent of

the problem without the formal diagnoses. The isolated community and the right of the

population to confidentiality in health matters made the topic sensitive. She indicated her

view of the prevalence based on this criterion:

> Formal diagnosis is the bench mark. . .I guess. . . the extent of the FASD problem
> is hard to say because I have this thing where a kid should be diagnosed
> appropriately before they are obviously talked about as having FASD. That is
> where I stand on that. I don't know. I would maybe say there are five, maybe
> there are seven kids who have FASD who are diagnosed as having that. (A15001,
> p. 1)

The official was comfortable with this figure and was aware of the possibility of a

higher prevalence based on May and Gossage (2001):

> Based on observable behaviours and with those (thirty-five) others if we knew
> that there was a definite maternal history of alcohol use then, yes, the probability
> would be very strong that they would have FASD. (A15002, p.1)

A caveat was inserted into this assessment due to the frequent confusion between

students with FASD and students with Attention Deficit Hyperactivity Disorder (ADHD).

A high possibility of confusion between the two disorders was seen by this participant:

I think that there is a lot of overlap, as you know, between FASD behaviours and ADHD (and) other kind of generic deficit disorders…With the FASD comes the stigma (of) alcohol use during pregnancy. (A15003, p. 1)

A staff member saw the prevalence of FASD as a major concern in the school:

I see the problem as very large, I think we have a very large number of students with FASD. I also think we have a very large problem with those that do have it - both academically and socially (A12001, p. 1).

An administrator's comments indicated that he believed there are between 50 and 75 students with FASD in the school suggesting the problem of an increased cohort of students with FASD, though largely undefined, existed in the school. The problems faced by the staff were seen to reflect serious challenges from such a cohort. Caution was urged by one participant due to difficulty in attempting to establish prevalence without diagnosis, and given the difficulty in distinguishing between the behaviours of FASD and ADHD

The Behaviours and Achievement Problem

Students with FASD do not achieve as well academically as their same-age peers. They also function at a lower social level than indicated by their I. Q. and achievement tests. This lack of achievement is compounded by a number of behaviours of a general and extreme nature. The compounding of low achievement with behavioural challenges make students with FASD a challenge for teachers.

The principal viewed the cohort of students with FASD as a major challenge to both the administrative and teaching staff:

I find working with them that they are easily distracted, hyperactive and they do make poor decisions. They can very much drive the agenda of the class if you have 25 to 30 students in a class. They certainly can be very draining as far as energy of teachers. (A11005, p. 1)

Staff members, new to the north, who lack experience working with FASD students faced stress due to a lack of preparation for the social behaviours and academic challenges. A staff member described their feelings:

> The new staff do tend to be young. Some, or most, have never taught before and I think that they find the kids much more frustrating than I do because I have a better idea of where they (the students) are coming from. But the social problems they have are very frustrating for the staff, especially if in your teacher training you have not learned very much about FASD and kids with FAE. The things they do just seem so irritating and I think they (the teachers) think it is on purpose - they think it's purposeful. It is certainly annoying (A12002, p. 1).

In her opinion the staff, heavily involved in their academic program, viewed the socially inappropriate behaviours of students with FASD as an impediment to program delivery. Despite the concern of the teaching staff with the academic demands, the academic and behavioural challenges of the students with FASD was apparent to them and they had some understanding of the problem. However the socially inappropriate behaviours of the students with FASD were difficult to accept and to accommodate:

> When your job is to deliver programming, and you have long range plans to cover, and assessments coming up, you are worried about curriculum, these kids seem to be a stumbling block because first of all they do not learn as quickly. I still think it is more of the social things, the constant interruptions. They are very chatty, they are in the way all the time, and you are trying to plug through this curriculum. I think that teachers don't come expecting to have the high numbers of kids with FASD. (A12003, p.1)

Difficulty in connecting rules and consequences, separates a cohort of students with FASD from the mainstream student body and new teachers readily observe this:

> …they (FASD students) have a very hard time with rules and regulations, in particular with consequences. They do something, there is a consequence and they do the same thing the next day because there is no connection for them between what they did and what happened. It seems very unfair to them a lot of the time. (A12004, p.3)

A first-year teacher with a class described to him as a "tough bunch",
observed the difficulties he faced in establishing a relationship with his class:

> …as a new teacher…none of them would have known me before I came, here
> they probably see me as somebody coming in here and leaving their life fairly
> quickly. So there is no stability. In order to gain some sort of routine it takes
> time. I think that they have been taught that the way to react to things is through
> violence and aggression. That is what they have seen and heard. (A14001, p.1)

Faced with problems of indiscipline and lack of student expectations the new teacher
began looking for solutions but found little help from the parents who were frustrated by
the behaviour of their children:

> …the parents are not fighting me. They are just throwing their arms in the air
> and saying "Send the kid home if you are having problems," because they are out
> of ideas and frustrated. I think they have their own issues at home and the last
> thing they want is have to come in and deal with this issue face on. I have not
> much, if any, success with the parents. (A14002, p.3)

Exceptions to this general frustration were the guardians of students who had been placed
in their care. The teacher found that these people were concerned and he had success in
terms of support from the home.

A teacher in his second-year felt that the major problems related less to behaviour
and more to achievement:

> … the biggest problem is their language. The math (sic) or general computation
> is fairly easy for them. But the language, when they struggle with beginning
> sounds or forget the letters of the alphabet, sometimes it feels like you are not
> going any where with them. Obviously if they don't get the language all the other
> subjects are a little bit harder for them (A13001, p.1).

The teacher noted his students struggled with retention of the skills taught. He stated that
"they will have success with something, but the following day they will not remember it".
(A13002, p.1)

The data indicated that the students with FASD demonstrated a broad range of
behaviours that posed a serious challenge to the teachers in the school. These behaviours

included being hyperactive, easily distracted, and having difficulty with rules and consequences. The staff also faced academic achievement below the normal level with particular deficiencies in language and retention.

The At-risk Student Problem

The major influences at-risk students face are the social, family and school. The main social problems are related to personal problems and peer groups while in school, the student's school record and performances were mitigating factors. From the home, the family structure, educational level and socio-economic status were of importance. A concern expressed in the comments of a first-year teacher was with reference to the aggression displayed by his selective grouping students. He commented:

> … the behaviour in the classroom was shocking to me. The poor attention span, and really what I think is at one of the roots of many of the problems, there is a lot of violence with the kids who have a very violent group. It's not just aggressive or mean but it is a very violent, upset group, and I find that very difficult to control in the classroom. (A14006, p.1)

He quickly found that although he had been informed that his class were difficult to motivate he had underestimated the challenge from the students' academic challenges:

> I figured I would be altering the material and stuff but when I got in there I tried that a little bit. I quickly realized that #1 what I was doing wasn't effective because the kids were not interested and the kids were not listening; and #2 the evaluation part of it was really difficult because most of my kids would say "the heck with it just give me zero, I don't care. (A14007, p.2)

As a newcomer to the community, this teacher was ignorant of the home life of the students when he undertook his teaching duties. During the school year he became more attuned to:

> …where they are coming from and why they are acting the way they are acting. The home lives of most of the children are so miserable. Once you really get a good understanding of where they are coming from and what they live through on a daily basis and what they have gone through for an up bringing - the lack of

good parenting, the lack of effective discipline, the lack of love - a whole bunch of different figures come together (A14008, p.1).

As this teacher moved through the school year and began to understand the students, their parents and home backgrounds, he developed an understanding of why they were so violent. By the middle of the school year he expressed the feeling that "progressing through the year you obviously get a much better understanding of your students and a much better understanding of their perspective, where they are coming from, and why they are acting the way they are acting" (A14009, p.1). The new teacher began to view the violence as a product of the students' environment reflecting their life experience. He described his conclusions at this time as maturing to encompass this fact stating, "I think the more I get to know them, the violence is just really linked to where they are coming from, and what they have seen, and what they have been through" (A14010, p.2).

An experienced northern teacher also viewed the social behaviour of the students with FASD as a major reason that these students were unable to operate in the mainstream of the student body:

> I think we have probably have a bigger problem socially than academically because I think we have a high turnover of staff and the teachers are more equipped to deal with the academic concerns of the children than the social ones. They (FASD students) tend to have a great deal of difficulty understanding personal space, and limits, social cues and that gets them into a lot of trouble in the room and outside (A12015, p. 1).

The second-year teacher saw a factor that led to lack of student success. His experience in the previous school year brought him to the following conclusion:

> I think the biggest problem with FAS kids is not only their severe learning disability but their attendance. Looking at the FAS students and their attendance and it's a huge factor. For any normal student to miss an amount of time would be detrimental. Take an FAS student who is here 40 per cent of the time, even if

they are here 100 per cent of the time they are probably forgetting most of the stuff by the next day (A13003, p.6).

Violence was a major factor placing these students at-risk. The violence was normally expressed toward their peers making the group extremely difficult. The data also indicated that low academic achievement was a factor and that the group displayed little interest in success in school. Poor social behaviour was once again reported as a problem. The home background was seen as an at-risk factor with a further concern the poor school attendance

The School / Community Relationship Problem

In the role of the school in the Northwest Territories is embedded the requirement to adequately represent local culture (GNWT, 1996). This may be done in formal classes involving local customs and history or in a more tactile manner using on-the-land experiences. All of the school personnel involved in the study believed that their students had a strong grounding in the traditional life skills of Aboriginal people. In the principal's opinion "they seem to have that type of background and the culture here is something that some of them really do better than some of us do. So it is something that they can be confident in" (A11006, p. 2). The teacher in his second-year class echoed these sentiments. His experience had been that "parents…tell me how much they love our class because we get to do a lot of on land things. …I really think the kids enjoy going and I think that they are able to connect that with the rest of the curriculum" (A13004. p. 5).

The first-year teacher developed his program using a variety of alternative programs most of them within the area of traditional skills:

> …a lot of success for these kids in finding enough alternative activities that are not common in the schools not just sitting down and reading. It is making it

culturally sensitive and making it meaningful and at the same time moving around a lot. I think that will really help them in the long run. (A14011, p. 3)

In discussing his relationship with his class the second-year teacher made reference to attitudes toward male teachers. When he began his tenure as classroom teacher he noted the parents "were very excited to have a male teacher. There are a few (students) in the class that don't have a male role model at home…and I think it has contributed to the success I had with them" (A13005, p.4).

On other occasions he noted that his students were less respectful of female teachers or instructors. This was made evident to him by comments on the marked improvement in behaviour of his students. He believed that there was a gender factor because the "kids who were problems in Grade Two, I got them and I would have to say it was as a male because I have not heard a word from them" (A13006, p.4). He was reinforced in this opinion by the reported behaviour of the students when a female substitute teacher taught them. He noted "if I have a female in the class as a sub they are very disrespectful" (A13007, p.4). Further evidence of this type of behaviour was demonstrated when the students attend special needs classes. In that situation, "the special needs help and the special needs teacher have a lot of problems with them" (A13008, p.4).

In her discussion of the prevalence of FASD the public health nurse, citing her experience with the general public, emphasized the sensitivity of the topic to the community. This sensitivity stemmed from the results of the study by Godel et al., (2000) that community members believed contained data that reflected unfavourably upon them and their children. She asserted that the local population viewed the diagnosis with frustration because there had been no follow up of programs and resources to alleviate the

problem. The public health nurse reflected that the Godel et al. (2000) study, in her

opinion, was seen as an indictment of the people in the region:

> People in the communities do not want…the diagnosis just for the sake of being diagnosed. I think that is where the anger and keeping the study at arms length is coming from because they are saying don't diagnose and deceive them (A15004, p. 4).

The need for diagnosis was accepted by the public health nurse who commented on the

community attitude toward the school and the possible reasoning behind such feelings:

> There is a lot of anger around FAS, there is a lot of anger directed at the school for wanting diagnosis, there is a lot of anger directed at the school for mislabelling for calling something FAS that hasn't been diagnosed (A15005, p. 4).

The data generated by the public health nurse echoed her concern at the willingness of

other professionals to label or mislabel students. This behaviour was seen to cause a

negative feedback from community members toward the school. There was also an

acceptance of the need for diagnosis to permit identification of children with FASD.

From her DEA perspective the former member had a critical view of the hiring

practices of her organization. She viewed the present approach as a process where the

DEA hired teachers with the skills for regular grade classrooms but to succeed in the

school's classrooms special needs training was required. She stated "We hire people who

have an elementary school concentration to teach grade one then throw them into a special

needs classroom. They don't succeed and we act all surprised." In her view the DEA

needed to alter its hiring practices to reflect the reality of the educational challenges in the

school.

The data from the school staff reflected the positive influence of the traditional

lifestyle and its place in an on-the-land component of the school curriculum. Parents were

enthused by the reflection of local culture and the introduction of male teachers to elementary classrooms. On a negative note it was observed that there appeared to be a gender bias in the student body. The public health nurse was able to reflect on the attitude from the community toward the school and provide insights of which the staff might not have been aware. The power of the DEA in staffing was suggested by the former member with regrets about what ought to be the hiring practice.

<div align="center">Responses</div>

The problems delineated by the participants in this study were also accompanied by responses. These were often school and community specific reflecting, as they did, a local approach to solving the problem of students with FASD. The responses are arranged by category reflecting the effective school, school culture, school structure, and roles and responsibilities categories.

The Effective School Response

The achievement level and behaviours of the students with FASD placed them outside the mainstream of the student body. To make a difference in the lives of these students the principal and staff examined collegial methods to enable students with FASD to more readily enjoy their school experience. Implicit in these initiatives was the understanding that a long-term approach was essential

The principal's belief that the students with FASD needed a program designed to meet their educational requirements was the driving force behind the development of the selective grouping policy in grades three through six. In acknowledging the special status of students with FASD the principal asserted that the students with FASD "deserve an education, deserve a program, and the only program is what we have here in this school.

They have the same right as the non-Fetal Alcohol kids to have the best program that they could possibly have" (A11007, p. 4).

With an enrolment of 475 students in the school each grade had approximately 65 students. Prior to the introduction of the selective grouping policy the students were divided into three classes per grade of similar size and abilities. Each class would have an appropriate number of above average, average, below average and special needs students. The classes were further balanced with male and female students, Aboriginal and non-Aboriginal students, and any physically or emotionally challenged students were distributed as evenly as could be applied. The selective grouping policy altered the heterogeneous classroom groupings and generated one smaller class in each grade where the academically and behaviourally challenged students were placed. These classes varied in size from 11 students to 16 students while the two remaining classes in each grade became proportionally larger. The regular classes remained as evenly balanced as before save for the absence of a small group of students who were academically and behaviourally challenged. Each class also retained a proportion of their students who were in need of special needs assistance as well as some students who were behaviourally challenged. However students who were both academically and behaviourally challenged were no longer in these "regular" classrooms.

The principal of the school, when discussing the new policy the school had adopted with a grouping approach, suggested:

> We have created classes that are smaller in numbers and by doing that the other classes of the same grade level are bigger in numbers. We have tried to, in the smaller classes, provide more support in those classes. I don't mean it is not conforming to mainstream because the kids are placed with their age peers. However with smaller numbers it does I think provide for more support for those

kids also allows those students that are not as distracted and there are more settled to do better work. (11001, p. 1)

It was the principal's belief that the selective grouping policy did not contradict the Inclusive Schooling Directive (1996) and that students with FASD were placed with their peers. The students in the selective grouping classes also enjoyed the benefit of increased support. In his discussion of the behaviours exhibited by the students with FASD in his school this principal indicated the need to be prepared to take a long-term approach to solving problems:

> We have to exhibit a great deal of patience with these kids because they can't link action and consequence and if you are not patient it just does not work. It's not their problem they are the way they are. They are not making choices, they can't make choices. (A11008, p. 2)

At the mid-point of the school year in which the research study was conducted the staff adopted restitution as the main thrust of the school discipline policy. The restitution concept emphasized the right of students to make mistakes, correct these mistakes, and to return strengthened to the group (Gossen, 1992). The original discipline policy remained as a guideline to the staff as the new policy and the restitution concept was piloted. The principal had taken a leadership role in introducing restitution to the school. The program had been promoted in the NWT through the Department of Justice in an attempt to inculcate responsible decision-making (Taylor & Bell, 2002). The efforts of the staff are an initiative to alter the curriculum for the students with FASD. There was also a change in the behaviour policy in the school and an acknowledgement that change may be slow in taking root.

The School Culture Response

The former DEA member expressed strong views on the challenges facing teachers in the community. She suggested that the large number of students with educational and behavioral problems in each classroom made for challenges teachers rarely see in southern schools. She felt that the teachers, most of whom hail from southern Canada, should be better prepared to address the student problems and build on student strengths. This will best be done when the DEA decided to:

> …only hire special needs teachers, only hire administrators who have experience dealing with special needs in the schools, only plan programs around classrooms that essentially involve 60-80 per cent special needs students. (A16010, p. 3)

The new teacher discovered at the outset that his students displayed disinterest in the content of the prescribed curriculum and lacked motivation to succeed. The need to adapt the curriculum and generate academic interest from the class was seen early by the first-year teacher. He felt that he was destined to fail with the class unless he:

> … tried a lot of the different techniques, different things with the kids, different activities, alternative activities as opposed to the traditional more academic type of things. It has been really tough to trigger their interest I found (A14004, p.1).

As he sought a relevant curriculum to inspire his students the first-year teacher observed that the problem also related to the physical location of the instruction. He observed "the more I tried to find out what would work the more I realized that they really had a tough time sitting still in class. They had a really tough time focusing on detail and work" (A14012, p.3). It was this observed behaviour that gave structure to the concept of an alternative program and the use of a constructivist curriculum. The learning had to take place in a location where the students were not constrained by the physical boundaries of the classroom and the learning had to be relevant to the students needs. This

transformational thinking found resonance with the first-year teacher's mentor. As a

teacher of another selective grouping class, the second-year teacher was a proponent of an

on-the-land component to the class curriculum. He viewed this as a natural extension of

the northern lifestyle as well as an essential area for student success, the building of self-

esteem, and a conduit to establish student – teacher relationships:

> …the reason I have had success with the FAS kids is that a lot of them are on-the-land kids. I have tied a relationship into the land and I have tried to build a curriculum frame and work around that - whether it is talking about what I do on the land or just becoming accustomed with places that they go - so I can build a relationship with them (A13009, p.2).

The more experienced teacher saw the on-the-land experience as an extension of

each student's life and believed that he could:

> …build a classroom where the main curriculum would be on the land, to build the curriculum around the whole (idea of) taking kids out in the bush. I don't feel that they learn as well from paper and books as they would from actually being out and seeing it and being there to experience it (A13010, p.3).

The two main pillars of the alternate program, the on-the-land and carpentry

initiatives, were developed by these teachers. It was a happy coincidence that the more

experienced teacher was a mentor to the new teacher and that this relationship provided

the spark that caused the alternative curriculum to be formed. "I think that I have got a

good mentor and that we have been in discussion frequently, almost on a daily basis,

about what is going on and what might work and what didn't work, how we can improve"

(A14013, p.5).

These teachers cooperated to provide an experience that the students in their

classes could identify as an important part of their northern lifestyle. This identification

was designed to generate student interest in their academic work:

…some of the alternative methods in teaching that we started looking at were applied in the trapping program which was a hands-on, experiential education type of environment where we were going to be out on the land for about a week. There was some lead up to it … to peak the interest out on the land, and a little bit of follow up with some written work (A14014, p.3).

In the carpentry component the new teacher used his talent in technology to produce a Powerpoint presentation demonstrating what the students would make, the tools they would be using, and how the carpentry shop was to be prepared for each class. Colour pictures, taken with a digital camera for this presentation, were printed and posted in the carpentry shop. This allowed the students to understand what they would be doing, how they would proceed, and demonstrated the level of tidiness expected when their shop class was completed. A major factor in this instruction was the lack of text allowing weaker readers to readily understand the requirements of the class.

There were two separate initiatives that further allowed these teachers to amend the curriculum and make the students more responsive to what was being taught. A cooking module was developed as yet another area where student interest in the subject allowed them to attain academic skills. The cooking program "fell directly in line with our language arts and health programs. We have done some cooking and had some moderate success " (A14015, p.4). Although pleased with the response to cooking, the new teacher expressed concern about student behaviour in this activity compared to the other two programs. He observed that control in the Home Economics room was a concern. Possible reasons for his difficulty may have been the relatively cramped cooking facilities with only two stoves creating long waits for students between cooking activities.

In a less structured manner an opportunity for students to participate in extra physical education activities was developed. The extra physical education was established

in an ad hoc manner and utilised when students were to be rewarded for good behaviour or on those occasions that the classroom teacher determined a student was not receptive to the restrictions of the classroom:

> The other thing we have done is from time to time is looked at adding a few extra gym classes for the kids. Some of it used as a reward, some of it when I think they need more time out of the classroom. I have spoken with the gym teacher and he has been flexible in terms of having an extra student down in the gym class if I give … enough notice. That is something that they love and it lets them burn off a bit of steam too (A14017, p.3).

The PST felt that the adapted curriculum in the smaller classes afforded the students in those classes the opportunity to succeed in school. The carpentry, cooking, and on-the-land experiences are in a tactile field where the students were able to succeed whereas they have experienced failure in academic work. "I think it gives them a chance to do the things they are good at. Finally there is something in school rather then all the academics" (A12009, p.1). In the view of the program support teacher the regular classes are also benefiting, despite increased numbers, "because they (the FASD kids) are no longer disrupting the larger classes and they are able to get on with the curriculum" (A12010, p.2).

In this response the data indicate that the solutions generated by this staff were local and contingent to the school context. Another factor was the collegial relationship between two of the teachers in these classrooms. Both teachers were committed to developing solutions that would bring success to their students and found one such solution in a curriculum that was altered to reflect a more concrete approach. The teachers also amended the content to provide cultural experiences more relevant to the northern students. The identification of tactile and cultural topics allowed the staff to provide a more experiential rather than theoretical curriculum.

The Structural Response

The task facing the principal and staff was one of deciding the optimum school structure for all of the students. To do this they examined the traditional method of grouping students into class groups discussed above. A new formula was examined for classroom grouping and with it a different time commitment from each teacher. In the context of the classroom, physical configuration was examined as well as alternate methods of organization.

As a condition of accepting the challenge of a selective grouping classroom each teacher understood that the commitment was for two years. Such a time frame permitted the development of a solid relationship with the students group and reduced time spent by students in adjusting to a new teacher, with different routines in a new class grouping.

> …one of the things we have done with a great deal of success is teachers follow the classes because the time of adjustment is always very great and these kids don't adjust easily, they don't break routine easily. Routines are very important and it makes it easier to deal with and having a teacher follow them for two years makes the adjustment period at the beginning of the year - (it) almost does away with that. (A11010, p. 4)

The PST emphasized that not only was the structure of the classes amended but also the physical layout of the classrooms. This was altered from the normal rows of desks or groups of tables:

> …the set up of the class rooms…needs to be not distracting at all. So you need very little on the walls, you need arrangements of desks so they are not looking at each other, they do not do well in group work. One of the classes has moved the desks circular, not facing each other, and they do a lot of stuff in a circle on the floor. (A12006, p.3)

The needs of the students were what drove this alteration of the physical environment:

> They are very tactile and they are very visual. They need a visual schedule of what's going to be happening every day. Every day when they come in there should be something on the board that says this time we're going here, this time

we are going there because will ask 15 times a day "Are we having gym today and when is it? (A12007, p. 3)

Other changes included an increase in structure and a commitment from the classroom teachers to make things happen as they are planned. Instruction was delivered without the use of long lectures. Seatwork was adapted to accommodate the abilities and short attention span of the students. Having homework completed and returned was also a problem given the academic challenges, short attention span, and home life. Success with homework was boosted by the use of incentives. This was highly successful in the more experienced teacher's classroom where a small store was established with the student purchasing power based on a "token economy". Students who returned homework were given a token. When a student had accumulated a sufficient number of tokens a small purchase could be made from the class store. In each selective grouping class, rewards were used as a stimulus:

> Constant rewards to get them to do the things other kids do because they have that internal ambition but these kids don't or they don't have the support at home. So you are dealing with all from a school prospective and they are not the kind of kids that are going to win academic awards. So they need to be getting rewarded (A12008, p.4).

After an examination of the homogenous grouping of students the principal and staff elected to alter the distribution of resources. In each grade from three through six a smaller class was instituted containing students who were both academically and behaviourally challenged. To prevent disruption to class routines the teachers allocated to these classes remained with the students for at least two years. Further refinements were instituted in class lay-out to reduce distractions and the introduction of incentives to encourage academic achievement. The new approach was begun with classes in Grade 4

and 5 for the first year to permit the complete cycle of two years per teacher. During the

second year there were three grades involved in the distribution of resources

Roles and Responsibilities

In their efforts to integrate the students with FASD into the mainstream of the

school the principal and his staff were bound by the NWT Inclusive Schooling Directive

(1996). The policy and mission statements of the Divisional Board of Education also

guided them. The criteria emphasised in the philosophy of the Inclusive Schooling

Directive were the acceptance of all students, belief that all students can learn, social ethic

of acceptance of diversity, and creative use of support services for teachers and students.

