

Evaluating Success: Mother Earth's Children's Charter School Longitudinal Study

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Mother Earth's Children's Charter School (MECCS) was established in response to the need for a culturally compatible and positive educational experience for Indigenous children in north central Alberta. Before the school's opening in 2003, researchers from the University of Alberta were invited by the MECCS administration, parents, and the Vice-Chief of the Assembly of First Nations to conduct a longitudinal evaluation of change in measures of behavior, academic achievement, self-perception, and health in children who attend the school. Data were collected and analyzed from 86 research participants who attended the school during its first three years of operation. All measures significantly declined or showed no significant change during the study period. Possible explanations for the observed declines include transfer of higher-performing students out of the school after their initial enrollment, an unexpected and high enrollment of special-needs students, and a lack of adjustment time for the school to begin operations before testing began.

Aboriginal¹ youth experience a higher rate of leaving school early than non-Aboriginal youth in Canada (Statistics Canada, 2005). This may be a result of the limited exposure that Aboriginal students have to their language and culture in most school curricula. Because schools are set up to accommodate non-Aboriginal students, the methods teachers employ and

the curricula they convey do not typically support the strengths of Aboriginal students (Rasmussen, Sherman, & Baydala, 2004). Numerous case studies involving Indigenous people from diverse regions of the world have documented the value of a participatory approach to educational policy and curriculum development that involves Aboriginal people's knowledge, culture, language, and pedagogy in all aspects of decision-making (King & Schielmann, 2004). Inclusion of local language and culture as a fundamental part of the curriculum and the involvement of the community in school affairs may signal to students the worth of their heritage, providing them with a degree of hope for the future and fostering in them a desire to learn (Cummins, 1981). Keeping children in school and providing them with a culturally compatible and positive academic experience has the potential to improve self-esteem and prevent chronic academic underachievement, school dropout, unemployment, and poverty, all of which interact negatively to affect health outcomes.

Mother Earth's Children's Charter School (MECCS), the first and only Indigenous children's charter school in Canada, was established in 2003 in response to the need for a culturally compatible and positive educational experience for Indigenous children in north central Alberta (Pearce, Crowe, Letendre, Letendre, & Baydala, 2005). Before the school's opening, researchers from the University of Alberta were invited by the MECCS administration, parents, and the Vice-Chief of the Alberta Assembly of First Nations to conduct a longitudinal evaluation of changes in measures of behavior, academic achievement, self-perception, and health in children who attend the school. In this article, we present the research approach and findings from the first three years of the school's operation.

Methods

MECCS is located next to Lake Wabamun in a rural community in north central Alberta, Canada (Figure 1). Most children who attend self-identify as Cree (40%) and Nakota Sioux (41%), although the school population also represents Blood, Blackfoot, Ojibway, Dene, Inuit, Métis, as well as children who identify as non-Aboriginal.² Charter schools were introduced in Alberta in 1994 to address the need for educational innovation. The 1994 *School Amendment Act* "enabled the establishment of charter schools—autonomous public schools that would provide innovative or enhanced means of delivering education in order to improve student learning" (Alberta Learning, 2002, p. 1). The Alberta government's mandate for charter schools includes the expectation that the school demonstrate the potential to improve the learning of students and that the educational services they offer will differ from what is available locally. MECCS follows the Alberta Education program of studies together with a "parallel indigenous curricula for all subject areas" (MECCS Society, 2002, n.p.). Development of parallel Indigenous curricula will be the work of "teachers, Elders, Traditional teachers, and community members" (n.p.).

Language instruction in both Cree and Stony is also offered. Program and teaching/learning approaches are based on a traditional Indigenous approach to education that focuses on the development of the whole person (Neegan, 2005). The Medicine Wheel is central to this approach, which supports each person's mental, physical, social/emotional, and spiritual elements. Teaching approaches, then, require "far more experiential learning approaches than are currently used in 'mainstream' public education systems" (MECCS Society, 2002, n.p.). Approximately 30% of the teachers and staff who provide instruction at the school are of Indigenous ancestry. Teacher/staff cultural knowledge varies according to each individual's background, education, and life experiences.

A community advisory group that included MECCS administration, parents, the Vice-Chief of the Alberta Assembly of First Nations, and academic members from the University of Alberta initially met regularly to discuss the project including study design, development of a funding proposal, and the logistics of implementing the study in the school community. As the project evolved, the principal investigator was asked by the advisory group to provide reports on the progress of the study to the MECCS Board during their regular monthly meetings as an alternative to advisory group meetings. In addition to these monthly meetings, the progress of the study was communicated through inservice sessions and workshops to parents and school staff by academic research team members during each year of the study.

The research proposal was submitted for ethical review and approved by the Health Research Ethics Board of the University of Alberta. Informed



Figure 1. Mother Earth's Children's Charter School.

consent was obtained from each child's primary caregiver, as well as individual assent from each child. The Canadian Institutes for Health Research (CIHR, 2007) *Guidelines for Research Involving Aboriginal People* and the *Principles of Community-Based Participatory Research* (Israel, Schulz, Parker, & Becker, 1998) provided a frame of reference for the relationship that developed between community members and the academic research team.

A longitudinal evaluation of change in measures of behavior, academic achievement, self-perception, and health of children who attended the first school cohort was conducted over a three-year period, using a cohort-sequential design (Helmstadter, 1970). This approach allowed for longitudinal within-subjects comparisons to determine whether performance improved as children progressed through each school year. Subject data were collected at baseline (Time 0), at the end of the first year in the MECCS program (Time 1), at the end of the second year of the program (Time 2), and again at the end of the third year of the program (Time 3). Testing occurred across several months for each of the four time periods. Given the nature and location of MECCS, randomized assignment was not possible and matched comparison groups would be difficult, if not impossible, to find without confounding potentially important demographic or instructional variables.

Measures completed by the children were administered by research team members according to the standardized assessment protocols. Teachers were consulted about appropriate assessment times for the children in order to minimize classroom and school function interruptions. Assessors began each session by introducing themselves and explaining the assessment process and rationale for the specific assessment measure. The assessors were available to answer children's questions related to comprehension of test subject matter. If children indicated at any time during the assessment that they did not want to continue, they were excused and arrangements were made for alternate assessment times or to discontinue the assessment process.

Teachers and primary caregivers completed the assessment measures individually. Along with the assessment measures, written directions were provided explaining the assessment process, rationale for the specific assessment measure, what participation was required, timelines for completion, and contact information for the research team. If teachers or primary caregivers indicated at any point during the assessment process that they did not want to continue, they were excused and arrangements were made to discontinue the assessment process.

The cohort-sequential design of the study is illustrated in Table 1. Entries under the heading *Grade* refer to grade level at the time (0-3) of testing. Entries under *Times 0-3* refer to cohort. For example, kindergarten children who enter school at Time 0 are members of the K cohort: They are

Table 1
Cohort-Sequential Design

| Grade | Time 0 (Fall, Year 1) | Time 1 (Spring, Year 1) | Time 2 (Spring, Year 2) | Time 3 (Spring, Year 3) |
|-------|--------------------------|----------------------------|----------------------------|----------------------------|
| 8 | 8 | 8 | 7 | 6 |
| 7 | 7 | 7 | 6 | 5 |
| 6 | 6 | 6 | 5 | 4 |
| 5 | 5 | 5 | 4 | 3 |
| 4 | 4 | 4 | 3 | 2 |
| 3 | 3 | 3 | 2 | 1 |
| 2 | 2 | 2 | 1 | K |
| 1 | 1 | 1 | K | |
| K | K | K | | |

in kindergarten at Times 0 and 1, in grade 1 at Time 2, and in grade 2 at Time 3. Data were collected from 241 participants across three years; however, due to dropout and missing data, not all participants were evaluated over the course of the entire program. The resulting sample size was 86. The children were grouped into one of three categories: kindergarten to grade 2, grades 3-5, and grades 6-8. This sample is described in Table 2.