Under the Directive the principal bore major responsibility for the organization of

the school so that it met the above criteria. In this organization he made changes to the

structure of the school by introducing smaller classes in Grades Three to Six. He further

attached the teachers to these classes for a minimum of two years in an effort to reduce

adjustment time for the students. These measures were designed by the principal to

provide more support for the students in the smaller classes and were another measure

introduced to increase support for students with FASD.   Principals were also responsible

to ensure that students learn with age-appropriate peers (NWT Inclusive Schooling,

1996). It is worthy of note that there are clearly delineated responsibilities to ensure that

this occurs under the Ministerial Directive on Inclusive Schooling (1996) although the

responsibilities were not mentioned directly by any of the staff. The principal made one

oblique reference to the requirements when he indicated, "I don't think it is contrary to

mainstreaming because the kids are placed with their age peers" (A11011, p. 1).

Another requirement of the principal's role is administrative leadership and the building of staff consensus. In his view staff members accepted his initiatives with the smaller classes. He also viewed his attempts to introduce restitution into the school behaviour policy as having unqualified support. In his view he was proactive in providing leadership and attempting to find consensus on his initiatives

The Program Support Teacher provided the central in-school support for inclusive schooling and acted as an advocate for students with exceptional needs. Teachers depended on the PST to provide support in their delivery of instruction. This support was provided for students in the selective grouping classrooms and the PST served as an advocate for students with FASD.

The teachers were responsible for the development of appropriate instructional programs. In the selective grouping classrooms the teachers developed an alternate curriculum for the students in each of their classrooms and met daily to discuss and plan the development of this curriculum. A responsibility of teachers was to inform and involve the parents in the school program. Although both teachers initiated and maintained contact with parents they had mixed success in that area (NWT Inclusive Schooling, 1996).

<div align="center">Theory Adjudication</div>

In Problem Based methodology (PBM) adjudication of theories in action is made using four criteria. These are explanatory accuracy, effectiveness, coherence, and improvability. Using these criteria the theory in action of the administrator and staff of this school was adjudicated.

Explanatory Accuracy

The initial theory in action for this school was to allocate students evenly between three classrooms in each grade generating classes equal in size and abilities. A new theory in action was developed to deal with the ill-structured problem of the integration of students with FASD. In each grade a selective grouping classroom was generated. These contained reduced numbers of students and contained students who were both academically and behaviourally challenged. Two more classes were formed in the grade with larger numbers of students and a wide range of student abilities and behaviours. The purpose of the selective grouping classes was to deliver a program for the students with FASD.

The theory in action did generate smaller classrooms for the selective grouping classrooms but maintained the same curriculum. However the theory in action did alter some constraints. These were teachers committed to the selective grouping classrooms for two years, classrooms altered to become less distracting to the 'selective grouping" students, and instruction that was designed for students with short attention spans.

Effectiveness

As a solution to the ill-structured problem the theory in action had embedded a causal theory that caused overlap between explanatory accuracy and effectiveness. Argyris and Schon (1974, p.24) suggested that effectiveness of the theory of action can be judged according to whether it achieved its governing variable, the appropriateness of the strategies advanced, and the accuracy and adequacy of the assumptions of the theory.

The theory of action was not effective when applied within the constraints that were set. The students in the selective grouping classes did not have a program as

suggested by the principal. The strategy of placing them in a smaller group and separate classroom was scarcely in program delivery. The assumption in the theory appears to centre around un-stated instructional benefits for smaller groups.

The new theory of action was amended by the teachers of the "selective grouping classrooms". The effectiveness of the original theory of selective grouping classrooms did not achieve its governing variables of an improved program for the students in these classrooms. The openness of the theory permitted the teachers to bring improvement by altering the classroom environment and instructional practices. This adjustment of theory continued when the teachers developed activities allowing the students to move while learning. From this simple observed need in the students these teachers developed an alternative program. The theory in action became open ended with many possibilities for revision and error. It was an opportunity for double-loop, learning that changed the values, goals, and key assumptions forming the constraint structure (Robinson, 1993).

Coherence

In adjudication of the theories in action the solution proposed by the principal had little to set it apart from the original theory. The selective grouping students were placed in a smaller group and separate classroom. The solution was a simple one involving the removal of students with academic and behavioural challenges and placing them in their own classroom with additional support. The coherence of the theory, in the minds of the participants, lay in their belief that smaller groups were preferable to larger. The knowledge that smaller groups alone could not solve the ill-structured problem was not part of the original thinking. The teachers of the selective grouping classrooms discovered that this was the case early in the school year. Argyris and Schon (1974) used the term

congruence to describe coherence between espoused theory and theory in use. However they suggested that congruence between an inadequate espoused theory and an inadequate theory in use has little value. That was the situation as the new theory of action was put into place

Improvability

The new theory in action was open to the possibility of error and, consequently, revision. Robinson (1993) believed that theories in action to be superior when their structure promoted the growth of knowledge and allowed problem-solving. The new theory in action, despite its simplicity and lack of fit between solution and constraint structure, did allow easy revision and single-loop learning by the participants. Single-loop learning is an efficient method for participants to revise a theory without being disruptive to the routine and understanding of the problem (Robinson, 1993). The teachers of the selective grouping classes moved beyond single-loop learning when they began to alter the curriculum. Their learning was double-loop and involved changing the governing variables that altered the theory in action. This was disruptive but greatly enhanced the improvability of the theory in action.

Critical Dialogue

In the data outlining the reasoning behind the selective grouping classes all of the participants in the study framed a response that the creation of these classes was designed to benefit the students with FASD. In terms of theory appraisal this theory appeared to a more accurate causal account of the phenomenon than homogenous classroom groupings. However other teachers in the school made comments to me that their classes were much easier to handle without the cohort of students with behavioural and academic challenges.

I was familiar with the behaviour of the students in the selective grouping classrooms and the lack of change in their behaviour caused me to question the explanatory accuracy of the new theory. Discussion with the principal failed to generate any critical examination of that suggestion. The principal treated the solution developed as self-evident and found no merit in opinions to the contrary. He was prepared to exert unilateral control in an attempt to block my attempts to draw him into critical dialogue (Robinson, 1999).

After some reflection I perceived that the principal was employing a unilateral approach while espousing a policy of bilateral control. Using such an approach he was capable of deflecting or ignoring positions which placed his views in question (Argyris, Putnam, and McLain Smith, 1985). The switch from Model Two to Model One in any such situation was, from my perspective, effortless and seamless (Argyris and Schon, 1974).

Following this early attempt with the principal to solve a school problem by placing all relevant information on the table, staff concerns over the committee structure obliged me to attempt to draw him into a similar discussion. I was more successful in engaging the principal in discussion and he did agree to place the matter on the agenda for the next staff meeting where it was discussed and dealt with.

My approach to discussion on the selective grouping classrooms was more cautious. Meetings were arranged after school and were purposely kept brief. In the first meeting I asked for the principal's perception of the reasoning behind the 'selective grouping" classes. Using hypothetical questions I was publicly testing and checking to elicit responses from the principal that were frank and open (Robinson, 1993). This brief meeting went well, with the principal confirming that the idea was his and had been

conceived late in the previous school year. At that time he had been faced with the community response to the study by Godel et al. (2001) and was seeking a strategy for the integration of the students with FASD.

During the following meeting we enlarged the discussion and the principal observed that the concept of male teachers in the elementary school had been a development of the initial success of the second year teacher. Another brief meeting involved discussion on the attention span of the students and his thoughts that derived from that observation. He decided to maintain classroom teachers with the selective grouping classes to permit students to be more comfortable with their teacher. He was frank in suggesting that the alternate curriculum was not his idea. He had viewed the selective grouping classes as offering academic subjects at appropriate skill levels to the students mixed with some general life skills. At the outset he viewed the major planning to have been the responsibility of the PST.

I was involved in discussions as a facilitator of resources and to provide insights into regulations with the teachers of the selective grouping classes. The teachers were generating their own ideas and expressing valid information developed by their earlier student experiences. Robinson (1993) suggested that critical dialogue should allow all relevant information to be brought forward and in this case I was confident that this was happening. The testing and checking by the participants was rigorous during the discussion and involved frequent examination of detail. As the process wound down, I felt confident that both teachers had been open and straightforward and felt that they had also contributed to my understanding of the problem. They believed that the principal was responsible for the initial concept of their classrooms but that the theory in action was not

effective within the constraint structure. Their contribution was to intervene and change

the constraint structure. This was done with the full knowledge of the principal

   With his mentor the first year teacher was able to implement his views and assist his

students to improve socially and academically. The students responded to the carpentry

program curriculum and this could be seen by the teachers and also the parents. Argyris

and Schön (1974) would posit that at this point maximizing of valid information was

underway. The teachers now began to exert free and informed choice and in their

discussions the on-the-land program became an objective. Most of the drive for the on-the-

land program came from the first year teacher as a means of allowing his students to learn

without the constraint of lack of movement. The second year teacher provided strong

support for this thrust and viewed it as a viable method to develop student confidence and

self-esteem.   Fullan (2000) viewed these as essential elements that schools must instill in

their students if they were to become successful adults. The development of the on-the-land

component of the curriculum was also important to the students because it brought them an

experience of learning from their cultural values. While most of them had been on the land

before, the skills and abilities essential to that lifestyle had not been identified as important

in the school setting. This new initiative suggested to the students that their Aboriginal

heritage contained a critical part of the skill set they required to be successful adults

(Burgess & Streissguth, 1992).

CHAPTER FIVE

THE MID-SIZED SCHOOL: CONTEXT AND DATA PRESENTATION

In this chapter a description is provided of the community of Aklavik and its population. This is followed by a description of the school, the staff, administration and the school environment. The final section of the chapter presents the data collected in the school and community.

Located forty miles from Inuvik by river or ice road, depending on the season, Aklavik is the community that would not die. Formerly the administrative centre of the western arctic, Aklavik was replaced by the new town, Inuvik. However the people of the community refused to leave and Aklavik survives. With temperatures, precipitation and a climate similar to Inuvik this is a challenging environment but one that is enjoyed by the local people.

History

The community of Aklavik is populated by equal numbers of Inuvialuit and Gwich'in and straddles the border of the lands taken by both claimant groups in their respective settlements. This reflects the community's origins as an excellent trapping and hunting area and a key transportation centre. A hundred years ago, accessibility by land and water made Aklavik a place where the Mackenzie Delta hunters and the Herschel Island whalers would meet to trade and in 1912 the Hudson Bay Company established a post. By 1920 Aklavik was established as the major community in the Delta. The community was the centre of the hunt for Albert Johnson in the winter of 1931 – 1932 witnessing the first use of airplanes and radio in a manhunt (Legislature of the NWT, 2002).

The establishment of Canadian Radio Station Aklavik in 1949 marked another development in the community. Unfortunately at that time erosion of the banks on the Peel Channel led to severe flooding. The flooding prompted the federal government to make plans to move the community to Inuvik in 1954. From a high of 1600 in 1952 (Legislature of the NWT, 2002) the population dropped as residents left for Inuvik, although the community remained viable and a new school, health clinic, and handicraft workshops were constructed (Beaufort-Delta Communities, 2003).

Population

As previously stated the permanent population of this hamlet is divided equally between Inuvialuit and Gwich'in. The disputed 2000 census placed the population at 748. The non-natives in Aklavik are teachers, nurses, RCMP officers or employees of Northmart, the present day version of the Hudson Bay Company.

Leadership

The hamlet has a mayor and five councillors elected to a three-year term. Other leadership is provided through the chief and the Dene Council as well as the Inuvialuit Regional Council. Such a diversity of leaders can make for a fractured process and on certain issues there are at least three leaders speaking for the community. The local District Education Authority oversees the administration of the school. The chairperson sits on the Beaufort-Delta Education Council while the past chair is the chairperson of that Council.

Economy

In the present-day community hunting, fishing, and trapping still play an important role. In a secondary role are the local retail businesses, transportation, arts and crafts, and

mineral and petroleum exploration. Another secondary industry is tourism based on touring the Mackenzie Delta and accessing the Richardson Mountains.

Local businesses include a bed and breakfast, service stations, taxi companies, trucking companies, oil and gas services, and general retail. The Aboriginal claimant groups in this community are also involved as employers although to a lesser extent than in the Inuvik area. As stated at the outset, Aklavik is surviving. This is true but it is also fair to say that this community is not thriving. The loss of population has caused many buildings to be boarded or abandoned.

The social problems in this community are similar to many other communities in the north. Unemployment rates are high with many families subsisting on a combination of welfare, fishing and hunting for food, and trapping to provide some cash income. Alcohol abuse is a health problem despite the lack of a sales outlet in the community. During the year of the study the community lost population to Inuvik. Unfortunately it is frequently the most skilled and energetic families who leave, attracted to the better employment prospects in the regional centre.

<div align="center">Moose Kerr School</div>

The mid-sized school in this study is a rectangular single-storied building original constructed in 1969. The school was designed to accommodate students from kindergarten to Grade nine; students wishing to attend high school travelled to the regional centre and boarded at one of the two hostels. This was common practice in the NWT until 1989 when smaller communities were afforded the opportunity for grade extension (GNWT, 1999). Grade extensions were undertaken in Moose Kerr over three years from 1994 – 1997 and the school then became a kindergarten to Grade twelve

facility. The enlarged student population created by the grade extensions required an addition to the school building. Construction of three classrooms and a science laboratory on the north side of the building was begun in 1998 and completed in 1999. A school/community library was also constructed on the west side of the building bringing the total area of the school to 35, 000 square metres. Another feature of the school addition was the purchase and installation of an IBM computer laboratory and the establishment of a Local Area Network that has greatly enhanced the level and quality of school programming. The entire project cost 3.5 million dollars and was completed in September 1999 (Beaufort-Delta Education Council, 2002).

Construction on the north and west sides of the school has completely surrounded the gymnasium, which sits in the middle of the facility. The main entrance to the school is on the east side where the school is separated from the Peel River by the local airstrip. The entrance way leads up a flight of six stairs to the main foyer. To the north is the staff room and to the south the administrative offices. By walking west across the foyer a visitor will gain access to the school gym.

The foyer is decorated with students' work, pictures of community elders, and a number of posters and sketches depicting the traditional life of community members and outlining what the local Aboriginal people consider important to student learning. The principal undertook this development as one of her original initiatives in the school. Her first task was to identify the Aboriginal concept of education, framed in both Dene Kede (GNWT, 1993) and Inuqatigiit (GNWT2, 1996). This was developed and extended to provide a framework of the Aboriginal understanding of life and education in the NWT to

be utilized by teachers. Finally local elders collaborated with the principal and staff members to identify what was important to the people of the community.

By turning south into the hallway located approximately half way across the foyer the visitor will pass the administrative offices and enter the primary wing. The students' work continues to be displayed of the walls of the hallway and the visitor cannot but be impressed by the cleanliness of the building. It is difficult to ascertain what is original construction and what is the new addition demonstrating a community pride in the school. The classrooms accommodate an ascending order of grades along the wing continuing after a right turn. At this juncture the visitor is facing west and walking in the direction of the new school/community library. This room encompasses most of the west side of the building and includes a story pit. Storytelling is an integral part of the Gwich'in and Inuvialuit cultures. After turning north and proceeding through the school/community library and turning east at the corner the visitor will pass the Aboriginal Language classrooms. Since the community is home to the Gwich'in and Inuvialuit both languages and cultures are taught in the school. Turning south brings the Home Economics room into view followed by the staff room. At this juncture the visitor has returned to the foyer. If however a short cut is required to the west side of the building a hallway located just opposite and to the north of the Home Economics room provides access from east to west between the gym and the new computer laboratory and the program support classroom. The building remains a major source of pride in the community and is viewed as a community-owned resource having a local Aboriginal principal and a strong cohort of local people as teachers and aides.

Staff

During the year of the study there was a complement of 15 teachers in this school of which five were Aboriginal who were raised in the community. The classrooms were divided into three primary, two elementary, three junior high school, and three secondary. The principal, although included in the previous total, does not have any teaching duties. Other staff members are two Aboriginal language teachers, a classroom assistant, a program support assistant, a program support teacher, a school community counsellor, and a secretary.

Both the kindergarten and Grade one classes are single grades. A large cohort of Grade two students further allows a single grade classroom. The elementary classrooms from Grades three to six are comprised of two grades. In junior high school an emphasis on preparation for high school determines that the classes are single grades. The relatively small number of high school students (30) allows individual teaching usually in small single grade units. In this school, as in all other northern schools, ability levels in each grade vary enormously resulting in every classroom being effectively multi-graded. The high school and Aboriginal language teachers there are specialist teachers on staff. The three high school teachers teach the academic core subject according to their discipline with one teaching language arts and social studies, another teaching mathematics and physics and the third teaching chemistry and biology. Each classroom teacher teaches the core subjects, art, music, and health. Physical education is a core subject in the NWT. The language arts and mathematics are taught according to ability level. The subjects for Grade two to Grade nine are scheduled in the same time block to

facilitate this initiative. The students move to their ability group and return upon completion of the class.

Teacher turnover of 30 per cent is in the normal range for the region. This suggests a loss of approximately three teachers each spring with an intake of the same number each fall to replace them. Actual turnover is rarely as regular with most teachers staying for two or more years. Consequently there are years with very little turnover and other years when the five Aboriginal teachers face introducing themselves to a cohort of new northerners.

Administration

The school principal was in her third year of tenure. As an Aboriginal woman, born and raised in the community, she had a wealth of knowledge of the students, parents, and other community members. Her duties included reporting to the District Education Authority (DEA), managing the school budget, enforcing the school discipline policy, affecting a bridge between the community-user groups in the school and the staff, and integrating the teachers from other parts of Canada into the school and community. A teacher from outside the NWT held the position of assistant principal during the year of the study. He expected to stay in the community for at least another year and upon completion of that service anticipated teaching in another northern community.

The program support teacher was in her second year of northern service having completed a career in southern Canada. One of her major roles was assigning and supervising the duties of the classroom assistant and the program support assistant. The Individual Education Programs and Modified programs were also her responsibility. Full-time teaching duties accounted for the other requirements of the position.

School Environment and Processes

The staff at this school was a healthy blend of youth and experience. There were a number of teachers with less than five years teaching experience. The lack of experience of these teachers was balanced by a cohort of superannuates. Other factors in the blend were the five local Aboriginal teachers who provided a modicum of stability in times of increased teacher turnover and an understanding of each student's background and aspirations. The level of teacher turnover continued to plague this, and other, northern communities. The Education Council was aware of the problem and had endeavoured through publications (MacKay, 2003) and orientation to ensure that teachers were aware of the demands of the schools and the living conditions in the communities.

The school was felt to be community owned due to the high number of local people involved in its function. The strong Aboriginal cohort in this staff provided for continuity of instruction and administration as well as a confident community outreach. This was viewed as a school strength. The staff offered a co-curricular sports program, cooperated with Sir Alexander Mackenzie School in their Author Visit program, and was involved in a number of community initiatives that gave the students on-the-land experience. On the negative side was the frequent turnover of non-local staff members which caused some dislocation of instruction and the need for constant induction of new staff members into local culture. Understanding these factors, I attempted to gather a sense of how the staff worked to solve the problems of the students with FASD and what role the context of their school environment played.

Gathering the Data

Prior to conducting the interviews I drove on the ice road to visit the school twice during the winter while engaged on other business for the Education Council. I was familiar with the community and school knowing the local people who were on staff as well as a few of the non-local teachers. The school had absorbed the results of the Godel et al. (2000) study and were concerned about the prevalence of students with FASD in their school. The principal was aware that the prevalence of students with FASD was probably higher than the national norm and with her staff had introduced some measures designed to address the problem. I had become aware of these initiatives on my previous visits to the school in the year of the study. The principal also described them during her interview in late February

The initial set of interviews was conducted in March and was concluded in a visit during the Easter week, approximately one month later. The staff members interviewed were the principal, the program support teacher, the program support assistant, and a classroom teacher. A further interview was conducted with a nurse who was working in the community.

The school enrolment was approximately 175 students in the grades from kindergarten to grade twelve. The uneven distribution of the students in these grades obliged the school administration to create a number of split grade classrooms. Another consequence was that the opportunity for selective grouping of students, in a similar fashion to the large school, did not exist.

Problems

The data are reported in categories as outlined in the analytical framework shown in Figure 1. The problem categories are the prevalence of FASD students, behaviours and achievement, at-risk students, and school / community relationships. The response categories are effective school response, structural response, school culture response and roles and responsibilities.

The Prevalence of FASD Students Problem

The principal identified a cohort of three students when questioned on the prevalence of students with FASD in her school describing them in the following manner:

> … we have a definite population of three. Of the three we know that are FAS, … one is very extreme and the other two are at the state where you can work with them. But of course all the things are combined with an FAS child, those factors are there, but that is not to say that all of our students we suspect may have FAS (are) tested. So there could be more of our student population that we are not aware of because in a small school (we lack) adequate resources to get them tested (B21001, p1).

The Program Support Teacher (PST) viewed the prevalence of FASD students as more pronounced stating that "there are lots; the severe ones, maybe five". These students, who are more profoundly afflicted with FASD, are instructed using an Individual Education Plan (IEP). These IEPs are generated by a team effort involving the PST, the principal, the classroom teacher, the parents, and aides who deliver any part of the instruction:

> We have actually gotten six IEPs with the severely mentally and physically handicapped … there are a lot and … working with the special needs kids you do not have the problems when you are working with them at the (ability) level that they are working at. …We have got grade nines that are working at a grade three or four level (B23001,p.2).

In his professional practice, the community health nurse had worked with a number of children who had been affected by alcohol in utero. In the community "we have a number of children that are affected by mothers who have drank throughout, in some cases, their pregnancy. Sometimes they stop after their second or third trimester and we do see those children later on in the Health Center" (B22002, p.1). He observed that many of the students had difficulty with behaviour and were inattentive but was unwilling to place a diagnosis of FASD on any child that he saw. In his opinion there were mitigating circumstances to make this a difficult decision for any health professional:

> It is difficult from a Caucasian cultural background to understand if it has something to do with parenting because I think that there is an overlay between parenting skills of First Nations people and parenting skills… of Caucasian culture… I think that sometimes our paradigms of assessing children and how they are developing are coloured by our misunderstanding of how their parenting skills. . . are expressed in their children (B22003, p. 1).

The community health nurse expanded on his belief that there was some prevalence of alcohol in utero in the community. During prenatal classes attempts had been made to educate pregnant women in the community about the dangers of alcohol consumption during pregnancy but he was sceptical of their success:

> We have had a lot of women in the prenatal who have…come from histories and backgrounds with a lot of alcohol consumption. In the prenatal classes and prenatal assessments that we do, of course, we do, have literature on our walls at the Health Centre. We have lots of literature advocating against drinking alcohol especially during the first trimester of your pregnancy. To be honest I am not sure what the success for that is (B22001, p. 1).

The staff of this school held different opinions on the prevalence of students with FASD. The principal indicated a prevalence of three students in the student body. The PST felt the number was higher at five and the health nurse did not quantify his suspicions. The non-diagnosed students with FASD in this population would likely bring

the cohort to a figure between 15 and 25 students. The prevalence would then lie between

9 per cent and 14 per cent (May & Gossage, 2001).

The Behaviours and Achievement Problem

The Program Support Assistant (PSA) had a major responsibility in the instruction

of three students with FASD. She had worked with these students for seven years and

maintained a close relationship with them and their parents. In emphasizing that she was

responsible for one girl and two boys the PSA stated that she "pretty well keeps them out

for the full day. I have them to myself and I do all the work. I pretty well take out my own

work there in that area" (B26001, p.1). Routines were been established for this

instructional time and the three students respond to the PSAs structure:

> They are used to me because I was with them all the way through and … at the
> beginning of that time … I wanted to quit a few times because I couldn't handle it
> (due to) the way they were jumping all over and you were constantly chasing after
> them. But now it is (to the stage) where they come in and they know what to do.
> They are to sit down with a book. (B26002, p. 1)

When an event or circumstance altered the group routine, the students were

capable of adjusting provided the PSA was with them:

> It does not bother them if I am there with them and explain to them. Now that
> you have to go in and explain to them that they have to go in and sit down. They
> will do it because they know me. They understand me and we listen to each other
> and we pretty well get along. (B26003, p. 2)

The classroom teacher reflecting on her experience with students, observed that

she had a number of students who "are so disruptive in the classroom due to anything

happening at home or just not able to focus" (B24001, p. 3). She commented that "there

are some days that you feel like you're not getting anywhere with certain students and

their problem. There are other days when they have turned a new leaf and are heading in

another direction" (B24002, p. 3).

The Program Support Assistant believed that the cohort of students with FASD in her care were controllable. Over time she had established routines and the students had responded. This was in contrast to the student behaviour discussed by the classroom teacher who had been stretched to capacity in coping with their behaviours.

The At-risk Student Problem

The isolation and lack of professional support in this community have shaped the thinking of the school staff. In terms of working with those children and others who experienced delayed development, the community health nurse expressed concern at the lack of resources available in the community. Although services may be provided outside the community by visiting paediatricians these professionals provide service to all of the children in the region making it difficult for a child to be seen unless reference is for a particularly serious type of disorder. The community health nurse summed up his feelings on the services provided by saying:

> We have a pediatrician that comes up to (the regional centre) …and the doctor, of course, is booked for the next ten years… I would have to say outside of the nurse…here at the childhood development centre there are no supports. (B22005, p. 4)

The principal was aware that students with FASD were limited in the scope of their abilities and adjustments were made to compensate for this. The program developed for one student with FASD reflected such a reality:

> About nine years ago we had a young lady who was FAS. She came up to grade nine but (was) literally sitting in a grade nine class but not really doing much. So what the teachers did was … program for her … all life skills related and her whole year was more productive for her. What they did for her was create a little canteen type of program where she ran it, restocked it and … that was a really good learning experience for her. (B21002, p. 5)

That approach reflected the understanding of the school staff that they have a role to play in shaping all students, and particularly those with FASD, for adult life in the community.

> These kids are not always going through the whole educational system that a normal student would. So where is our support to create a different curriculum for them when they get to grade 7 and beyond? … We know that they are not going to achieve the same way, so I think what we need to start looking at is more life skills type of courses, more independent type of real experiences. (B21003, p. 5)

The principal summed up her view of what is a relevant curriculum for students with FASD by indicating:

> There is a reality somewhere that is a bridge between still getting an education and some kind of training … making them become independent as well. So by the time a FAS child is 17/18 they might not be in a regular high school program but they should be able to manage in the real world themselves. (B21004, p. 5)

> The negative effect of the poor home life endured by many students was

emphasised by the classroom teacher:

> I see a lot of neglect. The families do not have a lot of priorities in order. A lot of gambling, alcohol use, drug abuse and that affects the child obviously. I do see a lot of - from my experiences with the discussion with my students they talk about programs they watch on TV and obviously (there) is no guidance. They are watching rated R Movies and that tells me there no guidance. (B24003, p. 2)

Another of the school's thrusts had been in the area of prevention. This has been developed with the students in high school to make them aware of the risks involved in drinking during pregnancy. The principal felt that the school staff and community health professional had worked together to promote:

> …awareness programs to our kids because it is not just the young adults within the community, it's even that the population is going to leave the school in five years. They shouldn't be naive to the problem. (B21005, p. 3)

There were a variety of factors identifies in this category. The health nurse viewed the

lack of resources to deal with students with FASD as a problem in this community. The

principal was aware that students with FASD require alternate programming if they are to

succeed and suggested approaches. She also identified the school's use of prevention to

reduce the prevalence of children with FASD. The classroom teacher considered the poor

home life of many of the students, especially those with FASD, as a factor.

The School / Community Relationship Problem

The relationship between the school and the community was extremely important

to the principal. She encouraged an open dialogue with the parents and felt that they

accepted the school's role in the community:

> I think mainly one on one with the parents (there is dialogue) because that is who
> you end up dealing with anyway. But it is nice to hear the parents giving you
> feedback and saying "This is what works at home with my child". We never had
> that before. There is open communication happening (B21006, p. 2).

She felt that the parents in the community were relatively open to discussion of the

problem and were prepared to work with the school. Her comments were qualified by the

age of the students and the relationship the parents enjoyed with their child:

> Very, very few parents are reluctant and if they are reluctant it is because they are
> dealing with a junior high student and they are probably just totally frustrated
> themselves and just thinking, "Well my kids not that interested in school but I am
> not going to go this whole extra mile to go through (the) assessment thing". But I
> think overall in the K-8 group there has been a pretty good partnership with the
> parents (B21007, p. 2).

In her view, success in parental willingness to work with the school was

something that was relatively recent.   The principal felt that the development has

permitted the school staff and other professionals to identify students with FASD and to

begin to work with parents to provide programs:

I think if you posed that question to me, say five or ten years ago, it would be a big issue of denial, of saying that it doesn't exist. But I think that the public awareness of the health field and social services is also out there and I think now that people are coming back to the school and being a real partner. What they are saying is, "You know that there really is something wrong with my child. I don't have the means and I don't know how to go about it but can we work together to get an assessment done?" (B21008, p. 2).

The classroom teacher believed that there had been an erosion of family values in

recent years and the effects impinged on the school program and culture:

The way I see it now with most families there is no structure within the family. There is a lot of breakdowns in every aspect you can think of. My experience as a teacher here there are a lot of problems in the school, not to do with what is happening there; it's what is happening at home. There (are) a lot of problems in the home (B24004, p. 1).

In elaborating upon her concerns, the classroom teacher emphasised that many

parental responsibilities are no longer discharged in the home but are becoming the

responsibility of the school:

We are told to do so many programs, like the dental program like showing the children how to brush their teeth. We are told to teach the children how to tie their shoes. We are told make sure that the children attend school. I feel that that is the Mum and Dad's responsibility. The family responsibility is not there. They rely on other organizations to make sure that their child comes to school, make sure their child brushes their teeth, to me that should come from home. To me those are parental responsibilities (B24005, p. 2).

The PST summed up the relationship with the community with reference to the

students with FASD in the following manner:

…there is no use pretending everything is wonderful all the time because it isn't. We've got our challenges. Maybe that is one thing we have to try not to do is pretend everything is wonderful. It is challenging but it is pretty satisfying too and now with the FAS kids… I do notice it almost as a community thing (23002, p. 9).

The principal viewed the community / school relationship as well established and

valuable. She emphasized the open lines of communication and the dialogue that occurred

concerning students with FASD. These opinions were tempered by the comments of the

PST and the classroom teacher who suggested that there were some strains in the relationship.

Responses

The participants in this study outline problems and accompanied them by responses. The response were specific to the context of the school and community and indicated a local attempt to find a solution to the problems facing students with FASD . They are arranged by category reflecting the effective school, school structure, school culture, and roles and responsibilities responses.

The Effective School Response

The turnover of staff in this school was a significant factor in reducing the awareness of the problem. The principal described the reaction of these teachers as:

> …realizing for the first time that they have really had to deal with a FASD student or even the whole spectrum of behavioral stuff. It is very overwhelming for them and it is not the (regular) staff that is accustomed to working with our students. It is the new staff and their frustration levels go really high and of course that triggers the FAS child because they feed off that energy. (B21009, p. 4).

The principal was proactive in attempting to change the negative feelings of frustration by attacking the problem in two ways. The first approach was the designation of the Program Support Assistant (PSA) to induct the new staff members. The PSA had spent seven years in the school with a major responsibility the instruction and support of students with FASD. At the beginning of each school year she informed the new staff members about the students with FASD, their strengths and weaknesses, and the program being followed in the school and community. The PSA described her induction methods in the following manner:

> I go straight to them and introduce myself and let them know what they are expecting out of the students when they come back into school.   Mainly they (the

students) are FAS and they are very hyper. They move about steady and they don't really keep still. If the new teacher is coming to work with my students, then I go …on the first day that they come into the school and let them know what to expect out of my students and I always let them know that if they have any trouble I am here (B26004, p. 1).

The second part of the approach emanated directly from the principal who holds

clear expectations of her staff and their approach to teaching students with FASD:

> …my message will be very clear…you are here to teach all students. That is the reason you were hired. Come in and take the red rose glasses off. Come in here very open-minded and very willing to be a part of problem solving, looking for other solutions. Not … afraid to take risks because that is how we learn from each other, rather than staying in set ways and saying this is the only way it is going to work. We need to kind of think out-side the box sometimes (B21010, p. 4)

In this category the high turnover of teachers generated a response to induct new

teachers into the school and the problems faced by students with FASD. The PSA who

worked with a cohort of FASD students, alerted all new teachers to their presence in the

school. The Principal in her role was specific in her expectations of all staff to educate all

of the students.

The School Culture Response

The school has an enrolment that is almost entirely Aboriginal. This is reflected in

the main foyer of the school and on many of the walls in the hallways where photographs

and posters reflect the history, culture, and beliefs of the community. The displays make

it evident that the school is centered in a northern Aboriginal community.

The use of on-the-land experiences as part of the curriculum is a central part of the

the culture of this school. The students of all ages have classes conducted on-the-land to

observe seasonal differences:

> We do have a program in the fall that's geared to on-the-land. This is a day program and the students go out. I'll give an example with the Muskrat program. We spend the whole day out there. We get out there by 9 in the morning, we observe mainly by watching the trappers check the traps (and we) observe an

elder skinning the muskrat and cutting them up for a meal, We also check rabbit snares and do a lot of other fun things out on the land (24008, p 1).

She observed that the on-the-land experience was a positive influence on student behaviour. "I find with the students that are obstructive in class I find them more relaxed out on the land. I don't have much trouble with them out on the land compared to being in the classroom" (B24009, p.2).

The school culture reflects the Aboriginal culture of the community both in the school on the walls and hallways and by use of the outdoors. The use of on-the-land experiences is seen as invaluable in cementing the relationship of the students with this culture. The classroom teacher commented on the improved behaviour of students when on-the-land.

The Structural Response

The principal was in her third year of tenure during the year of the study and upon assuming the position had immediately identified the need to provide instruction at each student's ability level. This was accomplished with staff co-operation and:

> We looked at one area, our language arts, and I (thought) that we need. . .group some of our kids with ability level versus a grade level,. So all the teachers K-3 and 6-9 agreed that they would have blocked schedules with their language arts so that we could at least try to work with these kids as best as we can (B21011, p. 1).

The initiative was received successfully and "those students that needed extra help would then be removed from that class and work with the Special Needs Assistant so that their needs are met on a more individual basis"(B21012, p. 1). During the year of the study the initiative was "expanded from language arts to math and the feedback so far is that everybody likes the system" (B21013, p. 1).

The classroom teacher had worked with the system and commented on her experience:

> This is the third year we are doing language and math grouping. Last year I had one FASD student in my class. She was (working at)…Grade 3 and I was teaching Grade 3. She was (placed) in Grade 5 and it seems to work very well with her. She was at a level that she felt comfortable…. We have some students that are very weak in reading and they are (placed) in Grade 3 but we put them in Kindergarten (for language and math). (B24006, p. 1)

Although the community health nurse saw few supports for health professionals and the children they served in the community he did see one recent initiative as being of value. The appointment of a Program Support Teacher provided a fellow professional capable of coordinating services between the school and Community Health Centre. In one case:

> …she came over here and we had a discussion on (a child's) mental history (and) her history of the child. To me, that went really well. It gave us the opportunity to really provide a united front in terms of what we were discussing with the parent…and that is very positive (B22006, p. 4).

The relative lack of work opportunity in a small traditional community made it difficult to arrange work experience for every student who could benefit. To alleviate this problem the Program Support Assistant (PSA) took the younger students with FASD and gave them the opportunity to gain work experience inside the school. One of the major areas for this work experience was the school's lunch program. All students had the opportunity to stay in school during the dark winter months and bring a lunch to be eaten in the classroom, supplemented by fresh vegetables and fruit. She commented "another thing we have managed to set up (is) the lunch program. So Florence takes the special needs kids now and they go in there in the morning and cut everything up and deliver it them" (B23003, p.3).

The use of work experience as a tool to improve self-worth was not used in isolation. Students with FASD had also been paired with other students where they are in "Buddy systems in the classroom … whereby they buddy up with someone for a week, even out on the playground" (B23004, p. 4). The classroom teacher had used this approach as a means to improve the social behaviour of some of her students:

> I'll buddy them off with another student who is very focused and responsible. They pretty well help the child through it. We try and do a lot of role modelling for all the classrooms, being specific with a lot of the classroom rules. Not just being respectful but by being more specific. Like how can we be respectful? (B24007, p. 2).

The principal had structured the school to allow the teaching of both language arts and mathematics in ability level groupings. The hiring of a Program Support Teacher was viewed by the health nurse as a positive step in providing support and a valuable human resource in the community. Lifestyle skills are taught to the students with FASD as they are involved in the lunch program.

Roles and Responsibilities

In their efforts to integrate the students with FASD into the mainstream of the school the principal and her staff were bound by the NWT Inclusive Schooling Directive (1996). The policy and mission statements of the Education Council also guided them. The criteria emphasised in the philosophy of the Inclusive Schooling Directive were the acceptance of all students, a belief that all students can learn, a social ethic of acceptance of diversity, and creative use of support services for teachers and students.

The principal had restructured the language arts and mathematics classes in an effort to permit students to learn at their own ability level. She was charged under the Inclusive Schooling directive to ensure that students learn with age-appropriate peers

(NWT Inclusive Schooling, 1996). However in this situation she believed that grouping the students by ability was a more effective approach.

A major duty of the Program Support Teacher was to provide the central in-school support for inclusive schooling and act as an advocate for students with exceptional needs. Teachers depended on the PST to provide support in their delivery of instruction. She was also responsible for the supervision of the PSA who had a major responsibility for the cohort of students with FASD.

The teachers were responsible for the development of appropriate instructional programs. The teacher in this school was supportive of the Principal's initiative in restructuring language arts and mathematics classes. She was also a proponent of on-the-land experiences for her students.

The Principal was active in providing structural assistance to students with FASD. She also directed her staff to do the same. The PST and PSA worked with the cohort of students with FASD to provide life skills experiences. The classroom teacher was supportive of all school initiatives but had reservations about the quality of care provided many of her students.

The lack of parental involvement in the study was a major concern. The school was viewed as community owned and the community was aware of the problem of students with FASD yet there were no parents involved in the research.

In this chapter a description was provided of the mid-sized community and school in the study. This was followed by an outline of the make-up of the school staff and the school environment. The data was then presented using the outline from Figure 1 (p.19). The categories were prevalence, behaviours and achievement, at-risk students, and

community / school attitudes. When dealing with the response categories data were reported concerning effective school response, structural response, school culture response and roles and responsibilities.

<div align="center">Theory Adjudication</div>

The adjudication of theories in this school was based on the four criteria of explanatory accuracy, effectiveness, coherence and improvability. The theory in action was developed by the principal and her staff over a period prior to the year of the study with continued implementation occurring in that time frame.

The theory in action for this school utilized small groups for instruction of the diagnosed students with FASD. Programming was the responsibility of the PST and instruction of the students was undertaken be a PSA. Part of the program offered to the diagnosed students with FASD involved training in life skills.

The non-diagnosed students with FASD were in the general population. To accommodate this problem the theory in action levelled the instruction in the elementary and mid-school. The on-the-land program was also part of the school program and was offered to students in these grades.

Explanatory Accuracy

The belief that small group instruction was required for students with FASD was a factor in the design of this theory in action. Accompanying this belief was an understanding that students in the small groups must be taught with a program that is aligned to their academic and social abilities. In a similar vein the theory in action attempted to provide instruction for non-diagnosed students in the appropriate range by levelling instruction. The use of life skills and on-the-land was another example of the

theory in action attempting to provide a solution to both groups of students in the ill-structured problem. In this case both groups of students were receiving instruction in life skills.

Effectiveness

The embedded causal theory that to be successful instruction must be at an appropriate level caused overlap between explanatory accuracy and effectiveness. The theory in action achieved its governing variable by providing instruction to the students with FASD at an appropriate level. This was the intended consequence and it was met without violating any important constraints. Robinson (1993) cautioned that effectiveness is broader than a simple goal of attainment and must be judged with an eye to the acceptable cost of the theory in action. The narrow scope of the theory in action suggested that more could have been attempted to bring the students with FASD into the mainstream of the school. This was certainly available in the area of life skills where local stores, businesses, and government offices were available as training sites. The smaller size of the community could have permitted a customized life skills program for diagnosed students with FASD.

Coherence

In adjudicating this criterion the theory in action was judged using knowledge from outside the framework of the theory. The theory in action was seen to square with theories of a number of other problems. In these theories students were organized into smaller groups, provided with an enhanced curriculum and became engaged in learning by their relationship with their teacher. Robinson (1993) posited that theories in action are more readily acceptable as a solution when they solve problems in ways that are

consistent with other solutions in our whole problem set. This was the case for the administrator and staff with this ill-structured problem.

Improvability

This criterion provides both the opportunity for growth of knowledge and the revision of errors. The theory in action had a simple constraint structure calling for improved instruction through the use of small groups, the delivery of curriculum appropriate to the academic level of the students, and students engaged in learning. The theory was also open and could have been readily revised and improved.

Critical Dialogue

Initial discussion revolved around the legality of the small separate group utilized for the instruction of the diagnosed students with FASD and whether or not this was in contradiction of the Inclusive Schooling Directive (1996). The question was first framed as to the reason the Principal had selected the strategy of reduced size of the instructional unit. Her response was that the cohort of students diagnosed with FASD was extremely distractible, over stimulated, and unable to function in a regular classroom. Their behaviours were also a distraction to the other students in the classroom. After consultation with parents, teachers, and, in the case of one student, the local Health Centre, this cohort of students was placed in a small instructional group. The PST had been involved in the consultative process and was given responsibility for the program of instruction. This was delivered by the PSA.

In my discussion with the Principal she had emphasized that the prime consideration in her thinking was the best interests of the students with FASD which was weighed as the ability of the student to respond to the instructional situation. My

questions then centred on the congruence between this espoused theory and the theory-in-use (Argyris and Schon, 1974, p. 194).

The principal was consistent in her espoused theory and it demonstrated congruence with the theory–in-use. Discussion with the PST and PSA indicated that early delivery of the program was not without challenges. They had worked to fine tune scheduling and had allocated time to discuss student progress. This had greatly improved the program delivery. When I suggested that they might look to expansion of the life skills program and perhaps include some on-the-land experiences for the students diagnosed with FASD the PSA was receptive to the concept but expressed reservations about my assessment of the resources available in the community. When I furnished a list of businesses in the community she was surprised at the extent of the list. I indicated the businesses I had contacted with a positive response. The PST and PSA accepted that more could be done to provide life skills outside the school for the students diagnosed with FASD. The PST pointed out that the students diagnosed with FASD were taken on field trips where the on-the-land experience was made available to them. This was largely accomplished early and late in the school year when inclement weather was not a factor as the students became distressed if the activity was postponed.

On the topic of leveled instruction the principal indicated that the topic had been generated in staff discussions on the need to implement policies on student assessment. From this early interest walking Language Arts and Mathematics classes had been instituted and had met with student and staff approval. The classroom teacher was positive about this experience as it allowed instruction of groups of students at approximately the same level.

CHAPTER SIX

THE SMALL SCHOOL: CONTEXT AND DATA PRESENTATION

The community of Sachs Harbour is located around a splendid anchorage, on the southwest shore of Banks Island. The climate is severe, with mean January temperatures close to –30C, while in summer mean temperatures hover around the +7C. Being farther north than the Delta communities, the swings from summer to winter are more severe with approximately 60 days without sunlight in the winter and the summer period of 24-hour daylight is 90 days long.

History

In 1929, three Inuit families moved into the area to trap and began a permanent settlement on the site. The settlement prospered and in 1953 the RCMP established a detachment post to police the population. The people in the community lived a traditional lifestyle hunting muskox, caribou and polar bear (Legislature of the NWT, 2002).

Population

The population of the community varies according to season. In hunting season and particularly when there are big-game hunts, the population rises. Population estimates range between a low of 110 (Mackay, 2003) to a high of 153 (Legislature of the NWT, 2002) with all of the permanent residents of the community Inuvialuit.

Leadership

The hamlet council consists of a mayor and three councilors. The Inuvialuit Regional Council also has representation in the community. The District Education Authority comprises a chair, three members and a part-time secretary.

Economy

The economy of the community still revolves around the traditional lifestyle. Big-game hunting expeditions for trophy musk ox or polar bears are arranged through the local Hunters and Trappers Association, guided tours to view wildlife, flowers or birds are available, and as the gateway to Aulavik National Park, there is a small but profitable flow through of tourists (Legislature of the NWT, 2002). Businesses in the hamlet include a Co-op store, a bed and breakfast, and several local crafters who make garments from the musk-ox wool or seal skin.

Sachs Harbour is fly-in and transportation costs are reflected in every purchase. Flights are scheduled for Monday and Thursday year round and in the summer a Saturday flight is frequently added to accommodate the tourists. It is a traditional Inuvialuit community where the on-the-land lifestyle remains an important element that binds people together. Recent changes in the climate have brought different birds, marine animals, and land animals to the area. Another concern of the local people was the thawing of the permafrost around a freshwater lake causing the lake to drain into the ocean. A thinning of the ocean ice has been noticed, causing polar bears to stay out farther from shore. This is desirable for the safety of the children but makes hunting the bears more difficult and dangerous. The people of the community view these developments with alarm as they impinge upon their way of life (Mitchell, 2000).

Changes, other than climatic, face the people of this community. Long accustomed to their isolation, the recent advent of regular flights to and from Inuvik has concerned some community members. The flights ease the burden of isolation and bring a variety of

consumer goods into the community; unfortunately one of these is alcohol. The effects of

this can be detrimental as described by a staff member:

> I see a lot of drinking but I see it in one particular crowd. We usually get our scheduled flights on Mondays. . .and Fridays and that is when people would order there alcohol in and they would drink maybe day after day for a couple of days and they wouldn't stop. (C13001, p. 4)

The challenge for the people of the community is to continue to celebrate their

traditional lifestyle when faced with an altering physical environment due to climate

change making hunting more difficult. The influx of modern ideas through internet and

television are comparatively new but are being embraced by youth as are the convenience

of regular air flights to the south.

<div align="center">Inualthuyak School</div>

The smallest and most isolated school in this study overlooks the anchorage of the

small community situated on the Arctic Archipelago. Running east to west, the layout of

the building would be familiar to many western Canadian educators and students, with its

hallway flanked by a line of four classrooms on one side and storage rooms and

washrooms on the other.

Upon entering the school the visitor is faced with boot racks in the small entrance

way. Everyone entering the school removes their outdoor footwear before proceeding

along the hallway. The school library is the first of the four classrooms on the south side.

The library faces storage rooms and a janitorial room on the north side of the hallway. As

the visitor proceeds along the hallway a computer lab is viewed on the south side. This is

a small room approximately one-third the size of a classroom containing eight up-to-date

computer stations each with high-speed internet connection. Should the visitor proceed

north through the computer laboratory, entry is gained to the principal's office, a small

room with a desk, telephone, computer, filing cabinet and fax machine. The east door of the lab provides entry to the junior high school classroom, a well appointed classroom that can accommodate the approximately 12 students in grades seven, eight, and nine. In this classroom, and the others in the school, students' work is displayed both in the classroom and in the hallway. Walking through this classroom and out of the door at the west end into the hallway, the visitor will see the students' washrooms on the opposite side of the hallway.

By turning and proceeding west along the hallway the visitor next views the elementary classroom on the south side. The students from grades three through six utilize this area. There were approximately eight of these students during the year of the study. The primary classroom is the fourth, and last, in the hallway. It is adjacent to the elementary classroom with the mechanical room situated on the north side of the hallway. There were six children in this classroom ranging from kindergarten to grade two.

At the west end of the hallway is a security door that is locked in the evening and on weekends. This allows the community members access to the gym area for recreation, feasts, dances, and other celebratory events, but maintains the security of the school. Passing through the security door the visitor crosses into another entrance room. This room is larger than its eastern counterpart and is used by staff and community members to serve the students a hot lunch each day. The lunches are prepared in a small kitchen located on the north side of the hallway. On the south side of the entrance room are washrooms for community members when the gym is in use. The doors on the west side of the entrance room permit entry to a medium-sized gym.

Staff

During the year of the study there were three teachers and a program support assistant in Inualthuyak School. In that year the principal and the junior high school teacher were new to the community. The junior high school teacher was also new to the north having taught mainly as a substitute teacher in a southern province. She found the adjustment a challenge but enjoyed the favourable student-teacher ratio and the ready availability of classroom resources in such an isolated location. The elementary teacher was in her fourth year of service in the north having arrived in Sachs Harbour as her initial teaching assignment

Administration

The principal had spent all of her teaching career in the north. During that time she had taught in a variety of schools in regional centres, medium sized communities and tiny hamlets similar to the present community. Her teaching assignment during the year of the study was a multi-grade elementary classroom with eight students.

The principal was also responsible for program support in the school and directed the work of the program support assistant. Other administrative duties included reporting to the local District Education Authority, ordering and receiving school supplies, managing the school budget, as well as hiring teachers and allocating their duties.

School Environment

The school was modern in appearance and function with high-speed Internet connections in every classroom and the principal's office. It was very well maintained and was clean and bright with more than adequate space for the approximately 35 students.

In this community the school was seen as an extension of the family. This was reflected in the school year that began in early August. The students and their families spent the summer on the land and returned at that time due to the onset of fall. The school year ended in early June and the families returned once more to their hunting grounds.

The winter months are completely dark and there was a fear of polar bears, wolves, or rabid arctic foxes entering the hamlet. The students came to school in groups, often on snowmobiles, with parents or older children looking after the youngsters. One of the functions of the school lunch was to keep the children safely off the streets in the dark winter months. The isolation and long winters made this school a less sought after destination for most teachers. However the staff involved in the study spoke favourably of the school and community. The staff was welcomed into the community and invited to participate in community events. As one of the staff remarked:

> The biggest thing is to be as much a community member as possible. Participate in the culture and welcome the experience. If you isolate yourself you will feel isolated. Always remember to get away from your workload to meet people and socialize. (Mackay, 2003)

Gathering the Data

The difficulty in arranging face-to-face communication due to the isolated location of the community and school made data gathering less structured than in the other locations. A visit to the school on Education Council business prior to the data-gathering period permitted me to alert the staff to the study and to solicit their cooperation. Following the granting of the Research Licence in the Northwest Territories, I was able to conduct interviews with a classroom teacher and the classroom assistant when they were in Inuvik. Despite more frequent visits from the principal to my community we found it

extremely difficult to arrange the time to conduct a formal interview. As the school year

drew to a close and time become short, in order to gather her data, I e-mailed her my

questions and she responded by return e-mail. I followed up by meeting with the principal

as she passed through Inuvik on her way south for her summer break

The school enrolment was approximately 35 students from kindergarten to grade

nine. The low enrolment, by grade, determined that each teacher had a multi-grade

classroom. Opportunities to group students by ability level were limited due to the

extremely low number in each grouping.