Study results were shared and possible interpretations were discussed at inservice sessions and workshops that included Aboriginal and non-Aboriginal research team members, parents, and school staff. The final draft of this article was shown to the school principal, school superintendent, and MECCS Board for their final input and recommendations.

Measures

Behavior Assessment System for Children (BASC). The BASC (Reynolds & Kamphaus, 1992) is used to measure behavioral and emotional development. Parents completed the Parent Rating Scale (PRS), and teachers completed the Teacher Rating Scale (TRS). Both the TRS and PRS forms consist of 150 statements to which teachers and parents respond *never, sometimes, often, or almost always*. On both the PRS and the TRS, the Externalizing Composite scores consist of Hyperactivity, Aggression, and Conduct Problems scales, whereas the Internalizing Composite scores consist of Anxiety, Depression, and Somatization scales. On the PRS, scales measuring Atypicality, Withdrawn, and Attention Problems make up the Behavioral Symptoms Index; and Adaptability, Social Skills, and Leadership make up the Adaptive Skills Composite. On the TRS, Atypicality and Withdrawn make up the Behavioral Symptoms Index; and Adaptability, Social Skills, Leadership, and Study Skills make up the Adaptive Skills Composite. The TRS also has a School Problems Composite, which consists of Attention Problems and Learning Problems. All scales have a mean

Table 2
Description of Student Sample

| | No. of Children |
|------------------------|-----------------|
| Entered year 1 | 75 |
| Entered year 2 | 11 |
| Male | 47 |
| Female | 39 |
| First Nations (Treaty) | 61 |
| Metis | 12 |
| Non-Aboriginal | 11 |
| Ethnicity unknown | 2 |
| Kindergarten | 12 |
| Grade 1 | 9 |
| Grade 2 | 10 |
| Grade 3 | 10 |
| Grade 4 | 9 |
| Grade 5 | 11 |
| Grade 6 | 11 |
| Grade 7 | 9 |
| Grade 8 | 5 |

T-score of 50 and a standard deviation of 10. Higher scores reflect more of the observed behavior, and lower scores reflect less of the observed behavior. Indexes are available to determine the quality of completed forms. Validity may be threatened by a number of respondent factors including poor attention to item content, an attempt to portray a child in an overly negative or positive way, lack of motivation to respond truthfully, or poor comprehension of the questions asked. Information on these indexes is provided in the BASC manual (Reynolds & Kamphaus, 1992).

Wechsler Individual Achievement Test II (WIAT-II). The WIAT II (Psychological Corporation, 2002) was administered individually as a measure of academic achievement. The WIAT-II yields four composite scores for Reading, Mathematics, Written Language, Oral Language, and a Total composite score. The Reading composite is composed of word reading, reading comprehension, and pseudo-word decoding subtests; the Mathematics composite is composed of numerical operations and math reasoning subtests; the Written Language composite is composed of spelling and written expression subtests; and the Oral Language is composed of listening comprehension and oral expression subtests. The WIAT-II was scored

using age-based Canadian norms. All subtests and composites, including the Total Composite, have standard scores with a mean of 100 and a standard deviation of 15. The reliability and validity of test scores have been extensively evaluated and are described in the examiner's manual (Psychological Corporation).

Self-Perception Profile for Children (SPPC). The SPPC (Harter, 1985, 1988) was administered as the measure of self-belief and was completed by children in grades 3-8. The SPPC consists of six subscales: Scholastic Competence, Social Acceptance, Athletic Competence, Physical Appearance, Behavioral Conduct, and Global Self-worth. For children in grades 7 and 8 there are three additional subscales: Job Competence, Romantic Appeal, and Close Friendships. The profiles were designed to assess children's views about themselves, rather than observed skill or competence. Children responded by indicating agreement with options corresponding to a four-point scale on which higher scores represent positive self-perception and lower scores represent negative self-perception. Questions were administered individually or in small groups, as described in the administration protocols (Harter). Reliabilities based on Cronbach's alpha range from 0.71 to 0.93.