<div align="center">Problems</div>

The data are reported in categories as outlined in the analytical framework shown

in Figure 1. The problem categories are prevalence, behaviours and achievement, at-risk

students, and community / school attitudes. The response categories are effective school

response, structural response, school culture response and roles and responsibilities.

The Prevalence of FASD Students Problem

The principal had no record of any student being formally diagnosed with FASD.

The isolation of the community made it difficult to refer students to the paediatrician in

the regional centre and visiting physicians had a very heavy workload while in the

community. She suspected that many students were affected by alcohol in utero. This was

based on the behaviours demonstrated by the students:

> Certainly we have no record of any students being diagnosed with FASD although
> we do have a couple of students who are said to be ADD. Knowing the families
> and the home background my thoughts are that it is in all likelihood a result of the
> fetus being subjected to alcohol (C11001, p. 1).

The elementary teacher had arrived in the community with no background or

experience with FASD students. She had concerns about the behaviours exhibited by her

students and identified these as not understanding consequences, attention deficit, and

frustration with the academic program. Her experience in the north had provided some

background in the challenges of students with FASD. She had concerns about three of her

students but qualified her comments by adding that she suspected that the local parental

culture was also a factor.

> I would maybe consider two or three of my students. I would be positive that they would be affected. It is really hard to say. I think that to some degree they all could be affected but because they are all behaving in such a way you don't really consider it that. . . you blame it on other things like poor parenting skills or not enough sleep (C12001, p. 4).

> There is a complete lack of diagnosis in this community although suspicions were

expressed about the possibility of students with FASD and the behaviours of a number of

students. However the suspicions were qualified due to possible confusion with ADD and

other behaviours easily confused with FASD.

The Behaviours and Achievement Problem

During her first year in the community the principal was concerned about the

attitudes and behaviours displayed by her students. She commented on these behaviours:

> Many students show no evidence that they remember anything that is taught from one day to the next. They lash out with blaming others and do not accept responsibility for their actions. They do not seem to care about other people and are self-centred (C11002, p. 1).

She did qualify her comments attributing the responsibility for these student behaviours to

parents who do not provide a home environment suitable for student learning. In her

opinion the parents "do not have the development required to make wise choices for the

children, living in the now without thought of what is good for my child later on.

We have a number of homes where there is no bedtime, no family mealtime, (and) no

homework time" (C11003, p. 1).

The lack of academic achievement in her class was a concern to the elementary teacher. This was coupled with behaviour problems that varied between individual students but caused concern for the progress the class could make:

> . . .managing that (student's) behaviour and having time outs and that student being warned that there are going to be time outs as his consequence for inappropriate behaviour. In other cases it is very mild. . .but it is just the lack of understanding. . .what a question means or how to answer it or noticing the topic change (C12002, p. 4).

Many of the students displayed behaviours that concerned the respondents although they suggested that the poor home environments were a likely cause of these. There were also concerns expressed about the lack of academic achievement of students.

The At-risk Student Problem

The extreme isolation was a concern for this teacher as it impinged on the level of service provided to the students. The lack of testing available to her students obliged her to discuss problems with her colleagues. She also spoke to the parents since she felt she had no "way of testing FAS other than talking to the parents to find out" (C12004, p.4). The principal viewed the parental lifestyle as an impediment to student progress in school. This was reflected in a number of students who do not have adequate home care. She commented:

> I frequently see students who suffer from poor nutrition. This is caused by their parents' unwise use of money often leaving no money for food. There are also students who come to school tired because they cannot sleep at home. In such an environment it is little wonder that homework is not completed. It is a fact of life in the north that many of our children live in homes where they are exposed to second hand smoke. Our students also tend to smoke at an earlier age than students in the south (C11004, p. 2).

The absence of diagnosis made it difficult for respondents to determine if students in their school were suffering from FASD. To try and determine if her suspicions were

founded one respondent questioned the parents about the use of alcohol during pregnancy.

The behaviours of the students caused the respondents once more to express concern

about the possibility of FASD and also poor home life.

The School / Community Relationship Problem

Upon her arrival to the community the elementary teacher had been a newcomer to

the teaching profession and the north. Her initial introduction to the community members

was somewhat curtailed by the school workload on her part and the fall seasonal hunts

that took many of the families out of the community. As the first year progressed she had

become familiar and comfortable with almost all of the community members:

> It wasn't until the second or third month of school, and especially
> after report cards, that I got to know all of my parents. I think
> that it could've been half a year before I got to know some of the community
> members that didn't have children in school. (That was) partly because I wasn't
> as outgoing as I could've been. I was a little overwhelmed with the workload
> (C12003, p.1).

This respondent found the community welcoming and had made her home there.

She had become a member of the community and had taken on other roles in the

community volunteering her time on the Justice committee and the recreational

department. The community, although isolated, was a welcoming place and allowed

newcomers to participate in community life.

<div align="center">Responses</div>

The data are reported in categories as outlined in the analytical framework shown

in Figure 1. The response categories are the effective school response, the school culture

response, the structural response, and roles and responsibilities.

The Effective School Response

High teacher turnover had determined that the elementary teacher spend a great deal of time identifying and cataloguing resources in the school and in her classroom where "due to so much staff change over years before, there are a lot of resources there that need to be read through and that is a time consuming job and I only get so far with each year" (C12004, p. 3). The time was well spent and the teacher believed that she had been able to utilize the existing resources and those resources that had arrived during her tenure. She found that "the resources are good with what we have. It has improved over the past three years due to K- Gr. 1 initiative and other things" (C12005, p.3).

Drawing from her experience from other schools with a cohort of students with FASD the principal viewed it important to begin the assessment process. She was not surprised to find parents reluctant to have this done:

> I have found that in (another jurisdiction), where I spent a number of years as an administrator, adoptive parents were more likely to get a child assessed and were actually anxious to (do this) if they thought there was a problem. Birth parents were in denial of such a problem. (C11005, p.1)

High teacher turnover had left many of the schools resources in a less than organized manner. One of the respondents had taken time to organize her classroom as well as the school's shared resources to permit their more effective use. In the discussion it was felt that the school might benefit from an alternate class. Another of the problems discussed was the difficulty of persuading birth parents to have their children assessed for possible FASD.

The School Culture Response

As a local person the program support assistant had informed views about the school culture. She had been educated in the school and had an understanding of how the school related to the community culture:

> I think that school is one of their favourite places to be. That is the vibe I get from them, from being around them and teaching and from helping the teacher. I think that they find school is a big part of their life and they enjoy being there. (C13001)

The program support assistant commented on the poorer attendance, especially toward the end of the school year, as a problem rooted in the communities need to harvest animals by seasonal hunting. When reflecting upon her time in school she commented, "our attendance would drop in the school during spring because families would go out hunting, fishing, and camp out for weeks" (C13002, p. 4). She feels that while the attendance is still affected in spring the students who stay home now watch "video games, Much Music, TV, Hollywood and all this other stuff" (C13003).

The School Structure Response

The local community culture of subsistence hunting is strongly represented in the school. The elementary teacher enjoyed this aspect of her work and had utilized on-the-land experiences with her students as well as a personal social activity. She believed that the relationship with the students in her class combined with the culture that they lived had been a strong motivator.

> They are really a good group of students and I really enjoy the people and the culture, despite the problems of the community. The cultural aspect of it and the school definitely rules above the problems and that is what has kept me there. (C12006, p. 1)

The low enrolment and small staff size made restructuring a challenge. The principal had previous experience of the success of alternate classrooms in middle year classrooms:

> . . .scheduled Phys Ed for first thing in the morning and first thing in the afternoon every day. The students then did some in-class work and then went outside for outdoor education classes. I believed that these students needed a lot of physical activity to burn off their extra energy. From the results there and from what I have seen in this school I believe I was on the right track. (C11007, p. 2)

The staff allocation did not permit such an initiative in the present school but the principal believed that an alternate approach to curriculum was essential:

> My experience in northern schools leads me to question the whole idea of an academic curriculum. So many of our students have difficulty with our approach to learning that doesn't reflect any part of their lifestyle. We should be looking at developing a life skills program for our students to prepare them for life in their community. (C11008, p. 2)

The local Aboriginal culture was viewed as a strength by the elementary teacher. Another respondent suggested that an alternate program would be a great benefit to the school but difficult to implement due to the small number of staff members. The present curriculum was questioned and a life skills curriculum suggested as an alternative.

Roles and Responsibilities

The principal was charged with the responsibility to provide administrative leadership in this school and had the major responsibility for the organization of the school. In these undertakings the policy and mission statements of the Education Council guided the principal. The principal also undertook the responsibility in the school for Program Support. This meant that she was bound by the philosophy of the NWT Inclusive Schooling Directive (1196) to ensure the acceptance of all students, believe that all students can learn, accept the diversity of the students, and to provide support services in

a creative way for students and teachers. The principal and staff were responsible for the reflection of local culture in the school and to provide and outreach to the community. Classroom teachers were responsible for the development of appropriate instructional material. They were expected to be supportive of the principal and school initiatives.

<div align="center">Theory Adjudication</div>

The principal in this school, although an experienced northern administrator, found this extremely isolated hamlet a fresh challenge. The development of a new theory in action took place throughout the school year and was adapted and amended both at that time and into the next school year.

Explanatory Accuracy

The reflection of the importance of family in the community was brought into the school's theory in action. This served the purpose of making the students feel at ease and also allowed the school to relate more easily to the community. Parental fears for their children were allayed by serving lunch in the school in the dark winter months keeping the children indoors for most of the day.

Staff concerns about student behaviours were addressed by implementing daily classes of physical education and, when the constraint of seasonal light permitted, outdoor education classes. This was believed to be an efficient way of expending student energy. Other efforts were made to reflect the student interests and learning styles by the introduction of a life skills program.

Effectiveness

The energy and effort expended to implement the theory of action was not excessive. The staff was able to supervise the lunch program and also offer daily physical

education to each class. The outdoor education program, was delivered by local people who were paid by the District Education Authority. This program was successful in the late spring of the year of the study and was carried into subsequent years. The life skills program took longer to introduce but was delivered by Education Council personnel on a system of rotation through all of the schools.

Coherence

The theory in action was consistent with the belief set of the staff and the community. They saw the constraints of a family environment and a curriculum that interested and invigorated the students as acceptable within their whole problem set. The espoused theory, although limited, was adequate and also congruent with the theory in use.

Improvability

The theory in action was straightforward and enjoyed an openness that would allow revision. In the year of the study the theory of action was implemented and little revision took place. It was subsequently revised and continued in use in an altered form.

Critical dialogue

The principal was explicit in her demand for a reduce pupil-teacher ratio because of what she saw as a challenging academic environment. She persisted with this theory of action, both in the year of the study and beyond, in an effort to improve the academic and social behaviour of the students. The staff was supportive of the theory of action, despite its limitations, and believed that the reduced pupil-teacher ratio brought stability to the school.

CHAPTER SEVEN

SYNTHESIS OF THE DATA AND DISCUSSION

The two-fold purposes of this study were to investigate the work of three administrators as they attempted to solve the ill-structured problem of integrating students with fetal alcohol spectrum disorders (FASD) into their schools; and to investigate the role of schools in influencing community responses that would enhance the post-school lives of the students with FASD.

This chapter summarizes the findings of the study, providing analysis and discussion reflecting the literature reviewed in Chapter Two. The anticipated responses in Figure 1 were utilized to frame research questions one through four. These questions frame the findings, analysis, and discussion.

1. How did the three administrators work with the three northern schools to respond to the needs of the students with fetal alcohol spectrum disorders?

2. What were the procedures used by administrators in these schools to build and maintain a successful culture that addressed the needs of the students with fetal alcohol spectrum disorders?

3. What changes were required in school structures to facilitate better response to the needs of students with fetal alcohol spectrum disorders?

4. How did the schools work with their respective communities to respond to the challenge of the fetal alcohol spectrum students?

The Problems

In Figure 1 four major sub-sets of the problem were identified. These were the prevalence of students with FASD; the achievement and behavioural challenges of the student group; the existence of at-risk students because of this, an anticipated smaller group of students who will demonstrate extreme behaviours; and, the relationship between the school and community.

The Prevalence of FASD Students

In Sir Alexander Mackenzie School a study by Godel et al. (2000) found that in a cohort of the school population almost 50 per cent of the students were afflicted with FASD. The principal believed that the cohort tested in the study was an exception to the norm but that there were three or four students with FASD in every classroom. The past chair of the District Education Authority (DEA) believed the problem to be major and viewed the data from the study by Godel et al. (2000) as likely to be typical of the student population in the community. The public health nurse cautioned against labelling students as suffering from FASD without formal diagnosis. She believed that there were seven students in the school who had been diagnosed and that there were approximately 28 more students in the school suffering from FASD but not diagnosed (May & Gossage, 2001). The prevalence of students with FASD in this school was in the range between 8 per cent and 18 per cent.

The principal of Moose Kerr identified a cohort of three students who had been diagnosed with FASD. She also suspected that there were more students in the school afflicted by alcohol in utero but did not have the resources available to diagnose the students. The Program Support Teacher (PST) believed that the cohort of students with

FASD numbered five students and observed that she had developed six Individual

Education Plans (IEP) for severely mentally and physically handicapped students. The

health nurse was unable to give a number for children with FASD but did confirm that he

witnessed alcohol abuse by pregnant women. The data would suggest a cohort of students

with FASD between 15 to 25 students making the prevalence between 9 per cent and 14

per cent.

The extreme isolation of the community containing Inualthuyak School had

prevented any type of formal diagnosis. There were suspicions of alcohol use by pregnant

women but in the absence of any type of formal evidence it is impossible to establish a

prevalence of students with FASD in the school. The data on prevalence in the schools in

this study indicated that there was widespread alcohol use in all three communities and

that abstinence by pregnant women was not always the case. The lack of formal diagnosis

due to the isolation and lack of on-site physicians makes the exact prevalence difficult to

establish.

The prevalence of students with FASD was established in this study using the

number of students in each school formally diagnosed as a base number. From the

guidelines of May and Gossage (2001) the number of diagnosed students with FASD can

be extended to show the likely number of undiagnosed students in the fetal alcohol

spectrum giving the prevalence in the school population. The insights of the participants

in the study as to the total number of students afflicted by alcohol in utero are also

considered. The prevalence is then given in a range of values that reflect the possible

accurate prevalence. In Northern communities, where lack of screening and diagnosis

usually denies the researcher precise data on the prevalence of FASD, this is the clearest

indicator of the prevalence of students in each school suffering from FASD. It should also

be stated that studies conducted into prevalence in Northern communities by Asante and

Nelms-Matke (1984), Robinson, Conry and Conry (1987), and Godel et al. (2000) each

indicated a prevalence significantly higher than the national prevalence in Canada as are

the figures in this study.

The Behaviours and Achievement Problem

   The data in this problem contained many references from the schools in the study

to the challenges posed by the behaviours of students. The behaviours discussed were

extreme violence and aggression, socially inappropriate and disruptive behaviours, and

difficulty with rules and regulations. There were also comments about the students being

easily distracted, hyperactive and making poor decisions that could also be attributed to

students with Attention Deficit Disorder.

   The data above indicated a disconnect between classroom teachers and the

disruptions generated by the above behaviours. The attribution is made particularly to

young teachers, new to the north, both unfamiliar with the student behaviour and their

perceived instructional duties. The challenge was most keenly felt by the first-year

teacher in the selective grouping classroom where his lack of experience was coupled

with extreme student behaviours and lack of academic achievement.

The At-risk Student Problem

   The social problems facing the students were severe with difficulty in

relationships with peers a frequent concern. The family life of these students was also of

concern to the participants in the study with poor parenting, poor nutrition, lack of

discipline, and lack of love being common to homes in all three communities. A

compounding factor to the poor family life was the lack of professional services available to the students diagnosed with FASD due to the isolation and work load of visiting professionals. Learning difficulties combined with poor attendance had created extreme challenges for these students in a regular classroom environment. These students were, as suggested by Lenarduzzi (1992), functioning from a disadvantaged position due to detrimental influences in their lives.

An early indicator of the social problems facing the at-risk students surfaced in the classroom of the first year teacher. Initially, he organized his classroom into small ability groups to work cooperatively. In an attempt to provide a solution he developed a constraint structure that involved moving the desks of a number of the students so that they faced the walls. These students responded by turning round and calling out to each other. A second, more effective solution, introduced a number of room dividers into the classroom. This was much more effective and blocked students who caused the friction from each other's view. The room dividers were removed after some time when the student call out behaviour receded.

The Community / School Relationship Problem

The relationship of school and community was critical to the long-term opportunities of students with FASD. By including community stakeholders in the development of the educational opportunities for students with FASD the school was also involved in educating and preparing the community for the adult years of those students (Shelton & Cook, 1991).

In Moose Kerr School the principal was a local Aboriginal woman who felt at ease in her home community. Her beliefs about community outreach from the school were

positive and she felt the response from the parents was greatly improved during her tenure. The dialogue was more pronounced with parents of elementary and middle-years students and she felt that there was less interest with junior high school and high school parents of students with FASD. Legge, Roberts, and Butler (2000) posited this uneven spread of interest was normal.

In Sir Alexander Mackenzie School both Aboriginal cultures are represented and also a strong non-Aboriginal minority. Community relations were less clear-cut in this school given the wide spread of cultures and the staff emphasis on academic achievement. The staff was less well represented with Aboriginal members than in Moose Kerr School. The on-the-land component of the curriculum enjoyed strong support from the parents of the students in the selective grouping classrooms.

The public health nurse expressed parental concerns caused by the lack of follow up to the study by Godel et al. (2000). This suggested there was an anticipated program of support for children with FASD in the community. Such a program was not put in place and is a major detriment to the treatment of the students with FASD. The community looked to the school for solutions to this ill-structured problem although the study by Godel et al. (2000) was generated by health professionals. The lack of follow up from the health professionals left the schools responsible for any integration of the students into the school and community.

In the small community the smaller population made community contact straightforward. The principal expressed some concern about the care given a number of the students but the open nature of the community permitted easy access to the parents.

Responses

Figure 1 identified the following anticipated responses from schools; efforts to make the school more effective; initiatives to develop a collaborative and improved school culture; changes to the structure of the organization; and the development of roles and responsibilities for the stakeholders.

The Effective Schools Response

Levine and Lezotte (1990) suggested that in discussion of effective schools two questions should be asked. Effective at what? and Effective for whom? They referred to the "what" as the mastery of the intended curriculum while the "whom" referred to all of the students in the school. For the purposes of discussion in this study the effectiveness of the school "what" was related to the curriculum offered to the students with fetal alcohol spectrum disorders (FASD). The "whom" in this case referred not to all of the students in the school but only the students with FASD.

Although assessment of the correlates that make a school effective are frequently considered as a means to determine what is an effective school, there are other criteria that will color the discussion. Of interest to this study was the relationship of the school with those families living in inadequate housing, with poor diet, and in a struggle for survival. They were families described by MacBeath and Mortimore (2001) as in the "poverty trap".   They posited that while the negative social background of the family continued to be influential there would be a "school effect" that makes a difference in the lives of their students (p.6). More importantly, effective schools permitted disadvantaged students to make more progress that they would in a less effective environment.

The effective grouping of students for instruction and the consequent utilization was an important factor in the success of the students. This was a strategy employed in Moose Kerr and Sir Alexander Mackenzie schools although the implementation was dissimilar. The selective grouping classes in Sir Alexander Mackenzie School created separate, smaller classes while in Moose Kerr School the cohort of students diagnosed with FASD were placed in a separate group under the care of the Program Support Assistant (PSA). Both strategies followed the principle of assigning the students to smaller groupings taught by specialized teachers. The smaller enrollment in Moose Kerr, with only one class per grade, determined that it was not feasible to manipulate classes in the manner of Sir Alexander Mackenzie School. The principal and staff attacked the problem by instituting "walking reading" and "walking mathematics" to provide leveled instruction to students in Kindergarten – Grade three and Grades seven, eight and nine by grouping performance levels and amending the school timetable to permit common periods of instruction in both subjects

In Inualthuyak School the enrolment was less than 30 students. The staff allocation was three teachers, a half-time Aboriginal Language teacher, and a PSA. This allocation provided classes with fewer than ten students and allowed the staff to consider other approaches to organizing the grouping of students.

In all three schools in the study, low class size was considered a factor in the instruction of students with FASD. Simon (1973) suggested that ill-structured problems could be broken down into smaller more manageable problems. In this way, he argued, the ill-structured problem became well-structured. By breaking down the size of the units of instruction the principals in this study were attempting to reduce class or group size for

the students with FASD. Although each school used a different model, in each case, the purpose was to achieve a well-structured problem. Robinson (1993) accepted this as a valid approach. However she cautioned that shifts in the school environment, such as staff reduction or an increase in the prevalence of students with FASD, would change the now well-structured problem back to that of the ill-structured variety. At that point new constraints would have to be applied to the problem in the search for an adequate solution

Levine and Lezotte (1990) consider low class size a major factor when improving higher order skills in low achieving students and also suggest lower numbers of students in a classroom permit teachers to provide more individual assistance. Smaller class size also permitted more ready leveling of ability groups. "Leveling" was viewed by Levine and Lezotte (1990) as a better description of ability grouping than "homogenous grouping" or "tracking" because it implies help for students to master "skills needed to function successfully thereafter in heterogeneous learning environments" (p.27).

To stimulate student interest in learning the teachers in the study were frequently involved in considerable interaction between themselves and the students. One program that encouraged a great deal of teacher-to-student interaction was the on-the-land experiences offered in Sir Alexander Mackenzie School that allowed the development of relationships and interactions essential for student learning (MacBeath & Mortimore, 2001). The introduction of the on-the-land and Moose Kerr's lunch program programs also provided some diversity of learning for the students allowing them to utilize spatial intelligence, kinesthetic intelligence and their personal intelligence in a school setting (Renihan & Renihan, 1995).

The promotion of active and enriched learning is a challenge to teachers especially in schools with higher than normal numbers of low achievers. To successfully implement an enriched learning environment, such as carpentry or an on-the-land program, resources were provided and teacher work loads adjusted. This required a staff committed to enriched learning and willing to accept the disruption that inevitably occurs to the school organization and routine (Levine & Lezotte, 1990). The teachers involved in the enriched instruction faced difficulties not encountered in the more traditional form of direct instruction. A number of factors were essential to ensure teacher support for enriched instruction. These were teacher conviction of the efficacy of the approach, teacher involvement in the decision making, and individuals sophisticated enough in their approach to teaching that success was likely.

As described in this section, administrative planning in building an affective climate in the school was part of the success of this venture. As I began to gather data, it was apparent the administrators and teachers were willing to make changes that increased their workload in an effort to deliver a more effective program to the students with FASD. They were determined to produce a "school effect".

Although the schools made a difference by becoming more effective, it was in the classrooms, where activities designed to increase the interest and participation of the students with FASD, that effective change was being made. The innovation in Sir Alexander Mackenzie School by the administration came in the development of the selective grouping concept. The innovative teachers in those classrooms introduced an alternate curriculum that changed the school experience for their students. Teachers in

each of the schools in the study attempted to bring enriched learning experiences to their students by designing and delivering programs to engage their students.

The three schools in this study were located hundreds of kilometers from each other, were of different sizes, and had community cultures that were situationally specific. However they did enjoy some success in improving school effectiveness and did so using similar professional methods. Inherent in the success of each administrator was the affirmation of the school staff as capable professionals. The teaching staff in each case was part of the decision-making process and a level of trust developed between the parties allowing the teaching staff to take risks in their classrooms. These risk-taking teachers brought about improved school effectiveness. For their part, the administrators built a climate of trust that permitted the teachers to take these risks in their classrooms.

Maintaining a Cultural Fit

The procedures used by the administrators to build and maintain a successful culture are discussed as belonging to two main categories. The first of these was the type of environment created for the students with FASD. Elements of this environment included the type of school program offered and the culture of caring that was generated to make the students welcomed as a part of the school body. The second category examined the efforts made by the administrators to infuse the local Aboriginal culture into the ethos of the school. Also of concern in this category were the procedures used by the administrators to reach out to the community and establish the school as an important part of that milieu.

The discussion of these two categories of response was centered on the ill-structured problem facing the administrators. In the first category the administrators were

tied to curricula initially developed and prescribed for use in southern Canada. These curricula were in use daily as the core subjects taught in their schools. The curricula taught in these schools was mandated by the Department of Education, Culture and Employment of the NWT and tied to the Western Protocols in Language Arts, Mathematics, Science, and Social Studies.   The second category of response examined a curriculum and ethos reflecting the fundamental and distinctive character of the community. This curriculum was developed in the NWT and refined in the local school to mirror the Aboriginal culture of the community. The oppositional character of the categories and their need to be instituted simultaneously were at the heart of this ill-structured problem.

School culture. The administrators were charged with a wide variety of responsibilities chief of which was the co-operative development of school goals, plans, and policies to facilitate partnership with stakeholders and excellence in education. The outcome of these plans was to develop a school culture that would reflect a positive and safe learning environment for the students. The Government of the NWT further demanded that school culture, developed by these administrators, reflect the values, broad perspectives and languages of the local community culture and would develop programs and procedures to encourage parent and community involvement in the school (GNWT, 1996b).

In two of the schools in the study the administrators were new to the community and the community culture. The principal of the large school came to his position from the south and initially had no knowledge of northern education in general nor the Aboriginal culture of his community. By the school year of the study he had spent four years in the

community and felt more at home with the challenges of the task. The principal of the small school had spent many years teaching in the north but always in Dene schools and had no experience in a small, Inuvialuit community. Both of these administrators, without experience of the local culture, were charged to develop and deliver a culture-based program to complement the school education program (GNWT, 1996b). In the case of the mid-sized school the principal was a local Aboriginal woman. Her cultural background and knowledge of the community permitted easy access to elders, language speakers and other resource people to facilitate and promote local Aboriginal culture in the school (GNWT, 2003).

Donaldson (2001) emphasized the desire of teachers to deliver a meaningful program within the walls of their classroom. Discussions early in the school year with the teachers of the selective grouping classes indicated they felt this was not being accomplished for the students with FASD so they attempted to change the school culture as it related to the way these students should be educated (Leithwood, Jantzi & Steinbach, 1999). Over the course of the school year they moved from the regular classroom, with its indoor emphasis on academics, to an outdoor experience with emphasis on practical and local skills changing the culture of their classrooms in two ways. The first was the removal of physical boundaries allowing active students the opportunity to move while they were learning. The second brought student relevance to what was being taught by removing the prescribed academic curriculum and adopting educational outcomes valued by the students.

In Moose Kerr School, shared beliefs were altered by the actions of the principal in an attempt, as suggested by Petersen and Deal (1998), to provide a culture of caring.

With staff collaboration, a theory in action was developed to manipulate school programs and change structural arrangements. As a strategy it satisfied a constraint structure to provide a culture of caring for students with FASD and was acceptable to the staff and community. Argyris and Schon (1974) saw this type of single loop learning as an efficient way to invest in the highly predictable activities that make up the biggest part of our daily lives. Robinson (1993) suggested that the strength of single loop learning lies in the ability to revise a theory while continuing to hold core beliefs. Attempts to change school culture and to develop more sensitive treatment of students with FASD were challenged by the lack of professional and financial resources. However, the challenge was of a moderate structural nature, and permitted the Moose Kerr staff to collaborate and effect the change. The unified school staff was another factor in the success of these changes in school culture allowing the administrator to utilize the overarching symbol of the needs of students with FASD to allow staff to reach consensus (Bolman and Deal, 2003).

An emphasis on prevention of FASD was another demonstration of an administrative attempt to change school culture. This was a conscious effort on the part of the administration and staff in Moose Kerr School to heighten awareness of the student body in Grades 9 to 12 to the dangers of alcohol in utero (Godel et al., 2000). Firestone and Louis (1999) suggested such an attempt demanded an alteration in the behaviors and expectations developed to influence the student body. This, they opined, was an internal concern relating to the importance of what was taught to the students. However, emphasis on the importance of prevention with a cohort of young adults entering their child-bearing

years was also an attempt to increase the community sensitivity to the use of alcohol

during pregnancy (Godel, 2000).

In Inualthuyak School the principal and her staff were adapting to the community

culture. They initiated the school lunch program that allowed the entire student population

to stay in school all day. This was considered important to the parents but also gave the

staff an opportunity to interact with the students on a less formal basis than in the

classroom. From these interactions an understanding of what interested the students

became available to the new staff members

Aboriginal culture. Upon entry to each of the schools symbols of the community's

Aboriginal culture were readily visible. The prominent display in the school entrances

and hallways of traditional clothing, elders' pictures, traditional hunting weapons and

other types of cultural materials suggest to any visitor that these are Aboriginal schools.

These displays reflected some of what Schein (1992) labelled as "artifacts" of culture.

They were easy to observe but their true meaning would be difficult to understand. He

suggested that the artifacts were an attempt to indicate that Aboriginal culture is an

espoused value and a strong part of what drove the education of the students.

Teacher turnover in two of the schools in this study was 30 per cent suggesting

that non-Aboriginal staff, mainly from Southern Canada, was arranged in a series of sub-

groups attempting to integrate their experience. Leithwood (1999) suggested the process

of acquiring the new culture involved forming a set of beliefs or changing a previous set

of beliefs. This requires numerous experiences over an extended period allowing

opportunities for reflection. The staff acquiring the culture acted as a constraint on the

espoused values of the Aboriginal culture and prevented a nesting of the espoused values

with the underlying assumptions. Without nesting of values there could be no development of a philosophy that drove the school (Schein, 1992).

The difficulty facing the administrators as they attempted to inculcate the Aboriginal culture was the time-lag required by new teachers to adopt the beliefs of their new school. The administrators' task was not to change the school culture, as much as to make the incoming teachers sensitive to the culture of the students and parents in the community. Stolp (1994) alluded to the principal exercising caution in changing the school culture. In this case the principal had to be patient, not in an attempt to change culture, but in allowing time for new teachers to acquire the local culture.

In the Moose Kerr School the lack of knowledge of the incoming teachers was balanced by a pronounced cohort of Aboriginal staff members. This comprised approximately half of the school staff thereby generating a paradoxical situation where one half of the staff were thoroughly nested in the local culture and the other half was a series of sub-groups with differing levels of cultural acuity. The deep-seated cultural commitments made by the school and their displays in the school were an attempt by the principal to embrace local mythology (Deal & Peterson,1999) and reinvigorate the culture of the school by emphasizing the mission, values, and norms.

Sir Alexander Mackenzie School enjoyed a relatively stable cohort of teachers who had spent many years in the community and had made some adjustment to northern values. Almost entirely non-Aboriginal teachers they may have accepted the espoused values of the Aboriginal culture but those values were not readily apparent in the school curriculum. The staff, both long-time northerners and newcomers, was similar in their concern for the delivery of the non-cultural curriculum. The concern of each classroom

teacher was what occurred in her/his classroom. In this area they had responsibility and exerted control over what was taught (Donaldson, 2000). Student work, displayed on the classroom walls and exhibited in the hallways, reflected an overwhelming emphasis on the non-cultural curriculum.

On-the-land experience. The Aboriginal culture programs offered in the three schools in the study revolved around occasional days on-the-land usually involving fishing, hunting or trapping and the preparation of traditional food (GNWT, 2004). There was no integrated approach that emphasized the importance of Aboriginal language and culture. This program was piecemeal with each classroom teacher having responsibility for cultural inclusion. In Moose Kerr School, one day a month was the normal allocation while in Sir Alexander Mackenzie School students attended the Gwich'in Cultural Camp, a facility close to the town, for one day in late winter each year. In Inulathuyak School local hunters and elders provided instruction in the ways of the land.

Aboriginal teachers, who were familiar with their own culture, found the on-the-land experiences difficult to organize. They, like the newcomers to the north, discovered the demands of the curriculum and the students left little time or energy for the development of the Aboriginal culture component of their program (GNWT, 2003).

Organizational culture v. Aboriginal culture. Firestone & Louis (1999) suggested that the culture of the school provided the codes, categories and forms used by the principals to give structure to the organization. Specific direction to the principals was provided under The Duties of a Principal as outlined in the Education Act of the NWT (GNWT, 1996b). This formal organization and structure used modern values designed to bestow legitimacy on the administration of the school to the larger public. The Aboriginal

culture of the school and duties of principals in the field of culture-based education were also identified in the Education Act (GNWT, 1996b) although separately from the Duties of the Principal.

The cultural component of the curriculum of the NWT demanded that students spend time on the land to become capable in that milieu and to appreciate the importance of the land to Aboriginal people. This was a cultural view of education originally rooted in the need for survival and, from the Aboriginal perspective, education was acquired through life experience and by doing (GNWT, 1993).

Traditional land education was cyclical and by repeated exposure to skills children learned at their own pace. The motivation to learn was strong and based in the need to acquire the skills essential for survival. Lack of on-the-land experience in these schools was a serious handicap to the cultural education of all the students and particularly those students with FASD. As emphasized by Burgess and Streissguth (1992) students with FASD require their schools to place emphasis on their culture as a means to enhance their self-concept. Closeness to the land is part of the self-concept of northern people and the manner in which they acquired the land skills reflects a distinct learning style (GNWT, 1993; GNWT, 1996a).

The theory in action of Aboriginal culture in the field of culture-based education does not bear scrutiny. The lack of enforcement in practice suggests this is an espoused theory and the theory in use is one where formal academic education is predominant. Rather than learning about their language and culture the students in this study were immersed in a curriculum that did little to reflect their unique cultural heritage. They were instructed using a curriculum that was foreign to their realm of experience using different

learning styles that did not relate to their life experience (Argyris, Putnam, & MacLain Smith, 1985).

The Structural Response

The discussion of these data reflects the efforts made in the three schools in the study as they altered school structures to integrate students with FASD. By re-structuring the classrooms and the school the principals and staff members attempted to enable students with FASD to enjoy a more meaningful educational experience. The following description and discussions revolved around initiatives taken in all schools and, where these are similar, dealt with multiple approaches to addressing the problem(s). Individual initiatives or those initiatives of a unique nature were discussed on a basis of their own merit.

Structure for attachment. The identification of a cohort of students with FASD and the subsequent re-structuring of their classrooms was not a complete solution to the integration of students with FASD into the schools. To be effective with at-risk students of this kind, the re-structuring of classrooms must be accompanied with the development of supportive interpersonal relationships (Edwards, Danridge & Pleasants, 2000). Prior to the restructuring, a long-time school practice had been to place the students in the mainstream. Wehlage and Rutter (1986) posited this had generated a lack of sociability, negative school attitudes, and low self-esteem among the cohort of at-risk students. The restructuring of these classrooms was a bold attempt to engage the students and challenge their negative characteristics with a supportive school structure. One component of this new structure was a novel approach to what was to be taught and how the instruction was delivered. The restructuring also involved school staffs in strenuous efforts to develop

new relationships among members of their school communities (Lieberman, 1988;

Renihan & Renihan, 1995).

In Sir Alexander Mackenzie School the first year teacher identified early in the

year of the study that his students had difficulty sitting still in the classroom. He

responded by identifying an alternative approach to delivering instruction that allowed the

students to move and become less frustrated by the environment of the classroom. The

approach to solving the ill-structured problem was begun by generating a constraint

structure that framed the parameters of what they could view as an acceptable solution.

Initially their theory in action involved an explanatory accuracy for the problem in

that it removed the physical boundaries of the classroom. The students were given room

to move while they were learning. The positive response of the students demonstrated to

the teachers that the constraint structure was effective. The solution that had been

developed using the constraint structure appeared consistent and coherent with the

problem set of the teachers. They saw that by allowing their students movement they

could deliver an educational program. The solution also contained improvability as it

allowed the teachers to develop an alternate curriculum including their on-the-land

program (Robinson 1993).

Argyris and Schon (1974) suggested the integration of thought with action was a

rare ability that had frustrated philosophers, social scientists, and professional

practitioners in its demands to generate knowledge that was immediately transferred into

effective action. As the first year teacher and his mentor developed their ideas related to

the carpentry and on-the land components of the curriculum they took a transformative

view of how to approach the at-risk students. By altering the curriculum the teachers

engaged in double-loop learning as they examined the predictable activities of their classrooms. In deciding to alter the governing variables and allow their students to move while learning, the settings of the programs were changed causing "ripples of change to fan out over the whole system of theories-in-use" (p.19).

The initial experience of the on-the-land program allowed the development of a positive teacher-student relationship through mutual interest (Renihan & Renihan, 1995). Supportive comments from the parents of the students in the selective grouping classrooms further reinforced this conclusion and offered an opportunity to engage those parents in the education of their children. The school was now involved in a process using past and recent experience, other background theory and knowledge of the environment to determine a constraint structure (Robinson, 1993). Lenarduzzi (1992) suggested that the social bonds developed between teachers and students allowed the students into the mainstream of the school. In the selective-grouping classes, the students became attached to the teachers and their peers through the on-the-land and other alternate curriculum experiences. These attachments were viewed by Wehlage, Rutter, Smith, Lesko and Fernandez (1990) as major requirements for the students to acquire school membership.

The development of an alternate curriculum to integrate the students in these classes with severe behaviours into school life was essential. The use of on-the–land and other practical skills was acknowledged as an important skill to be acquired by the students. The skills that the students could demonstrate through on-the-land learning, carpentry, cooking, or working in the school lunch program, provided new strengths for the students. These new strengths, frequently founded in the Aboriginal culture of the students (GNWT, 2003), gave them, often for the first time, success in school   The

teachers based a theory in action on these successful experiences and developed students

skills in the areas that their students demonstrated strength. The success of the students

became a base that allowed further skill development (Williams, 1998).

In Moose Kerr School the staff worked to alter the instruction of Language Arts by

ability grouping students in Kindergarten to Grade three and Grades six to nine. The

schedules were blocked to permit instruction in language arts at the same time every day.

Students were assessed for ability levels and began to receive instruction with the

appropriate ability group. This system was extended to instruction in mathematics for the

same grade levels during the year of the study.

To provide training in life skills in a small community with little opportunity for

work experience, the school gave the FASD students roles in the delivery of the school

lunch program. From these experiences the FASD students developed out of school skills

and experienced success while in the school environment in areas that their skills and

abilities were appreciated (Williams, 1998).

Another component used in Moose Kerr School to provide social bonding was the

pairing of students with FASD and a responsible student who acted as a role model. This

permitted the classroom and school-wide rules to be imparted by a peer to the student

with FASD. The buddy system was a method that the school used to develop attachment

in students with FASD to the school norms of good and proper behaviour. Wehlage et al.

(1990) suggested that through such acceptance the students with FASD became willing

participants in school life and more willingly accepted school membership.

The development of relationships both student-to-teacher and student-to-student

was a viable response to the at-risk students and an important way to empower them.

Teachers were also empowered as they developed and implemented their ideas in a collaborative manner with the approval and cooperation of the school administration. The theory in action was effective for them because it determined how to achieve their purposes under given constraints. From the researcher perspective it allowed me to observe the behaviour of the at-risk students and teachers and predict the outcomes of that behaviour (Argyris and Schon, 1974).

The lack of development of a strong relationship with the parents is seen as a weak link in this chain of empowerment. Despite making some headway in involving the parents into the education of their children, the teachers were not entirely successful. This may be seen in the difficulties the teachers experienced attempting to have homework completed. Renihan and Renihan (1995) posited that the teachers and principal had an opportunity to engage and empower the parents but failed to do so.

Social training coupled with academic and curricular restructuring were used as interventions to combat the extreme behaviours and violence exhibited by the students in the selective grouping classrooms. These were deemed to be effective if the students responded positively to the intervention and if the extreme behaviour and violence of the students diminished.

In the classroom the teachers were faced with a range of behaviours including hyperactivity, distractibility, reduced attention span, apathy, withdrawal, and feelings of inadequacy. In their approach to these problems, the teachers altered the curriculum in an attempt to engage the students; from an initial belief that the students needed space to move freely the on-the-land approach was developed. The altered curriculum generated student interest and encouraged the development of demonstrable skills that gave the

students pride in their competence. Lenarduzzi (1992) suggested that by being successful in their Aboriginal culture the students were engaged, often for the first time while in school, and were motivated to continue to invest in school activities. The teachers also endeavoured to engage the students using extrinsic rewards to afford these students an opportunity to succeed in school by being rewarded for their efforts.

By the use of these initiatives the teachers used social bonding to attach the students to the schools norms, activities and people. Student interest in the activities encouraged their development of a personal stake in being a member of the school and motivated the students to make a commitment to the school. Wehlage et al. (1990) asserted that although less academically demanding, the practical activities that engaged the students were no less rigorous in their demands on the students in the selective grouping classrooms.

Restructuring resources. The resources required for the "selective-grouping" and diagnosed students with FASD initiatives were taken from the students in the mainstream. The previous system of even distribution of resources was a contributing factor to the inequities faced by the at-risk students. Punshon (1998) posited that at some point it was inevitable that these inequities would be addressed and the result was the improved pupil-teacher ratio and a more relevant curriculum. Rawls (1971) suggested that the challenges faced by the students in the selective grouping classes were not of their own making and the allocation of extra resources to permit them to succeed was a reasonable solution.

In Sir Alexander Mackenzie School a major redistribution of resources occurred simply through the reduction of student numbers in the selective grouping classrooms. The negative comments of staff members, as reported by the public health nurse, were not

out of the ordinary. Asynchronous change involving scarce human and financial resources, among competing interests, was unlikely to be universally accepted (Godel et al., 2000; Dimmock, 1996).

The Community Partnership Response

In an attempt to provide equal access to educational opportunities and to reflect the difference in culture of the Aboriginal students accommodations were made in the educational program offered to the students with FASD. These accommodations were an attempt to welcome the students into the community and to educate them with their age-appropriate peers. The schools utilized a number of elements to deliver the educational programs. Chief among these were a commitment to the philosophy of inclusive schooling, a team based approach to the education and support of all students, appropriate classroom teaching and management practices, staff development through training and instructional partnership, and awareness in the communities of the use of inclusive schooling.

The responses in this section are reported according to the role of each of the participants. The types of participants are parents, teachers, administrators, and DEA members.

Parents. As the first teachers of northern children parents have an important role in imparting the values, tradition, and language to provide a sense of cultural identity in their children. In this role they are assisted by grandparents and other family members. This traditional parental role has not changed in some northern families but in others the incursion of new ideas has brought challenges to imperil the Aboriginal culture (GNWT, 1993). It is only in relatively recent times that formal schooling has been offered in all

northern communities (GNWT, 1982). Many parents were brought up in a more traditional lifestyle living on the land for long periods and with little formal schooling. As a result they are frequently uncomfortable in the school setting. Consequently the relationship of parents with the community school may have been coloured by their lack of experience with formal schooling.

This type of discomfort may have been the cause of the lack of success the selective grouping teachers in the large school enjoyed with the parents of their students. The homes had rarely been contacted from the school with a positive message concerning their children. The teachers of the selective grouping classrooms decided to make a positive home contact at the first opportunity which occurred shortly thereafter when completed carpentry products were due to be sent home. The teachers integrated a photography session into the last carpentry class and taught the students how to take pictures with the school's digital camera. These were printed and each student took home his carpentry project and a picture of himself holding a completed project. The next day the teachers were released from their classes to telephone the parents and offer their congratulations eliciting a positive response from the homes.

In the mid-sized school the principal observed a willingness of the parents to become more involved in the school and the education of their children. This may have been due to the cohort of Aboriginal educators in the school who reflected community values and culture and may also have been mitigated by the principal herself who was Aboriginal, a woman, and from the community.

In each of the schools a greater parental involvement was desired. The challenges faced by students with FASD made a close relationship between the school and parent all

the more important. Unfortunately the homes of students with FASD were frequently still affected by the parental use of alcohol (Jester, Jacobson, Sokol, Tuttle and Jacobson 2000). This need not have been allowed to close down communication as all Aboriginal cultures of the NWT recognised the knowledge of the elders. Grandparents and other community members could be utilized to communicate with the homes where parents were reluctant become involved with the school (GNWT, 1993; GNWT, 1996a). The reaction of the parents to the lack of constructive policy following the publication of the findings of the study by Godel et al. (2000) indicated parental interest in programs that produced success for their children and an opportunity for the schools to open dialogue with the parents of children with FASD about their children.

Schools in the NWT were charged with the responsibility to reach out to their community (GNWT, 1996b). Coleman (1998) suggested this could be accomplished using a variety of approaches depending upon the context. The principal of the large school achieved some success in this undertaking by assigning male teachers to teach in the lower grades. Another strategy was the innovative adaptation of the curriculum in the selective grouping classrooms that was a success with the students and was supported by the parents. The teachers implementing the hands-on and on-the-land curriculum had little experience with the community, their profession, and the parents. Goodlad (in Decker & Romney 1992, p.42) opined that this was a common experience for teachers as they began their teaching career. This lack of experience was not the case in the mid-sized school where the principal utilized the local Aboriginal content of the staff to draw the community to the school. The alterations made to the curriculum to accommodate on-the-land experience were relatively minor allowing students that kind of experience one day

per month.   In this school, with a strong Aboriginal staff presence, such an approach could have been very successful with the students with FASD and also with their parents. As an espoused theory it offered little to the students or community and reflects a missed opportunity to bring the school and community closer. In the small school the population of the community allowed the staff to mix freely and to know and be known by everyone. The small population afforded the staff an opportunity to become familiar with the parents and other community members with relative ease.

Teachers. Examination of the role of the teachers was conducted using two approaches. The first viewed the teachers' role in the development of appropriate instructional program for the students. The second examined the efforts of teachers to collaborate with the parents of their students. These efforts were viewed in the locus of both informing the parents about the curriculum as well as the success or lack thereof, of efforts to involve parents in the educational activities of their children.

The interest of teachers in their professional duties was commented on by the Program Support Teacher in the large school. Donaldson (2001) suggested that teacher preoccupation with the program they were teaching was normal. In the schools in this study, the teaching staff demonstrated a keen interest in the delivery of programs within their classrooms that followed the mainstream objectives of the curriculum of the NWT. Classroom teacher concerns were expressed about student behaviours that impinged on the delivery of the classroom program and also the lack of parental support. In all of the schools the teaching staff was aware of a prevalence of students with FASD but lacked precise data. The Program Support Teachers in two of the schools saw the prevalence of students with FASD as a major problem but could not identify the precise number of

students with FASD. The smallest school had no confirmed data about the prevalence of students with FASD. The data made available by the study conducted in the largest school by Godel et al. (2000) were available to the Program Support Teachers and classroom teachers and were utilized in framing their opinions. Generally the opinions expressed concern about student behaviours, lack of understanding of personal space, and poor attendance. My researcher role involved me in discussions about these concerns bringing materials on at-risk students and extreme behaviours to the attention of the Program Support Teachers. They were then able to bring this information to the attention of their respective staffs.

Teachers were frustrated with the lack of parental support to address the problems created by the behaviours of students affected. The lack of parental support may be attributed to the lack of success many parents suffered while a student in school. This is the opposite to ideal parental response that creates a "power of three" effect as suggested by Coleman (1998). The teachers of FASD students viewed the "curriculum of the home" as a negative influence on the students. In all schools in the study the teachers were willing to collaborate with the parents but were, in many cases, new to the north with little understanding of the local culture. Consequently they enjoyed little success because they did not know how to effect this collaboration.

Teachers who had acquired a modicum of experience in the community did achieve some success in collaboration with the parents. The Aboriginal teacher in the mid-sized school was an exception to this generalization as she was aware of the local culture from the outset and had a number of years of experience teaching in the school. Her concern at the behaviours exhibited by her students prompted an examination of what

could be done to effect an improvement. The thrust of the discussion was to remove the

constraints of the classroom since the teacher felt her students responded well to the

school's on-the-land program. The use of greater on-the-land activities was one activity

utilized; another was to take her students on more frequent class outings to community

locations such as the airport or the fire hall. The students responded positively to the

increased out of classroom activities and the parents were enthusiastic about the on-the-

land program

The selective grouping was an area where teachers enjoyed successful relations

with the parents. The parents were drawn into their children's education because the

teachers engaged the students in learning the "curriculum of the home" (Coleman 1998).

In this case the parents had knowledge and expertise in the school curriculum. They also

valued the on-the-land initiatives as part of their family life (GNWT, 1993). At this time it

was apparent that the teachers had invoked Coleman's (1998) "power of three". The

successful on-the-land initiative also reduced the cultural and class differences that were

an impediment to parental involvement in the school (Fullan, 2001).

A final initiative that generated parental support was the assigning of male

teachers to the lower elementary grades. One of the teachers involved in this study was

originally assigned a grade two selective grouping classroom. The parents and students

responded positively to this development.

Administrators. The role of the administrators in the integration of students with

FASD was outlined in the NWT Inclusive Schooling Directive (GNWT, 1996) and also in

the Education Council mission statement and policies. The administrators in this study

responded in different ways to the integration of students with FASD. Renihan and

Renihan (1995) suggested this was due to the context of the staff in each school, and the relationship of each school to its home community and to the Educational Council.

In the Sir Alexander Mackenzie School the lengthening of the instructional day in the year of the study permitted the staff to allocate two afternoons each month to planning. The first planning afternoon was dedicated to grade level meetings allowing staff collaboration in curriculum planning. In the mid-sized school the administrator was a local Aboriginal woman whose experience in the community permitted her to establish improved relations with the parents. Springate and Springate (1999) suggested that from the improved relations the administrator would be able to engage the parents in improved dialogue.

The major thrust of the administrators in the study was to adjust the structure of their school to facilitate the integration of students with FASD. In the large school this involved the introduction of selective grouping classes with smaller numbers of students in these classrooms and a teacher teaching the class for a two years spell. In the mid-sized school the administrator adjusted the timetable to facilitate ability grouping for English language arts and mathematics. The students with FASD were then able to participate in classroom instruction at the appropriate ability and interest level. In these undertakings the administrators determined to deliver a school program to the students with FASD in the community schools with age-appropriate peers. This was to be accomplished in a secure nurturing environment reflecting the culture of the community and enhancing student self-esteem (GNWT, 1996a). This expectation was achieved although the methods of selective grouping used in the large school could have been viewed as a system of streaming. When asked about the observance of the Inclusive Schooling Directive (1996)

the principal was firm in his denial maintaining that the students were with their peers.