Health Behavior in School-Aged Children (HBSAC). This 75-item quantitative questionnaire was developed for the World Health Organization (WHO, 1997/1998) as a longitudinal study carried out in 16 countries and encompassing three age groups. An international standard version of the questionnaire was then adapted for use by each participating country. The Canadian version was adapted at Queen's University in collaboration with Health Canada. The HBSAC consists of nine core categories, and data collection occurs in the classroom. It provides data on health risk behaviors such as drug use, alcohol consumption, and on more basic preventative health behaviors such as toothbrushing, exercise frequency, and diet. The HBSAC was administered by self-report to children in grades 4-8.

The BASC, WIAT-II, and SPPC are widely used by educational and health care professionals in Canada. However, caution must still be used to interpret the results as some questions may be culturally biased and therefore misrepresent the profiles of Indigenous children.

Analyses

Hierarchical linear modeling (HLM, Boyle & Willms, 2001) was used to examine the effect of time in program, the independent level 1 variable, on ratings of behavior (BASC-PRS, BASC-TRS), academic achievement (WIAT-II), self-perception (SPPC), and health behavior (HBSAC). HLM analysis requires that each participant have two or more data points, and because HLM results are more powerful with a greater number of participants, we included all participants who had at least two data points for the specific outcome being assessed in the analysis. Eighty-six participants had at least two data points or more. Time in program was defined as the

time (in years) that a student participated in the MECCS program before being evaluated for a specific outcome. Two-tailed testing and pairwise deletion of cases were used in all analyses.

Level 2 variables included age of entry in the program, attendance, and gender. Age of entry was divided into three possibilities: early entry, mid-entry, and late entry. Early entry was defined as students who began the MECCS program in kindergarten to grade 2; mid-entry was defined as students who began in grades 3-5; and late entry was defined as students who are in grades 6-8.

Attendance was a continuous variable measured as the percentage of days a student was present at the school for a particular year. To facilitate interpretation, the scale was divided by 10 and centered at the mean to demonstrate better the effect of greater than average attendance and lower than average attendance. Gender was defined as a dichotomous variable with 1=male and 2=female.

Primary analysis was done on each of the subscale variables with no level two descriptors using time in program as the independent variable. Each outcome was predicted by a linear combination of the level one variable and an intercept. In the primary analysis, we did not include any level two variables, and therefore the level one slope and intercept depend only on a constant term (G_{00} , G_{10}) and a variance component (U_0 , U_1) as demonstrated below.

Level-1 Model

$$Y = B_0 + B_1(\text{time in program}) + R$$

Level-2 Model

$$B_0 = G_{00} + U_0$$

$$B_1 = G_{10} + U_1$$

This model allows us to determine whether there was a significant change in outcomes during the time spent in the MECCS program. In the subsequent analysis, the level 1 slopes and intercepts are predicted using the Level 2 variables age of entry, attendance, and gender to determine whether these variables are related to the rate of change in outcome variables.

We conducted a WISC-WIAT discrepancy analysis (Psychological Corporation, 2002) for each child using full-scale IQ as measured by the Wechsler Intelligence Scale for Children—Third Edition (WISC-III, Wechsler, 1991) to obtain a predicted score for each composite test on the WIAT-II. For each child, we determined whether there was a significant difference between predicted WIAT-II scores based on full-scale IQ and actual WIAT-II total composite scores with an alpha level of .05. This analysis is generally used to screen for learning disabilities, as indicated if a child performs lower academically than expected based on his or her IQ (Meyer, 2000).