Levine and Lezotte (1990) suggested that this sort of grouping is a school-within-a-school

and of value to students with FASD. A system of "walking reading" and "walking

mathematics" in the mid-sized school permitted students to be instructed in those subjects

at their ability level but did not follow the Inclusive Schooling Directive (1996) for those

sections of the school day.

Parental input into the school function was again contextual. In the large school,

day-to-day contact with the parents of students with FASD was accomplished after some

initial difficulty by classroom teachers. This was not the case in the mid-sized school

where parental contact appeared to be largely an administrative purview. This may be

explained by the administrator being a local Aboriginal woman who felt she had strength

in the relationship enjoyed with her community. In the small community the principal's

newness to the community meant that established parental contacts were the domain of

the classroom teacher who had spent some years in the school. This classroom teacher

involved in the study utilized the relationships she had developed with the parents through

her involvement in the community to draw the parents into the school (GNWT, 1991)

Other community members. The knowledge and expertise of other community

members was often utilized by the schools in the study. The public health nurse who was

a frequent visitor to Sir Alexander Mackenzie School developed a body of knowledge in a

support person role on the students, parents, and staff. In Moose Kerr School the

community nurse partnered with the PST in developing ideas on how best to provide

services to the students in the school. The Royal Canadian Mounted Police (RCMP) were

also frequent visitors to all of the schools in the study providing professional assistance to

the administrators and their staffs and speaking to the students on a variety of topics. A common theme in all schools in the study was the alcohol and drug education programs in which the RCMP took a leadership role. The work of all of these professionals was an essential contribution to the development of social capital and the social infrastructure of the communities.

Other community members involved in the schools were elders, who cared for their grandchildren, and were frequently in the school because of this. Their presence was utilized because they reflected the community's linguistic and cultural make-up. This allowed the administration to engage elders to speak to the students on topics where their knowledge was of value. Examples of these are the telling of legends in language arts classes, stories about the early days of the community as part of the social studies curriculum, and traditional knowledge of the behaviour of local animals in the study of science. The use of elders in the classrooms of the schools permitted a connection between the school and community to be forged in the minds of the students.

CHAPTER EIGHT

SUMMARY, CONCLUSIONS AND IMPLICATIONS

This chapter presents a summary of the study including a review of the ill-structured problem, research questions, the methodology and the purpose of the study. Also presented are the findings and conclusions drawn from the study, a reconceptualization of the theoretical framework and a discussion of the implications of the study for theory, practice, and future research. Finally some comments and reflections on the study are presented.

Summary of the Study

The impetus for this study came from the publication of the results of a study conducted in the school where I served as an administrator. Godel et al. (2000) found that the cohort of students aged 9-11 years contained a significant number of children suffering from some form of prenatal alcohol injury. The results were a grave concern to the school staff, parents, District Education Authority (DEA) members and the general population of the community.

As the principal of the school at the time of the data gathering, and a long time northerner, I felt that I should have been more aware of the extent of the problem and furthermore, should have developed some administrative strategies to address the problem. Research on students with fetal alcohol spectrum disorders (FASD) provided a variety of suggestions for special needs teachers but almost nothing for administrators on efficacious methods to integrate students with FASD into their schools. This provided the desire to conduct research into what has been described as an ill-structured problem.

In the design of the study it was my intent to provide answers for administrators on the methods of enhancing school responses to students with FASD. Three principals in the northern school district, where I was employed, were willing to participate in the study. By chance, their schools were large, mid-sized, and small as were their communities. At the outset, I was interested in the approaches used by the three administrators as they attempted to integrate the students with FASD into their schools. The conditions in each of the schools were different due to the individual nature of the communities and the relative lack of contact between school staffs due to isolation. This, I believed, would demand that the schools would develop contextual solutions to their problems. I did wonder, however, if there would be any parallel solutions developed.

The study investigated the work of three administrators and their staffs as they attempted to solve the ill-structured problem of integrating students with FASD into their schools. A further purpose of the study was to investigate the role played by schools in influencing community responses that would enhance the post-school lives of students with FASD.

The purpose of the study was originally addressed through seeking answers to the following specific questions:

1. How did the three administrators work with the three northern schools to respond to the needs of the students with fetal alcohol spectrum disorders?

2. What were the procedures used by administrators in these schools to build and maintain a successful culture to address the needs of the students with fetal alcohol spectrum disorders?

3.   What changes were required in school structures to facilitate better response to the needs of students with fetal alcohol spectrum disorders?

4.   How did the schools work with their respective communities to respond to the challenge of the fetal alcohol spectrum students?

The study involved the concepts of Problem-Based Methodology (PBM). PBM permits the study of the search for the solution of ill-structured problems with their many decision makers, numerous alternative, competing definitions of the problem, and conflicting values for solutions (Dunn, 1991). The use of PBM also allowed the administrators to deal with their own problems and solutions, and to solve their problems using individual approaches. The solutions were judged for effectiveness using the four criteria to solve ill-structured problems. These were explanatory accuracy, effectiveness, coherence, and improvability.

The selection of participants for this study was restricted to the schools in one Northern Education Council. The principals were invited to participate in the study with the understanding that they could withdraw at any time. I made a presentation to the principals at their first principals' meeting and initiated discussion on the study and also answered questions. Of the nine schools in the school district, three were willing to become part of the study.

Data were collected by interviewing the participating staff and community members participating in the study. The specific context of the study, with the large geographic area of the school board, made data collection difficult. In some cases it was possible for me to travel to the community school, in other cases the staff members were travelling through the large centre where I was employed. Each principal was interviewed

both in Inuvik when on Education Council business and in their school. Due to time constraint, the principal in each school was the only person involved in the reflection meetings.

At the end of the school year of the study each principal was given a summary of their data with an explanation of my analysis and use of the four criteria for theory adjudication.   Since the principals remained in their administrative positions, I was able to continue communication with them and to observe their continued efforts to enhance the outcomes for students with FASD in their schools.

Conclusions

This study investigated the work of three administrators as they attempted to solve the ill-structured problem of integrating students with fetal alcohol spectrum disorders (FASD) into their schools. A second purpose was to investigate the role of schools in influencing community responses that would enhance the post-school lives of the students with FASD.

There were four anticipated responses in Figure 1. These were the effective schools response, the cultural response, the structural response and the community partnership response. They were utilized to frame the four research questions used to frame the discussion in this chapter.

How did the three administrators work with the northern schools to better respond to the needs of the students with fetal alcohol spectrum disorders ?

Faced with an ill-structured problem the administrators began by problem setting to identify the component parts and establish boundaries for their treatment. The data from the study by Godel et al. (2000) and community reaction demanded some type of

practical response on the part of the administrators and their staff that would better serve

the needs of the students with FASD. The lack of a regular system of screening and

diagnosis for children suffering with FASD was a constraint to any theory of action

designed to solve the ill-structured problem. The extent of the problem was ill-defined

although the publication of the data from the study by Godel et al. (2000) had established

the prevalence in a cohort of students in one of the schools. Unfortunately this data did

not precipitate a follow up of screening in either that school or others in the Education

Council. Consequently the administrators were faced with a loose constraint on a

proposed theory of action. They could not generate a clear perception of the magnitude of

the problem and without that perception they did not understand the problem.

In two of the schools there were small numbers of students who had been

diagnosed as suffering with FASD. There were also other students whom the

administrators and their staff suspected as being in the fetal alcohol spectrum. The

administrators and their staffs held these suspicions because of a number of reasons.

These were observed student behaviours, lack of academic achievement by these students

or due to local knowledge of maternal drinking during pregnancy.

My role as researcher allowed me to discuss the work of May and Gossage (2001)

who posited that the ratio of children with FAS to children with Alcohol Related Birth

Defects and Alcohol Related Neurological damage was 1:5. From this ratio it was

possible to calculate the estimated number of students with FASD in both schools.

Unfortunately these data were not precise since the baseline data of diagnosed children

with FAS had been developed by irregular screening.   Review of the studies by

Robinson, Conry, and Conry (1987) and Asante and Nelms-Matke (1985) suggested a

significantly higher prevalence was likely in Northern Aboriginal communities where alcohol abuse was coupled with a low socio-economic system.

Interpretation of the data from Robinson, Conry, and Conry (1987) and Asante and Nelms-Matke (1984), as well as that of Godel et al. (2000) generated a second estimate of the prevalence of students with FASD in both schools. The prevalence of students with FASD had now been established in a range of possible values. Although less precise than a prevalence established by a systematic program of screening and diagnosis, the approximate range of the prevalence and, with it, the magnitude of the problem, was established. A further concern of the administrators came from the analysis of the data of Godel et al. (2000). In the results, mention was made of a high prevalence of drinking during pregnancy. Associated with the exposure of these children to alcohol in utero were a number of physical abnormalities, difficulties with coordination and cortical function and, most particularly for the administrators, significant delays in language and mathematical achievement. Streissguth, Barr, and Sampson (1990) discovered that children of women who had five or more drinks per occasion during pregnancy were significantly lower functioning and poorer readers in first grade.

The administrators were aware that there were likely to be many more students with FASD in their schools. Unfortunately efforts at establishing prevalence did not permit the identification of the individual students afflicted. Consequently, actions flowing from the strategies to establish prevalence tended to attack the problem on a broad front rather than on an individual basis. This was most apparent in Sir Alexander Mackenzie School, where the study by Godel et al. (2000) had been conducted, and action was taken there as a means to explore the problem since the practitioners could not

adequately set the problem. The action of reducing class size in one of three classrooms in each grade was undertaken as a means of framing the problem with the use of feedback from the situation (Argyris, Putnam & McLain Smith, 1985). In Moose Kerr School the principal generated a collaborative approach to develop a small group instruction unit for the students diagnosed with FASD. In Inualthuyak School the new principal was comfortable with the reduced pupil-teacher ratio generated by the addition of another staff member. She used this resource to produce an individual approach to instruction in each of the three classrooms in the school. Another reason each of the administrators in this study reduced class size as an initial solution of this ill-structured problem was that this initiative was tacitly acceptable to the District Education Authorities, the parents, and teaching staff in each of the communities. The theory of reduction of class size resonated with the stakeholders and allowed the administrators to publicly test an idea that was neither important nor threatening (Argyris, 1982). Robinson (1993) posited this action had coherence with the belief system of all stakeholders. She would also suggest the small scale intervention as another consideration that allowed tighter analyses of cause and effect and provided more feedback for theory revision.

The direct approach was taken in Moose Kerr School where a small cohort of students, diagnosed with FASD, were placed in a class and instructed by a Program Support Assistant (PSA). In Sir Alexander Mackenzie School the selected grouping classes allowed smaller class numbers in two classes of at-risk students. In contrast the small class numbers in Inualthuyak School provided a natural in-house smaller class size in each of the three classrooms.

Efforts were made by the principals in Moose Kerr School and Sir Alexander Mackenzie School to level the ability groupings in their classrooms. This was contextual due to the differing size of the schools. In Moose Kerr School the students "walked" to English Language Arts and Mathematics. The selected grouping classes placed students with academic and behavioural challenges in a smaller class grouping. It should be noted that three issues identified by Nicholls (2002) as student characteristics were present in these selected grouping classes. The students were almost all academically challenged, had been identified as having behavioural challenges and in some cases emotional challenges, and the classes were heavily populated with males. The classes had the potential of being extremely difficult for teachers to manage without the selection of capable and creative classroom managers. An un-stated outcome of the selective grouping classes was the removal of the cohort of students who were both academically and behaviourally challenged from the other classes in grades 4 and 5. The remaining students in those grades, though in classes greater in number, did not have students with those combined challenges.

The instruction afforded the students with FASD was active and enriched. In Moose Kerr School, in a class of three, these students were instructed by a PSA. The planning was the responsibility of the Program Support Teacher (PST) who also oversaw the instruction. The students had some alternate activity, including preparing and delivering the in-school lunches, but a greater number of these activities would have been of benefit. The school timetable was organised to permit "walking Language Arts" and "walking Mathematics" so that a levelling of ability groups could occur. In Sir Alexander Mackenzie School the students in the selective grouping classes were exposed to

carpentry, cooking, on-the-land experiences and the possibility of extra physical education classes. One of the classrooms ran a small store where the students could make purchases using classroom "money".

The administrators in the three schools in this study were engaged in Model 1 behaviour as they attempted to learn new techniques that would assist in the search for a solution to the ill-structured problem. To do this, they believed that they should maintain a series of self-governing variables to provide stability while they were examining the problem (Argyris & Schön, 1974). By developing Model 1 behaviour the administrators developed changes that were small enough to permit their school to function with little disruption. By remaining within the confines of the theory-in-use the administrators were unlikely to be confronted with the validity of the goal or the value of any de-stabilizing changes. Argyris (1982) cautioned that while this was a safe option, it guaranteed the absence of double-loop learning.

In each of the schools in the study the administrators faced a lack of data on the prevalence of students with FASD in their school. Initial efforts were to establish an estimate of the prevalence which, due to the lack of screening and diagnosis, was conducted on a broad front providing data on the estimated prevalence without the benefit of specific student names or cases. Following this initial exercise the administrators worked with their staffs to reduce the size of the instructional units for the students with FASD. This initiative was a way for administrators to seek feedback from a minor intervention and allowed them to more effectively frame the ill-structured problem. Other initiatives within the schools were the levelling of instruction and the promotion of active and enriched instruction in an effort to engage the students with FASD. In these initiatives

the administrators worked collaboratively with their staffs and enjoyed largely positive feedback from each group.

What were the procedures used by administrators to build and maintain a successful culture that addressed the needs of the students with fetal alcohol spectrum disorders?

Part of the administrative responsibility in the three schools was to provide leadership in two areas of culture. In the first area they were responsible for the establishment and maintenance of a positive school culture. The Education Board charged that this be accomplished by co-operative development of school goals, plans and policies to facilitate partnership with stakeholders. In addition to the responsibility for the development of meaningful programs in the classrooms of their schools the principals were also responsible for the development and delivery of a culture-based program to complement the school program (GNWT, 1996b). Part of this culture-based program was delivered through the Aboriginal language program in all three schools. The other part of the program is to be delivered by teachers as an integral part of their classroom program.

The initial difficulty facing the principals was their lack of cultural knowledge of the community. They required exposure over time to become knowledgeable about and to adapt to the culture of the community. As a local person, the principal in Moose Kerr did not suffer from this handicap. However teacher turnover in her school was higher than in the other schools in the study and each year teachers were hired who were unaware of the local Aboriginal culture. This obliged the principal and her Aboriginal staff to maintain an ongoing program of acculturation for the non-Aboriginal staff members. This process, while repetitive due to teacher turnover, was delivered by a strong cohort of local

Aboriginal staff members and did encourage early cultural awareness of the school and community.

In the schools I viewed the organizational culture as being driven by attention to the standard curricula. The NWT has adopted the Western and Northern Protocol for Language arts, Mathematics, and Social Studies and the Pan Canadian Science curriculum. This suggests that the largest part of what is taught to northern students was generated in southern Canada. Firestone and Louis (1999) opined that educators seek legitimacy by adopting the appropriate forms and codes. They continue to remain within these confines despite limited success because they can be seen to be working at a "real school". The schools in this study espoused a theory that reflected the importance of local Aboriginal culture but this was not congruent with the theory-in-use. With little time or energy allocated to the Aboriginal culture outside the mandated Aboriginal language classes the schools had a theory-in-use emphasizing academic learning. Argyris and Schon (1974) posited that group reinforcement from classroom teachers maintains such a theory-in-use. It also prevents individual teachers from attempting to learn by stepping outside of the theory-in-use because of the negative group response this behavior invokes.

The teachers in the selective grouping classrooms were set apart from the mainstream group of classroom teachers because their students were academically challenged and also demonstrated a variety of extreme behaviors. The teachers observed that the students found it very difficult to remain still in the classroom. Using this observable data, and the meaning embedded in the data, these teachers moved to define the problem. Argyris (1982) viewed theses initiatives as the first two rungs on the ladder of inference. From this beginning, the sub-group of teachers constructed their own

theory–in-use to provide a solution within those constraints. Robinson (1993), viewing through the lens of the Theory of Change of PBM, suggested that the teachers had a motivational thrust provided by their desire to solve a problem that was unacceptable to the participants. The students in the selective grouping classes in Sir Alexander Mackenzie School responded positively to the alternate program and, often for the first time, had success in school.

The administrators were responsible for a positive school culture developed through partnership with all of the stakeholders in the school and community. They were also responsible for the development and delivery of a culture-based program delivered in the classrooms of their school. The demands of the curriculum combined with the background of most classroom teachers meant that the emphasis in the schools was biased toward the delivery of an academic program. This placed Aboriginal students at a disadvantage as they were learning in a culture that was not their own. The students in the selective grouping classrooms were academically and behaviorally challenged and had enjoyed little school success in regular classrooms. The introduction of the on-the-land emphasized a cultural curriculum that they understood and valued. This engaged the students in learning and afforded them success in school.

What changes were required in school structures to facilitate better response to the needs of students with fetal alcohol spectrum disorders?

The efforts made by the administrators of the three schools to integrate the students with FASD involved academic and curricular re-structuring to enable those students to enjoy a more meaningful educational experience. While the re-structuring was

largely school specific there was a general effort to alter the school structure to accommodate the students with FASD.

The first response of the administrators was an initial examination of context to develop some understanding of what the problem entailed. They were faced with a messy situation and upon first examination could not readily view all of the elements. The administrators' task in this problem setting phase was to identify a number of the elements, some possible solutions and develop a theory in action that would work within this constraint structure (Argyris & Schon, 1974). At this early point in the ill-structured problem two of the administrators implemented a conscious strategy of reducing the instructional units of the students with FASD. Argyris, Putnam and McLain Smith (1985) suggested this was action to produce information to inform the design of future action. The administrators were endeavouring to frame the ill-structured problem by seeking information.

Robinson (1993) argued that educational problems, when formulated on a modest scale, enjoy both psychological and practical advantages. In her opinion the ability of educators to gather and process information is better suited to the modest format. This allows tighter analyses to identify the precise causes of the problem and the generation of feedback essential for theory revision. The first "small problem" approach involved reducing the size of the instructional units. In Sir Alexander Mackenzie School this was accomplished through selective grouping classrooms, in Moose Kerr School by providing a separate instructional group for students diagnosed with FASD and in Inualthuyak School by maintaining classrooms with and average student population of 10.

Following the introduction of smaller instructional units the administrators and their staffs continued to address the ill-structured problem in a series of modest formats. One of the first of these was to alter the curriculum of the students with FASD. Examples of this type of amended curriculum are the on-the-land and carpentry programs in Sir Alexander Mackenzie School and the specific programming by the PST in Moose Kerr School that was delivered by a PSA. Another modest format change was exhibited in their efforts to develop a better concept of the prevalence of the students with FASD in each school. While their efforts were not precise they did give each administrator a clearer picture of the magnitude of the problem

The strategy of breaking the ill-structured problem into smaller, more manageable pieces was appealing to the administrators at the outset. Since the schools and communities were different they had difficulty in framing a theory of the problem. It also made a comprehensive approach of pooling and sharing information impossible. Fortunately the administrators and their support staff were familiar with isolation and in developing local approaches to their problems. They had difficulty in establishing a theory of the complete ill-structured problem so they began by altering parts of the problem that they could understand. Simon (1974) suggested this type of approach, proposing that the problem solver create the opportunity to achieve a coherent solution through solving a series of small problems. From that perspective the small victories reduce the importance of the problem, make the demands more manageable, and raise their perceived skill levels as problem solvers.

The major structural response in Sir Alexander Mackenzie School involved removing a cohort of at-risk students from the mainstream and placing them in selective

grouping classroom. The students were in Grades four and five and had enjoyed little

success in school prior to this change in class structure. The new classroom structure also

placed the students under the control of one teacher for two years. The longer period with

the classroom teacher, supported by an alternate curriculum as a learning stimulus for the

students, provided an opportunity to establish social bonds with their teacher. Edwards,

Danridge and Pleasants (2000) have suggested the combination of a re-structured

classroom and the supportive interpersonal relationships with their teachers made

initiatives such as these successful. The wide range of extreme behaviours demonstrated

by these students was one of the major reasons that the first-year teacher felt obliged to

generate an alternate curriculum. Faced with hyperactivity, distractibility, reduced

attention spans, apathy and withdrawal, he looked for a curriculum that would allow his

students to move about freely. Through engagement in double-loop learning, posited by

Argyris and Schön (1974), he looked for a vehicle to provide movement while learning.

This search led him to the on-the-land program giving the students success in school.

Lenarduzzi (1992) offered the opinion that success in alternate programs such as the on-

the-land program was due to an engagement factor for the students, providing a strong

motivator for them to continue their participation in school.

In Moose Kerr School a number of re-structuring initiatives allowed the diagnosed

students with FASD to enjoy improved integration in the school program. These students

were placed in a small class with the PSA and were afforded more individual attention

than would have been provided in a regular classroom. These students were also involved

in the school lunch program as a way of learning life skills and improving their self-

worth. The involvement encouraged development of social bonding to hold the students

with FASD in the realm of the school. Another method of social bonding was pairing the students with FASD with responsible students who acted as a role model. Wehlage al. (1989) suggested such peer bonding gives the students with FASD the opportunity to participate willingly as school members.

In the schools in the study, there was a redistribution of resources that allowed for a positive integration of the students with FASD. The students in Inualthuyak enjoyed an exceptionally low class size with three classroom teachers, a half time Aboriginal language teacher, and PSA teaching approximately 30 students. This allowed the staff to deliver individual instruction in small class groups of fewer than ten students. In Moose Kerr School the cohort of students diagnosed with FASD received instruction in a small class under the supervision of the PSA and PST. Sir Alexander Mackenzie School was involved in a major distribution of resources by creating the selective grouping classes of approximately 15 students and two other classes of approximately 30 students in each of two grades. The allocation of resources to students with FASD was an attempt to redress the balance of educational opportunity as proposed by Rawls (1971). Rawls (1973) suggested that the students who are less favoured should be allocated greater resources to offset their lack of long-term opportunity. The differential nature of this allocation of resources was accepted by the staff and parents with relatively little negative comment.

The context of each school and community varied, preventing the administrators from applying a general approach to the problem. Consequently minor structural changes were made by the administrators as they attempted to frame the ill-structured problem. A major structural change in Sir Alexander Mackenzie School involved the establishment of selective grouping classrooms. This reduced the size of the instructional unit and placed

the students with the same teacher for two school years. In Moose Kerr School smaller

instructional units were achieved by placing the student diagnosed with FASD in a small

class under the care of the PSA. In both schools the curriculum was re-structured to

introduce cultural and life skills as a means of engaging the students in learning.

How did the schools work with their respective communities to respond to the challenge

of the fetal alcohol spectrum students?

Responses in this category are reported according to the participant groups. The

groups are parents, teachers, administrators and District Education Authority members.

Parents

The lack of involvement by parents in this study was a major setback. However it

may be as a result of their experiences in school that the parents of the students with

FASD were unwilling to be drawn into involvement with the school. The Inuvialuit

believe that education should be child-centred and involve all the senses with active

participation. It should also be culture-based with the parents involved in the experience

(GNWT, 1996a). The parents were willing to be drawn to the school when the selective

grouping students were involved in on-the-land experiences. Coleman (1998) posits that

the "power of three" was brought into play at that time with the students, parents, and

teachers being drawn together.

In Moose Kerr School the principal felt that the parents were more responsive to

the school and willing to discuss the education of their children. However, neither she nor

I could persuade a parent of the diagnosed students with FASD to participate in the study.

The classroom teacher, while supportive of the school and the initiatives taken to draw the

parents into the school, expressed concern about the breakdown in family life in the community and increased difficulty the school faced in reaching out to the community.

Teachers

In their instructional role teachers were challenged by the lack of formal diagnosis of students with FASD. While they delivered the mainstream program and had concerns about behaviours of numbers of their students, they were unable to identify students with FASD and also unable to design programs for these students.

The integration of students with FASD into the schools depended on staff understanding of the value of a school-wide approach. This realization was forced upon the administrators by the lack of specific information they possessed concerning the students with FASD. Faced with a shortage of information the administrators needed the knowledge of the staff to attempt to solve this ill-structured problem. Argyris, Putnam and McLain Smith (1985) suggested that this knowledge was inter-subjective and could be used to frame the situation in light of the community of practice of each staff. In each of the schools in the study the teaching staffs were involved in developing a solution. This collaboration produced a pool of knowledge and consequently a theory of professional practice used to develop efforts to integrate the students with FASD into the schools. As this knowledge was being developed the administrators displayed leadership by translating the theory of professional practice into action to address the problem

The strategies developed from the measure of the collaborative decision making were shaped by the context of the school and community. In schools the measures were constrained by the size of the school and the expertise of the school staff. Major strategies, such as the reduction of instructional units or the levelling of instruction for

students with FASD, varied in thrust and application. Each school situation was distinct with different reasons for the strategy, an application unique to the school, and results reflected by these differing contexts.

The teachers of the selective grouping classrooms enjoyed some success in bringing the parents into the education of their children. The parents had an interest in the on-the-land program and also had an expertise in that milieu. In this case the teachers engage the students in the "curriculum of the home" and drew the parents into the education of their children. This program enabled the teachers of the selective grouping classes to begin to break down the barriers of ethnicity and class that prevent school community relationships in northern schools.

An incidental strategy that engaged the parents of students with FASD was the use of male teachers in the elementary classrooms. This was introduced in Sir Alexander Mackenzie School to place the second year teacher with a class requiring a teacher with strong classroom management. When he assumed his position the teacher provided this type of approach and the students responded. As the parents became aware that their children were enjoying the experience of a male teacher they became more involved in the education of their children.

In the year of the study the same teacher became the mentor for the first-year teacher. There were now two male teachers who had responsibilities in the selective grouping classrooms. The teachers also introduced an alternative curriculum that generated a great deal of parental response. The on-the-land program, in particular, brought the "curriculum of the home" to the classroom. This allowed the parents to share their knowledge and expertise with the teachers and their children.

Administrators

The administrative role in the integration of students with FASD was contextual but bound by the Education Council mission statement and policies. The measures adopted to integrate the students with FASD into the community were also contextual in that they were contingent on the community knowledge held by the administrator. This varied between an administrator who was completely familiar with the community, an administrator with some years of experience in the community, and an administrator recently arrived in the community and attempting to gain an understanding of the local culture. Argyris, Putnam and McLain Smith (1974) suggested community knowledge is practical knowledge that is relevant for the practitioner in forming purposes.

The administrators were obliged to reach out to the community because of their responsibility under the Education Act of the NWT (GNWT, 1996b). This responsibility precipitated a theory-in-action in each of the schools in the study utilizing Model 1 behaviours with the administrators designing and managing this environment unilaterally (Argyris & Schon, 1974). However the measures taken in the community were shaped by the extent of the knowledge of the administrators and the belief systems of the community members. To the administrators this suggested that all interventions with the community were difficult due to the power and control held by many community members and the possibility that they would reject the intent of the intervention (p.72). The administrators proceeded cautiously often using the elders to guide and support their interventions (GNWT, 1996a).

The administrators moved collaboratively in their efforts to integrate the students with FASD into their schools and communities. They attempted to develop this approach

with the staff, local people and particularly local elders. The strategies developed from this collaborative thinking were relatively straightforward and designed to be accepted in the local community.

The major thrust of the administrators was to adjust the structure of their school to enhance the outcomes for the students with FASD. The principal in Moose Kerr School had a strong belief that her relationship with the FASD parents was based on trust largely due to her Aboriginal status within the community. The duty of the administrators to establish and promote a community outreach from the school determined that the administrators would seek to communicate with community members. The principal of Moose Kerr School established this communication upon her arrival in the position. Despite having a Program Support Teacher (PST) this principal established and promoted dialogue with the parents of diagnosed students with FASD concerning the welfare of those children. As a local Aboriginal woman this type of communication came more easily to her than the other principals in the study. They too were involved in establishing communication with all parents and particularly those of students with FASD. The principal in Sir Alexander Mackenzie School did utilize the expertise of his PST but was also involved in communication with the parents of students with FASD. In Inualthuyak School, during the year of the study, the principal developed a network of communication with the parents through informal contacts both in the school and elsewhere in the community.

The most efficient dialogue was clearly that of the Aboriginal woman who as a principal in her home community enjoyed the benefits of local knowledge and acceptance.

In the other communities the principals were obliged to establish relationships with the

community as a whole and also with the cohort of parents of students with FASD.

District Education Authority Members

Input was received from a past District Education Authority (DEA) chairperson.

She had an interest in the study from her familiarity with the findings of the Godel et al.

(2000) study. The past chair believed that the hiring practices of her DEA and others in

the Education Council were flawed. In her opinion teachers who were trained in special

needs were the prime candidates for the classrooms in her community. This she felt would

prevent the shock caused by the new challenges and behaviours observed in the

classrooms by new, regularly-trained teachers. When I suggested that this had not been

the case during her tenure as Chair of the DEA the former Chair agreed but argued hiring

had been a team effort and her ideas could not hold sway with the Hiring Committee.

The lack of involvement of the parents in the schools was a major detriment to the

education of the students. The parents had frequently enjoyed little success in school and

did not see its relevance. The on-the-land experiences offered to the students in the

selective grouping classrooms provide a vehicle for parental interest as they viewed this

initiative as important. Classroom teachers were willing to work collaboratively to

generate solutions to the ill-structured problem of an increased cohort of students with

FASD but were frustrated by the lack of data on formal diagnosis of their students. The

administrators were aware of the positive attitudes displayed by their staff and initiated

collaborative efforts to integrate students with FASD into each school. Less success was

achieved with parents and other community members due to the administrators' lack of

knowledge of the local power bases. An exception to this was the Aboriginal woman who was a principal in her home community.

Reconceptualization of Knowledge Management

The conceptual framework developed in Figure 1 explored the ill-structured problem of the integration of students with FASD into northern schools with an outline of the problems created by the students and the appropriate responses described in the literature. The school was situated in the conceptual framework between the problems and responses. The problems were classified as prevalence of FASD students, behaviour and achievement, at-risk students, and community/school attitudes. The appropriate responses were effective school response, school culture response, structural response, and roles and responsibilities of the participants. The elements do not relate to each other in a linear fashion but are more inter-related and in some cases non-related. The school culture and structure are inter-related, with components of school structure in the effective school response. In the problem field, information on the prevalence of students with FASD was insufficient due to the lack of diagnosis in the area. There was also an unwillingness of the parents and community members to be involved with the school and also involved in the study. Furthermore the representation of problems and responses in Figure 1 suggests that the school will be the centre of information in this study. This may have been a negative factor for many community members and parents allowing them to opt out of their responsibilities to their children and grandchildren.

Figure 6 depicts northern Aboriginal beliefs more accurately, using the circle of belonging to describe a better linked relationship of the stakeholders in this ill-structured

Figure 6. Circle of belonging to support students with FASD in northern schools
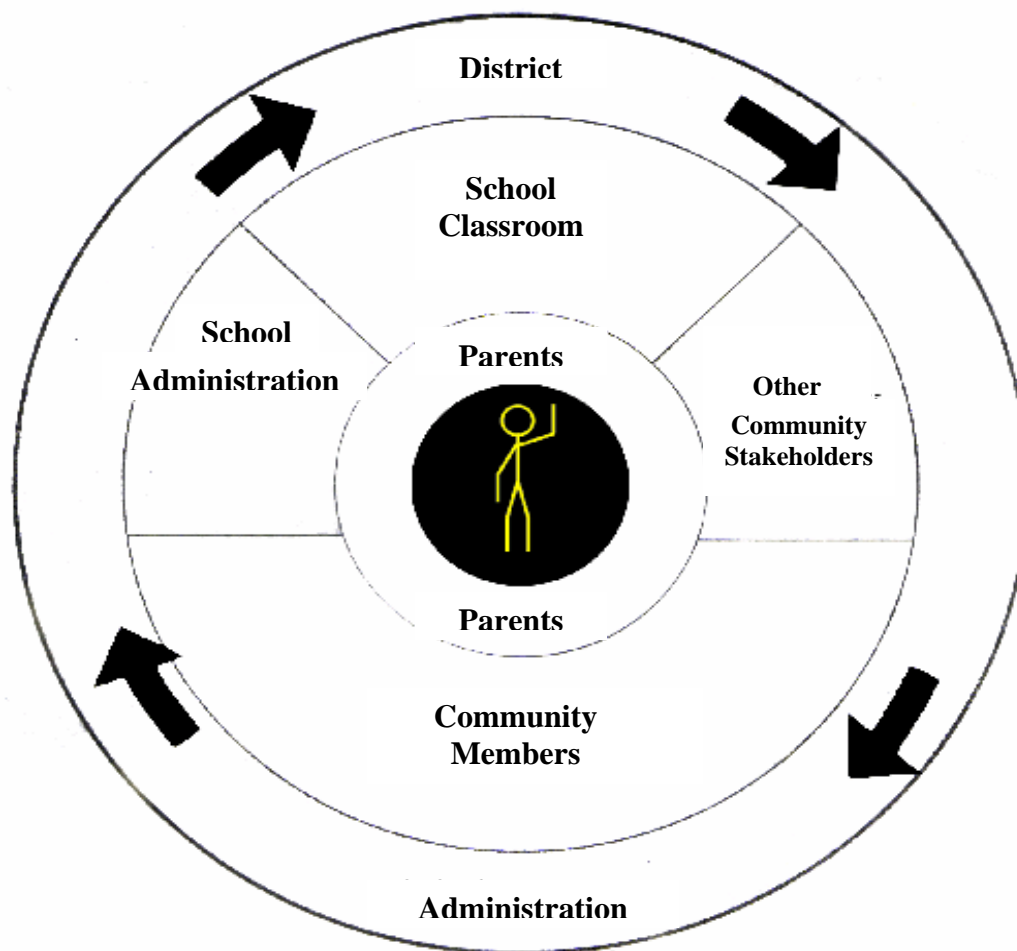
problem. The child with FASD is placed in the centre of the concentric circle emphasising the central importance to be afforded that individual. Immediately surrounding the child are the parents who are responsible for the first line of care given to the child. Surrounding the parents are a number of stakeholders who provide inter-related support. One of these stakeholders is the teacher who provides a culture of caring, an effective program, positive contact with the homes, and embody many of the classroom responses demonstrated in the study, including the alternate programs.

Sharing the circle are community members who are close to the parents and child, as well as known to the teachers. They must also maintain a relationship with the teachers and, in the event that the child's parents cannot fulfill their obligations, the teachers will utilize the relationship with the grandparents or other responsible elders in the community. In their role the community members are charged with imparting the values, traditions, language, and cultural identity to the child. Also sharing this circle are other professionals and care givers in the field of health, social services, and law enforcement as well as the school administration. The school administrators work to maintain an effective school with a structure that responds to the needs of the students with FASD. Aboriginal culture and a positive community outreach would be actively promoted by the school administrators. In the outermost circle is the administration of the Education Council. These stakeholders are responsible for communication with the DEA and to ensure adequate financial resources are available for the students with FASD.

In this reconceptualizaton of knowledge the emphasis has been taken from the school where it was centred between problems and responses. The child is now in the centre of what happens in the school, supported by parents and a caring teacher who has a program specific to her/his learning needs. Part of this program will be on-the-land to draw the parents into the program because of their interest in this facet of Aboriginal culture. The on-the-land facet of the program will also be of great interest to the child.

Implications

The implications emerging from this study are discussed under three headings. In the first section the implications for theory in the integration of students with FASD into northern schools is discussed. Discussion in the second section examines the implication

for administrators in northern schools. The third section suggests directions for future research in the area of the integration of students into northern schools.

Implications for Theory

The creation of communities of enquiry embedded in the practice of Northern teaching suggested a need to select a problem within the information-seeking and processing capabilities of the participants (Argyris, Putnam, and McLain Smith, 1985). A major constraint to this theory in action is that the problems formulated are frequently ill-structured with multiple solutions, solution paths and sometimes no solution (Robinson, 1993). The identification of the integration of the students with FASD into northern schools as an ill-structured problem became evident with the difficulty experienced in identifying the problem in Sir Alexander Mackenzie School in the years prior to the publication of the Godel et al. (2000) data.

Problem Based Methodology was an appropriate vehicle to address the study of the integration of students with FASD into Northern schools. The isolation and lack of professional resources in Northern schools demanded that staff create conditions that are conducive to inquiry and learning. It was evident that the solution to this ill-structured problem had to be created in the schools using their own resources. Their everyday practice generated pragmatic explanations concerning practical issues of control and responsibility within their own domain. This continuous stream of acting to reflecting and consideration of future action is described by Schon (1983,) as a "reflective conversation with the situation" (p.163). Consequently they had some experience of the integration of theory and practice to provide solutions to practitioner's problems.

The study by Godel et al. (2000) had focused the ill-structured problem in the school. The study was conducted by health professionals, although in the confines of Sir Alexander Mackenzie School, with the subject of the study a cohort of the school's students. When the data were reported, the ownership of the problem belonged to the school. Community and parental response to the data from in this study further suggested that the schools would continue to remain the owners of the problem. This causal explanation may have been generated by a variety of conditions that had a good fit with the purpose at hand (Argyris, Putnam, and McLain Smith, 1985).

Assumptions surrounding the role of contextual factors caused by the heterogeneous nature of the schools and communities are misleading. It is clear that the administrators and their staffs developed their initial solutions through similar theories of action. In each school, the reduction in size of the instructional units was the first solution to the ill-structured problem. Lack of congruence between espoused theory and theory-in-use is, I suspect, a factor in the theory-in-use for professional practice in education which places great strength in reduced class size (Argyris & Schon, 1974). Consequently while the contextual factors varied amongst the participating schools the administrators began by utilizing similar solutions to ill-structured problems that were dissimilar. This would indicate that the contextual nature of the ill-structured problem was less important in seeking a solution than the constructivist approach preferred by the participants. In this study the administrators began to construct their solutions using a similar approach because of their similar beliefs.

The lack of screening and diagnosis was a major challenge to stakeholders requiring a complete definition of the problem. In this study the extent of the problem

and the number and size of the issues that confronted the professionals providing service to the students with FASD was incomplete. The assumption is that administrators and their staffs benefit by having at their disposal all of the information available to provide a solution to the ill-structured problem. The lack of screening and diagnosis served to compound the problem. In the absence of diagnosis further confusion was caused in the schools by mislabelling of students with other behavioural challenges.

Lack of diagnosis also served to diffuse the urgency of the problem. Given that so few of the students with FASD were diagnosed, the problem was not seen as urgent. The data generated by Godel et al. (2000), and in other Northern studies (Robinson, Conroy, & Conroy, 1987; Asante & Nelms-Matke, 1985), suggested prevalence higher than the national norm and that this was an urgent problem. The introduction of a systematic approach to screening and diagnosis would generate the data required to demand organizational and professional focus. The generation of this data on the prevalence of children with FASD in northern communities is not an educational responsibility. It belongs to the health professionals who service these northern communities. In the absence of such a program of screening and diagnosis, northern educators will, I suspect, be exposed to a higher prevalence of FASD than is reflected by the diagnosed students in their schools

In schools in the Northwest Territories (NWT) there will be the ill-structured problem of the need to represent two cultures in one school. This study found administrators and their staffs were active in constructing academic values. The cognitive processes involved in simultaneously satisfying the intellectual and cultural aspirations of the students, parents, and other community members generated Model 1 behaviour.

Dealing with the academic culture participants generated a professional theory-in-action posited by Argyris and Schon (1974) containing the rules, organizational structure and policies that control the outputs of the professional situation. Argyris, Putnam and McLain Smith (1985) suggested that the action propositions of the school culture were not congruent with those of the home culture. Consequently Aboriginal values and learning experiences were not integrated into the classroom save in a very superficial manner. The students had learned to learn in different ways than the teachers had learned to teach. Model 1 behaviour was generated by teachers who continued to teach as they had learned, despite being aware of the different culture of the students

The community culture is contextual, reflecting the cultural identity and relevance to the world as viewed through the eyes of local community members. In most of the communities this is the Aboriginal culture of the north and the learning style of the children is part of that culture. Education provides the skills, knowledge and perspective that will allow the child to survive in the local and distal communities. The required skills and knowledge are learned through repeated exposure to experiences with the child learning at an individual pace (GNWT, 1993). There is also a strong belief that Aboriginal people belong on the land. They hold that the child should develop an understanding of the importance of the land and the skills for survival in that harsh environment. These are matters to be taught to the child and parents and elders want the school to reflect this priority (GNWT, 1996a).

One of the goals of the study was to develop programs and procedures to encourage parent and community involvement in the school (GNWT 1996). In each of the schools in the study a greater parental involvement was desired although this was found

difficult to achieve. The use of grandparents or other community elders allowed

administrators and teachers to contact the homes of the children with FASD and to report

the child's progress. It is also worthy of note that many parents want to be involved in the

education of their child but, having little formal education, felt out of place in a school.

The culture of the school is an integral part of what inhibits the community members and

requires the administrators to accept and amend the dysfunctional policies (Argyris,

Putnam, and Mclain Smith, 1984). This type of change is Model 2 and, I suggest, will not

be easily achieved in any school. However as evidenced by the on-the-land curriculum the

development of cultural programs and positive community strategies would allow the

parents to feel more at home with their child's education. The use of such strategies that

appeal to parents should be considered by administrators to draw the parents and other

community members into the education of their children. By accomplishing parental and

community interest in the school the administrators and their staff will be afforded an

opportunity to establish the school as an important contributor to community life. All

community members would then have an opportunity to take ownership of the local

school - students, parents and grandparents – as well as the school staff and other

community professionals.

Implications for Practice

New principal orientation often focuses on a brief overview of the NWT

Education Act (1996) and a cursory review of Education Council regulations. Further

insights may be given to the candidate of the administrative manual, the prescribed

curricula, and school budgets before the candidate is rushed out to their school. Induction

of the new administrator may be provided by a colleague who is an administrator in

another school in the Education Council through a relationship established and maintained by telephone and electronic mail. The lack of support for the administrators in this study suggest that the mentors selected for new northern administrators have an understanding of the problems involved in integrating students with FASD into northern schools. Induction should focus on describing the existing problem and providing an overview of the findings of this study. Given that the schools in the study found their responses to the problem contextual it should be acceptable for each administrator to frame an individual response to the unique school and community problems.

Administrators who have previous experience in northern schools lack the benefit of a mentor. They can compensate for the lack of mentoring support byb the use of their experience in the development of suitable responses to enhance the outcomes of the students with FASD and to involve the community in this strategy.

Altering the school structure was viewed by the participants as an efficient way to bring more resources to the students with FASD Reduction in class size was considered an important structural change that provided increased individual and small group attention to students with FASD. If this is to be accomplished, the early years of elementary school will provide the best results in cognition, discipline and in engaging the students in participative learning (Achilles, 1999). This type of class reduction allows students to enter program support program early. Nicholls (2002) warned that the composition of students in the class is also an important factor. School structure may be altered by leveling ability groups through coordinating the classes in a discipline. This requires a relatively minor timetable adjustment in most northern schools.

The results of this study suggest that administrators in northern schools should instruct teachers to develop programs to be delivered with hands-on activities for the students with FASD. Emphasis on the use of on-the-land experiences is a natural way to accomplish this and also provides a vehicle to teach the children in their own culture, learning style, and lifestyle. The outreach to the parents may be generated with greater ease if the teachers involve the children in activities to which the parents can relate. These activities are frequently to be found on the land and in other cultural and community avenues.

There is a major need to draw the parents into the circle of caring for the students with FASD. They are the best advocate for the child and are the people most knowledgeable about the child's behaviour outside school. Administrators and teachers should be aware that parents may be reluctant to become involved in their child's schooling and the historical reasons for this. However they should also realize that the attitude of the parents can be changed by administrators and teachers making coordinated efforts to change this thinking. This study produced a number of ideas that are useful for practice. One of them was the selection of a male teacher in the lower elementary grades which was well received in a community. Another was a new teacher introducing herself to the community members as she moved around the community during her first term. The use of community feasts is common in the north and is an excellent way to bring everyone in the community together. It is important that all staff members attend the feasts if they wish to use the opportunity to meet the community members.

The lack of formal diagnosis will continue to be a challenge for northern administrators, teachers, and DEA members. The absence of clinical diagnosis for

students with FASD does not preclude the use of the suggested implications for practice
since many of the students suffering from similar challenges to FASD will also benefit
from these solutions. The danger of labeling is ever present and educators and other
community members must exercise discretion in how they describe children without the
benefit of clinical diagnosis. DEA members have a political role to play in this problem
by advocating for screening and diagnosis. It will be by their acumen that the various
levels of governments attend to what is a serious and preventable problem. It is within the
power of each DEA to enter partnerships with other with other government authorities to
facilitate and enhance the outcomes for children with FASD.

Implications for Further Research

The results of this study draw attention to the lack of research available on
northern schools and communities. The following are research topics that may help
illuminate the ill-structured problem of an increased cohort of students with FASD

1. This study had no parental participation. A future study on the
integration of children with FASD may well benefit from the input of
this stakeholder group so that we may more clearly define the children's
difficulties and challenges.

2. Research needs to be done into the reluctance of northern parents in
general to become involved in the education of their children. This would
be useful to all northern educators.

3. A study would be helpful in this context into the attitudes in northern
communities about responsibility toward the health and welfare of

community members. This would be an attempt to clarify the extent of reliance on outside dependency.

4. Further examination of the optimal administrative approaches to integrating students with FASD into northern schools. If the approaches are contextual there must be a wide variety of approaches as well as some overlap. A database of approaches would be useful for administrators to track the approaches frequently and rarely used.

5. A study on the aptitude of northern students in all forms of hands-on learning would provide insights to the learning styles of our students. While examining the success of the students the study could also look at the attendance levels, attitudes to learning and discipline problems in providing these learning opportunities.

<div align="center">Concluding Comment</div>

The study investigated the work of three administrators and their staffs as they attempted to solve the ill-structured problem of integrating students with FASD into their schools. A further purpose of the study was to investigate the role played by schools in influencing community responses that would enhance the post-school lives of students with FASD. The study gave insights into the nature of the challenges faced by administrators and provided a picture of their approaches and solutions to the outcomes of this integration. It has shown that the administrators were obliged to deal with the local context when addressing the challenges of increased cohorts of students with FASD.

The isolation of the schools in the NWT makes access a constant problem. If I were to repeat the study I would conduct research in one school throughout a school year.

This would allow easier gathering of data and permit re-visits to discuss and follow up on the ill-structured problem. With extra time in the school I could involve everyone in the school in the research who indicated interest. During the study I was obliged to make decisions on where I would go and who could be interviewed in a particular time frame

The use of problem-based methodology was a good fit with the ill-structured problem of the students with FASD and also with the culture of northern schools and communities where collegiality is common. Another consideration was the ease with which problem-based methodology can be utilized in isolated schools. This allowed northern educators to attempt to solve their own problems within the confines of their own school and community. These were northern problems solved by northerners.

The study has been a factor in the examination of administrative practice in schools in the Education Council. The ill-structured problem is still with us and the administrators are involved in a contextual approach to a solution. The results of the study are available to all of the administrators and are of use when framing their local response. Unfortunately, teacher and administrator turnover remains at an unacceptable level in many schools in the north, forcing incumbents to address the problem anew with the beginning of each school year.

References

Alcohol Related Birth Injury (FAS/FAE) Resource Site (2001). *Health care professional center: Effects of alcohol on the developing fetus.* Retrieved October 3, 2001, from http://www.arbi.org/education/education.html

Argyris, C. (1982). *Reasoning, learning, and action*. San Francisco: Jossey-Bass

Argyris, C. (1991). Teaching smart people how to learn. *Harvard Business Review, May-June, Reprint No. 91301*

Argyris, C., Putnam, R., & McLain Smith, D. (1985). *Action science*. San Francisco: Josey Bass.

Argyris, C., & Schon, D. (1974). *Theory in practice: Increasing professional effectiveness*. San Francisco: Jossey-Bass.

Asante, K. O., & Nelms-Matke, J. (1985). *Report on the survey of children with chronic handicaps and fetal alcohol syndrome in the Yukon and northwest British Columbia.* Whitehorse, YT: Council for Yukon Indians.

Astley, S. J. (2003). FAS/FAE: Their impact on psychosocial child development with a view to diagnosis. In: R.Tremblay, R. Barr , RDeV. Peters, (Eds.) *Encyclopedia on Early Child*hood Development [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development. Retrieved 10 January 2008 from http://www.excellence-earlychildhood.ca/documents/AstleyANGxp.pdf.

Astley, S. J. (1999). *Diagnostic guide for fetal alcohol syndrome and related conditions: the 4-digit diagnostic code*. (2nd Ed.) Seattle: University of Washington Publication Services.

Blondin-Andrew, E. (2000). *Health Canada releases FAS/FAE best practices publication* [News Release, Electronic media]. Health Canada. Retrieved May 18, 2001, from http://www.nc-sc.gc.ca/English/archives/releases/2001/2001_14e.htm

Burgess, D. M., & Streissguth, A. P. (1992, September). Fetal alcohol syndrome and fetal alcohol effects: Principles for educators. *Phi Delta Kappan*, *74*, 24-30.

Calhoun, E., (1993). Action research: Three approaches. *Educational Leadership, 51*(2)*, 62-65.

Cherry, N. (1999). *Action research: A pathway to action, knowledge and learning.* Melbourne, Australia: RMIT Press.

Chudley, A. E., Conry, J., Cook, J. L., Loock, C., Rosales, T., & LeBlanc, N. (2005). Fetal alcohol spectrum disorder: Canadian guidelines for diagnosis. *CMAJ, 172*, pp. S1-S21. Retrieved January 11, 2008 from http:// www.cmaj.ca/cgi/content/full/172/5_suppl/S1?eaf

Coleman, P. (1998). *Parent, teacher and student collaboration: The power of three*. Thousand Oaks, CA: Corwin Press.

Cooper, E. F. (1991). Alcohol use and abuse by women. *The library of congress.* Retrieved June 27, 2002 from http://www.come-over.to/FAS/congress.htm

Darling-Hammond, L. (1997). *The right to learn*. San Francisco: Jossey-Bass.

Deal, T. E., & Peterson, K. D. (1998).How leaders influence the culture of schools. *Educational Leadership, 56*(1), 28-30.

Deal T. E., & Peterson, K. D. (1999). *Shaping school culture: The heart of leadership.* San Francisco: Jossey-Bass.

Decker, L. E., & Schoeny, D. A., (1992). National education leaders speak out on restructuring. In L. E. Decker & V. A. Romney (Eds.), *Educational restructuring and the community education process,* (pp. 33-34)*.* University of Virginia Press.

Denhardt, R. B. (1984) *Theories of public organization*. Belmont, CA: Brooks/Cole

Dimmock, C. (1996). Dilemmas for school leaders and administrators in restructuring. IN K. Leithwood (Ed.) *International Handbook of Educational Leadership and Administration,* (pp.135-170). Boston: Kluwer Academics

Doherty, J., MacBeath, J., Jardine, S., Smith, I., & McCall, J. (2001). Do schools need critical friends? In J. MacBeath & P. Mortimore (Eds). *Improving school effectiveness* (pp. 138-151). Buckingham, England: Open University Press

Donaldson, Jr. G. A.(2001). *Cultivating leadership in schools: connecting people, purpose, and practice*. New York: NY Teachers College Press

Dunn, W. (1981). *An introduction to public policy analysis.* Englewood Cliffs, NJ: Prentice Hall.

Edwards, P. A., Danridge, J. C., & Pleasants, H. M. (2000). *Exploring urban teachers conceptions of at-riskness*. Ann Arbor, MI: Center for the Improvement of Early Reading Achievement Report

Firestone, W. A., & Louis, K. S. (1999). Schools as Culture. In J. Murphy & K. S. Louis (Eds.), *Handbook of research in educational administration*, (2nd Ed., pp. 297-322). San Francisco: Jossey-Bass.

Fullan, M. G. (1992). Visions that blind. *Educational Leadership 49*(5)*,* 19-22*.*

Fullan, M. G. (1992). *Successful school improvement*. Buckingham, England: Open University Press.

Fullan, M. G. (1993). *Change forces: Probing the depths of educational reform*. London: Palmer

Fullan, M. G. (1999). *Change forces: The sequel*. Philadelphia, PA: Palmer Press/ Taylor & Francis Inc.

Fullan, M. G. (2000). *The new meaning of educational change* (3rd Ed.). New York: Teachers College Press.

Fullan M. G., & Hargeaves, A. (1992). *What's worth fighting for? Working together for your school*. Toronto, Ontario: Open University Press.

Furman, G. C. (1998). Postmodernism and community in schools: Unraveling the paradox. *Educational Administration Quarterly, 34*(3), 298-328.

Godel, J. C., Lee, B. E., McCallum, D. E., Sze, L. L., MacNeil, C. W., Liddell, G. A., et al. (2000). Exposure to alcohol in utero: Influence on cognitive function and learning in a northern elementary school population. *Paediatric Child Health,* 5(2), 8.

Goodlad, J. I., (1992). National educational leaders speak out on community education. In L.E. Decker & V.A Romney (Eds.), *Educational restructuring and the educational process,* (pp. 35-43). University of Virginia Press

Gossen, D. (1992). *Restitution: Restructuring School Discipline.* Saskatoon, Saskatchewan: Chesolm Consultants.

Government of the Northwest Territories. (1982) *Learning: Tradition and Change in the Northwest Territories*.

Government of the Northwest Territories. (1993). *Dene Kede.* Department of Education, Culture and Employment.

Government of the Northwest Territories. (1996a). *Inuuqatugiit. The Curriculum from the Inuit Perspective.* Department of Education, Culture and Employment.

Government of the Northwest Territories. (1996b). *Education Act.* Retrieved December 10, 2001 from

http://www.siksik.learnnet.nt.ca/ECE/ECSS/office/legislation/1/INDEX.HTM

Government of the Northwest Territories (1999) *Towards excellence: A report on education in the NWT*. Retrieved December 03, 2001 from

http://siksik.learnnet.nt.ca/ECE/Reports/towardexcellence99/index.htm

Government of the Northwest Territories (2000). *Health and social programs.* Retrieved December 12, 2001 from http://www.gov.nt.ca/index.html

Government of the Northwest Territories (2001*). Early childhood development: Action plan.* Retrieved December 10, 2001 from

http://www.hlthss.gov.nt.ca/publicat/pdf/024Action_Plan1.pdf

Hargreaves, D. H. (1998, August). *The knowledge-creating school.* Paper presented at the annual meeting of the British Educational Research Association, Belfast, Northern Ireland.

Health Canada (2001). FAS/FAE Child, youth and family. *What is FAS/FAE?* Retrieved June 28, 2002 from http://www.hc-sc.gc.ca/hppb/childhood-youth/cym/fas/whatisfas.html

Healthy Children Initiative: Northern Research (1998). *Early childhood intervention in the NWT.* Retrieved March 20, 2002 from

http://www.siksik.learnnet.nt.ca/ECE/ecss/daycare/A/north/sitmap.htm/map

Holter, I. M., & Schwartz-Barcott, D. (1993). Action research: What is it? How has it been used and how can it be used in nursing? *Journal of Advanced Nursing, 128*, 298-304.

James, F. R., (1994). Aversive interventions for combating school violence: Profiles and implications for teachers and directors of special education. *Preventing School Failure. 38*(4)*, 32-36.*

Johnson, G. M., (1997). Perceptions of the effectiveness of interventions for at-risk students: a survey of inner-city school administrators. *Canadian Journal of Education, (Vol 22), No 4,* 445-450*.*

Kodituwakku, P. W., Handmaker, N. S., Cutler, S. K., Weathersby, E. K., & Handmaker, S. D. (1995). Specific impairments in self-regulation in children exposed to alcohol prenatally. *Alcoholism: Clinical and experimental research*, *19*(6)*,* 1558 – 1564.

LaRocque, L. & Coleman, P. (1989) Quality control: School accountability and district ethos. In M. Holmes, K. Leithwood, & D. Musella (Eds.), *Educational policy for effective schools,* (pp. 168-191). Toronto, Ontario, Canada: OISE Press.

Legge, C., Roberts, G., & Butler, M. (2000). Fetal alcohol syndrome/ fetal alcohol affects and the effects of other substance abuse during pregancy. Health Canada Online.

Leithwood, K., Jantzi, D. & Steinbach, R. (1999). *Changing leadership for changing times*. Buckingham, England: Open University Press.

Leithwood, K., Steinbach, R., & Ryan, S. (1997) Leadership and team nurturing in secondary schools. *School Leadership & Management, 17,* (3)*,* 303-325.

Lenarduzzi, G. (1992). *Close the back door: Helping at-risk students succeed in our schools*. Vancouver, B.C.: EduServ Inc.

Levine, D. U. & Lezotte, L.W. (1990). *Unusually effective schools: A review and analysis of research and practice*. Madison, WI: National Center for Effective Schools Research and Development.

Manitoba Education, Citizenship and Youth (2006). *Community Schools: A support document for partners in the community schools partnership initiative.* http://www.edu.gov.mb.ca/cspi/documents/support_doc.pdf.

MacBeath, J. & Mortimore, P. (2001). School effectiveness and improvement: The story so far. In J. MacBeath & P. Mortimore (Eds.) *Improving school effectiveness*, (pp. 1-21). Buckingham, England: Open University Press.

Maguire, D. (2004). Voices from the field – An Aboriginal view on FAS/ FAE. In: R. Tremblay , R. Barr, RDeV. Peters, (Eds.) *Encyclopedia on Early Childhood Development* (online). Montreal, Quebec: Centre of Excellence for Early Childhood Development. Retrieved January 11 , 2008 from http://www.excellence-earlychildhood.ca/MaguireANG.pdf.

Masters, J. (1995) The history of action research. In I. Hughes (Ed.) *Action research electronic reader*. The University of Sydney. Retrieved July 4, 2002 from http://www.behs.cchs.usyd.edu.au/arow/Reader/rmasters.htm

Mattson, S.N., & Riley, E.P. (1998). A review of the neurobehavioral deficits in children with fetal alcohol syndrome or prenatal exposure to alcohol. *Alcoholism: Clinical and experimental research*, *22*(2), 279 – 294.

May, P.A., & Gossage, J.P. (2001). Estimating the prevalence of fetal alcohol syndrome: A summary. *Alcohol research and health*, *25*(3), 159 – 167.

McCutcheon, G. & Jurg, B. (1990) Alternative perspectives in action research. *Theory into practice, 24*(3), Summer.

Mitchell, C., & Sackney, L. (2000). *Profound improvement; Building capacity for a learning community* (1st Ed.). Lisse, NL: Swets & Zeitlinger.

Morse, J. M., Barrett, M., Mayan, M., Olson, K., & Spiers, J. (2002). Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods, 1*(2), 1-19.

Nanson, J. (2003). Fetal alcohol syndrome: Effect and its impact on psychosocial child development. Comments on Sandra and Joseph Jacobson. In: R. Tremblay , R. Barr, RDeV. Peters, (Eds.) *Encyclopedia on Early Childhood Development* (online). Montreal, Quebec: Centre of Excellence for Early Childhood Development. Retrieved January 12, 2008 from http://www.excellence-earlychildhood.ca/NansonANG.pdf.

Native-L mailing list (1996). *NWT alcohol and drug survey*. Retrieved from http://www.nativenet.uthscsa.edu/archives/nl/9611/0087/html

Newmann, F. and Associates (1996). *Authentic achievement: Restructuring schools in intellectual quality.* San Francisco: Josey-Bass.

Nicholls, G. (2002) Commission on class size and composition: Final report. Manitoba Education.

Novick, N. J. & Streissguth, A. P. (1995). *Fetal alcohol syndrome: Fetal alcohol effects in the treatment setting.* Quest Publishing Company, Inc. Retrieved March 18, 2002 from http://www.depts.washington.edu.fadu.Fetal_Alcohol_1.html

Novick, N. J., & Streissguth, A. P. (1996). *Thoughts on treatment of adults and adolescents impaired by fetal alcohol exposure.* Quest Publishing Company,Inc. Retrieved March 20, 2002 from

http://www.depts.washington.edu.fadu.FAS_FAE2.html

Peterson, K. D. (1999). Time use flows from school culture: River of values can nurture or poison staff development hours. *Journal of Staff Development, 20*(2). Retrieved February 11, 2008 from

http://www.nsdc.org/library/publications/jsd/peterson202.cfm

Punshon, H. A. (1998). *Unequal treatment of unequals: The distribution of scarce resources.* Unpublished manuscript. University of Saskatchewan, Saskatoon.

Rapoport, R. N. (1970). Three dilemmas of action research. *Human relations, 23,* 499-513.

Rawls, J. (1971). *A theory of justice*. Cambridge, Mass: Harvard University Press.

Rawls, J. (1973). *Political liberalism*. New York: Columbia University Press.

Renihan, F. I., & Renihan, P. J. (1995). Responsive high schools: Structuring success for the at-risk student. *The High School Journal, 79* (1), 1-13

Robinson, G. C., Conry, J. L., & Conry, R. F. (1987). Clinical profile and prevalence of Fetal Alcohol Syndrome in an isolated community in British Columbia. *Canadian Medical Association Journal, 137,* 203 – 207.

Robinson, V. (1993). Problem-based methodology: Research for the improvement of
     practice. Oxford, England: Pergamon Press.

Sackney, L., Walker, K., & Mitchell, C. (1999). Postmodern conceptions of power for
     educational leadership. *Journal of Educational Administration and Foundations,
     14*(1), 33-57.

Saskatchewan Education (2004). Building communities of hope: Effective practices for
     meeting the diverse learning needs of children and youth.
     http://www.sasked.gov.sk.ca/branches/pol_eval/community_ed/pub.shtml

Schein, E. H., (1992). *Organizational culture and leadership* (2nd Ed.). San Francisco:
     Jossey-Bass

Schnarch, B. (2004). Ownership, control, access, and possession (OCAP) or self-
     determination applied to research, a critical analysis of contemporary First Nations
     research and some options for First Nations communities. *Journal of Aboriginal
     Health, 1*(1), 80–95.

Schon, D. (1983). *The reflective practitioner: How professionals think in action.* London:
     Temple Smith.

Sergiovanni, T. J. (1997). *The principalship: A reflective practice perspective*. Boston,
     MA: Allyn and Bacon.

Seyfarth, J. T. (2005). *Human resources management for effective schools* (4th Ed.).
     Boston: Pearson Education Inc.

Shelton, M & Cook, M., (1993, Spring). Fetal alcohol syndrome: Facts and prevention.
     Preventing School Failure, 37(3), 44-46.

Simon, H. (1973). The structure of ill-structured problems. *Artificial intelligence, 4,* 181-201.

Smitherman, C. H., (1994). The lasting impact of fetal alcohol syndrome and fetal alcohol effects on children and adolescents. *Journal of Paediatric Health Care*, *8*(3), 121-126.

Springate, K. W. & Stegelin, D. A. (1999). *Building school and community partnerships through parental involvement.* Upper Saddle River, NJ: Prentice-Hall.

Steinhausen, H-C., & Spohr, H-L., (1998). Long-term outcome of children with fetal alcohol syndrome: Psychology, behavior, and intelligence. *Alcoholism: Clinical and Experimental Research, 22*(2)*,* 334-338..

Stolp, S. (1994). *Leadership for school culture*. ERIC Clearinghouse on Educational management, Eugene, OR. (ED370198)

Streissguth, A. P., & O'Malley, K. D. (1997). *Fetal alcohol symptoms/ Fetal alcohol effects: Secondary disabilities and mental health approaches*. Quest Publishing Company, Inc. Retrieved July 9, 2001, from http://depts.washington.edu/fadu/Tr.today.97.html

Streissguth, A. P., Aase, J. M., Clarren, S. K., Randels, S. P., LaDue, R. A., & Smith, D. F. (1991). Fetal alcohol syndrome in adolescents and adults. *Journal of the American Medical Association*, *265*(15)*,* 1961-1967.

Streissguth, A. P., Barr, H. M., Sampson, P. D., & Bookstein, F. L. (1994). Prenatal alcohol and offspring development: The first fourteen years. *Drug and Alcohol Dependence*, *36*, 89-99.

Sugai, G. (1996, Winter). Providing effective behaviour support. *SAIL: Technical Assistance Journal, 11*(1)*,* 3-6.

Taylor, L. & Bell, A. (1992). Implementing Restitution in a Connected School. Yellowknife, NWT: Restitution Peace Project

Thomas, S., Kelly, S., Mattson, S., & Riley, E. (1998). Comparison of social abilities of children with fetal alcohol syndrome and those of children with similar IQ scores and normal controls. *Alcoholism: Clinical and Experimental Research, 22*(2)*,* 528-533*.*

Tonnies, F. (1957). Community and society. (C. Loomis, Ed. & Trans.) East Lansing: Michigan State Univesity Press. (Original work published as *Gemeinschaft and Gesellschaft*, 1887)

Walker, K., Shakotko, D., & Pullman, E. (1998). *Towards a further understanding of trust and trustworthiness.* Paper presented at the Values in Educational Leadership Conference, University of Toronto, Toronto, Ontario.

Warren, K. R., & Foudin, L. L. (2001). Alcohol-related birth defects – the past, present and future. *Alcohol Research and Health*, *25*(3), 153-158.

Wehlage, G., Rutter, R., Smith, G., Lesko, N., & Fernandez, R. (1989). *Reducing the risk: Schools as communities of support.* Philadelphia, PA: The Falmer Press..

White, J. D., (1999). *The narrative foundations of public administration research*. Washington, D.C.: Georgetown University Press.

Winter, R. (1995). Some principles and procedures for the conduct of action research. In O. Zuber-Skerritt (Ed.) *New directions in action research*, (pp 13-27). Washington DC: Palmer Press.

Williams, W. M., (1998). Preventing school violence: What can principals do? *NASSP Bulletin, 83*(603), 10-17.

Woolcott, H. F., (1994). *Transforming qualitative data*. Thousand Oaks, CA: Sage

Zuber-Skerritt, O. (1996). Emancipatory action research for organizational change and management development. In O. Zuber-Skerritt (Ed.) *New directions in action research* (pp. 83-105). Washington, DC: Palmer Press.

APPENDICES

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Appendix A

Application to Ethics Committee and Ethics Approval

Application for Approval of a Research Protocol

To

University of Saskatchewan

Advisory Committee on Ethics in Behavioural Science Research

1.

Researchers: Dr. Murray Scarf – Supervisor - Department of Educational

Administration

William Gowans – Doctoral Student – Department of Educational Administration

b) Anticipated research schedule

Start date: October 2002

Completion date: June 2003

2. **Title:**

An examination of the administrative challenges in the integration of students with fetal alcohol spectrum disorders into Northern Canadian school and communities.

3. Abstract:

Data from the studies by Asante & Nelms-Matke (1985) and Robinson, Conry & Conry (1987) indicate a likelihood of northern communities with the prevalence of fetal alcohol spectrum disorders (FASD) children significantly above the Canadian average. This suggests a behavioural disabilities to the school and present a challenge to the administration and leadership of such schools need to investigate the integration of these

children into their respective schools, the administrative values and practices applied and the perceived outcomes.

Students with FASD bring a wide variety of cognitive and. The examination of school governance and administration as it relates to students with FASD has not, to date, been a source of significant research. The school by its willingness to accommodate the diversity of behaviour and achievement of FASD students and to develop a nurturing climate plays a major role in their success. Schools who initiate change to integrate students with FASD create a supportive school community, hold more students in their school and, in so doing, and become more effective.

This study takes the form of practical action research. It will use theory appropriate to the identification and improvement of current practices in relation to the schools and their students with FASD. The general approach will be to utilize theory that will bring insights to the experiences of the participants, and that the experiences of the participants will be used to modify the theory.

4. Funding: No special funding has been sought or awarded for this study

5.   Participants:

In each of the schools in the Beaufort-Delta Education Council the NWT there is a likelihood of a cohort of students with FASD. The principals of the schools will be invited to participate. A limited number of parents in each of the communities who have an interest in the school will be invited to participate. Members of the local educational boards (District Educational Authority) will also be invited to participate and will select their own representative participants.

The researcher is a vice-principal in a school in the Beaufort-Delta Education Council and as such may be supervised by one of the principals. As a vice-principal he is an employee of the Board and the DEA. His relationship with parents in his home community is essentially professional although as a long-time resident of the community he has an understanding of northern aspirations.

6. **Consent:**

a.   Written permission will be attained from the governing bodies of the participating schools at the outset of the study. This consent will take two forms; the first from the Beaufort-Delta Education Council at the fall meeting in October 2002 allowing research to be conducted in Council schools. The second will be granted by the participating District Education Authorities as a condition of research being conducted in their schools. Appendix A is a copy of the application sent to the Beaufort-Delta Education Council and to the District Education Authorities in the Council. Approval from the Council and the District Education Authorities has been attained. The pending approval of the Research Institute of the NWT is contingent upon approval from the University of Saskatchewan Behavioural Ethics Board (Appendix B)

The participants will be fully apprised of the nature and purposes of the study and their participation will be voluntary and they may withdraw at any time. Each participant will sign a waiver to that effect. The researcher will remind each participant prior to meetings or interviews that they have the right to withdraw.

b. A research licence is required from the Research Institute of the NWT to conduct research in the Northwest Territories and will be attained. A condition of this research licence is approval by the various community groups. Copies of correspondence and the related permission waivers will be forwarded.
Other informal discussions have taken place with teachers who are interested in the study. They have been informed by their principals and are seeking further information. The lack of a Research Licence forbids pursuit of data.

c. There will be no children under the age of 18 enrolled in the study.

d. The participants are not in a dependent relationship to the researcher.

e. All participants are of legal age to give consent and suffer from no cognitive impairment that will reduce their ability to understand the nature of the research.

f. This research does not involve participant-observation or naturalistic-observation research. While visiting the schools I will meet with the principals, participating staff members, DEA members and interested parents. Some of these meeting will take place in other locations in the community e.g health clinic, hamlet office, homes.

g. The use of all nine schools in the Beaufort-Delta Education Council permits withdrawal by individuals or segments of the group. The remaining schools and communities will still permit completion of the study.

The selection of parents and DEA members is voluntary and the withdrawal of single members will not adversely affect the study.

6.   Methods/ Procedures:
Data will be collected by the following means:

- interviews with participating practitioners; parents; DEA members
- reflection meetings
- a reflective log kept by each practitioner
- field notes
- a monthly synthesis

-        artefact collection The documents to be studied are the Discipline Policy, Attendance Policy, and Home Schooling Policy for each school. The Education Act of the NWT (1966) mandates that policies in these areas be present in every school, in written form, as matters of public record. The policies, and an examination of their application, will be used to provide data on the treatment of students with Fetal Alcohol Spectrum Disorders.

-        one on-site visit to each school

The schedule for interviews of participants in the Delta and Arctic coast depends on the weather, availability of seats on charter flights, community convenience etc. Interviews in my home community are easier to schedule, however the lifestyle is less relaxed than in the other communities and conflicts may occur. A tentative schedule of interviews follows:-

Community 1 (Arctic coast)   January 17 I visited the community in December and will return contingent on the availability of the charter on that date. I will not stay overnight and plan to utilize every working moment while on the ground in the community.

Community 2 (Delta)   March 19, 20, 21   These days are scheduled for professional development in my school. I will travel to the Delta community during that time period and conduct interviews with participating researchers as well as other interested community members. Travel time to the community is approximately 75 minutes and the roads are in good condition at that time of the year. Consequently I do not anticipate travel problems.

Community 3 (Home community)

January - DEA members

February – Health professional

March -   Parents

April   - Community members

May -   School staff researchers

The use of action research suggests the practitioners will dictate interview protocols

8. Storage of Data:

Professor Scharf, following the regulations determined by the University of Saskatchewan, will supervise data storage.

9. Dissemination of Results:

Upon completion of the data gathering each school participating in the study will be furnished with a report of their theories in action to deal with the problem. This will be disseminated in June 2003.

The primary dissemination of the research will be in the researcher's Ph. D. thesis. Journal articles and conference presentations will be another method that the research will become public.

10.   Risk or Deception:

There is no risk to the participants. Deception will not be used in this study.

11. Confidentiality:

The Education Council and the participating schools will be assigned pseudonyms. All participants will also be assigned pseudonyms. Selected pertinent quotations will be used to highlight particular aspects of the research and will be carefully selected and framed to avoid revealing the identity of the participant.

Prior to the reflective meeting attended by the researcher in each community the group will be reminded that they have undertaken to protect the confidentiality of what is said. The principals will be charged to remind participants of this undertaking at their monthly reflective meetings. The data from the principals' reflective logs and from the reflective meetings held in each community will not be used to provide pertinent quotations.

12. **Data/transcript release:**

Participants will be asked to sign Consent Form that gives them the opportunity to retract or alter comments attributed to them.

13. **Debriefing and feedback:**

Participants will have the opportunity upon request to review the transcripts of their interview with the researcher.

The primary vehicle for the dissemination of the results of this study will be in the form of a Doctoral Thesis. The cooperating school and Education Council will receive a copy of the final document. An executive summary will be available to all participants. The researcher also anticipates producing articles for publication in refereed journals and conference presentations.

_____ Bill Gowans, Doctoral Candidate, Educational Administration

_____ Dr. Murray Scharf, Advisor, Educational Administration

_____ Dr. Pat Renihan, Department Head, Educational
Administration

Appendix B

Approval of the Research Protocol

UNIVERSITY OF SASKATCHEWAN
BEHAVIOURAL RESEARCH ETHICS BOARD
http://www.usask.ca/research/ethics.shtml

NAME: Murray Scharf (W. Gowans)   **BSC#:** 02-707
Department of Educational Administration

DATE: January 28, 2003

The Behavioural Research Ethics Board has reviewed the revisions to the Application for Ethics Approval for your study "An Examination of the Administrative Challenges in the Integration of Students with Fetal Alcohol Spectrum Disorders into Northern Canadian Schools and Communities" (02-707).

1. Your study has been APPROVED.

2. Any significant changes to your proposed method, or your consent and recruitment procedures should be reported to the Chair for Committee consideration in advance of its implementation.

3. The term of this approval is for 5 years.

4. This approval is valid for five years on the condition that a status report form is submitted annually to the Chair of the Committee. This certificate will automatically be invalidated if a status report form is not received within one month of the anniversary date. Please refer to the website for further instructions: http://www.usask.ca/research/behavrsc.shtml

I wish you a successful and informative study.

_____
Dr. Valerie Thompson, Chair
Behavioural Research Ethics Board

VT/ck

Appendix C

Guiding Questions for Stakeholder Interviews

Guiding Questions for Stakeholder Interviews

1. In the context of students with fetal alcohol spectrum disorders (FASD) what do you see as the extent of the problem in your school? Do you have any data on this problem?

2. What kind of administrative measures can you take to enhance your schools responses to students with FASD? How will you implement these measures?

3. What methods will you employ to collect data to show that the measures are effective?

4. When we next meet, do you believe your understanding of the problem will have altered?

5. Is there anything sensitive about the problem that has emerged since you began school this year? Would you like to discuss it?

6. What kinds of discussions have you enjoyed with your staff, the parents, and the DEA members concerning how to enhance the school responses to students with FASD?