Table 3
Significant Outcomes of Primary Analyses Using Hierarchical Linear Modeling

| <i>Outcome Measure</i> | <i>Slope</i> | <i>Standard Deviation</i> | <i># of Students</i> | <i>p</i> |
|--------------------------------------|--------------|---------------------------|----------------------|----------|
| BASC Parent Adaptive Composite | -1.07 | 0.53 | 56 | 0.050 |
| BASC Teacher Externalizing Composite | 3.34 | 3.87 | 86 | 0.000 |
| BASC Teacher BSI | 1.61 | 1.49 | 86 | 0.007 |
| WIAT-II Reading Composite | -4.24 | 5.38 | 65 | 0.000 |
| WIAT-II Math Composite | -2.96 | 4.45 | 65 | 0.001 |
| WIAT-II Oral Language Composite | -4.40 | 4.36 | 65 | 0.001 |
| WIAT-II Total Composite | -4.52 | 5.81 | 65 | 0.001 |
| SPPC Scholastic Competence | -0.24 | 0.22 | 43 | 0.001 |
| SPPC Behavioral Conduct | -0.24 | 0.14 | 43 | 0.001 |

Results

All the outcomes in the primary analysis had intercepts that were significantly different from zero. Eleven of the assessed outcomes had significant slopes. These slopes are described in Table 3, where a negative slope indicates an unfavorable outcome except for the BASC Teacher Externalizing Composite Scores and the BASC Teacher Behavioral Symptom Index (BSI), where positive slopes are unfavorable. The results show that all statistically significant outcomes experience an unfavorable change over time.

BASC Teacher Externalizing Composite scores showed significant increases over time, which suggests a decline in behavior over time. These scores are characterized by disruptive behavior problems such as aggression, hyperactivity, and delinquency. This dimension has also been referred to as "under-controlled" behavior (Achenbach & Edelbrock, 1978). Symptoms of externalizing problems are generally more obvious than those of internalizing problems, which probably accounts for the higher level of interrater agreement on this dimension. A central characteristic of the BASC Teacher Externalizing Composite scores is the disruptive nature of the child's behavior. Such children readily come to the attention of teachers and health care professionals because they disrupt the activities of both peers and adults, they often are unresponsive to adult direction, and they have more problematic relationships with peers. The BASC Teacher BSI, which is a combination of central BASC scales from the clinical composites that reflects the overall level of problem behavior, also showed significant increases, which again suggests a decline in behavior over time.

The BASC Parent Adaptive Skills Composite scores showed significant declines over the period of enrollment in the MECCS program. In other words, children's behavior was less adaptive over time. This composite

summarizes prosocial, organizational, study, and other adaptive skills. These skills are in many ways antithetical to the behavior problems reflected by the other BASC composites. The adaptive scales measure positive behaviors. High scores on these scales represent positive or desirable characteristics.

On all WIAT-II measures, children's academic performance decreased significantly over time, except on the measure of Writing Skills where no significant changes were found. On the measure of self-perception (SPPC), children showed significant declines on all the measures except for Physical Appearance. Taken together, these findings validate each other, suggesting that overall, children's performance declined in all key areas over the course of enrollment at MECCS. Of the 75 questions on the health behavior questionnaire (HBSAC), four of the questions, determined by the research team to represent general health, school attendance, and school safety, were analyzed using HLM. These questions were: (a) how healthy do you think you are? (b) in general, how do you feel about your life? (c) how many days did you skip class(es) or school this term? and (d) do you feel safe at school? Significant longitudinal differences in these health behaviors were not found.

The level two analyses showed few statistically significant results. The WIAT-II Mathematics and Reading Composite scores and the SPPC Athletic competence outcome demonstrated a more rapid decline in students who entered the program in grades 6-8 than in those who entered in grades 3-5.

According to the teachers' assessment of the BASC scale, children who had higher than average attendance had externalizing scores that increased less over time than children who had average attendance. Conversely, parents' assessment of the BASC scale determined that children who had higher attendance than the mean had increasingly larger externalizing scores over time than children who had average attendance. Analysis of the gender variable provided one significant result: compared with girls, boys had worse internalizing scores over time according to the teachers' assessment.

A discrepancy analysis of the WISC-WIAT ability-achievement was completed for each child during the first year of entry into the study using full-scale IQ as measured by the WISC-III to obtain a predicted score for each composite test on the WIAT-II. The analysis showed that 53.2% of children had WIAT-II scores that were lower than predicted. That is, they were performing significantly lower academically than expected based on their IQ.

Discussion

Education that is responsive to the culture of students is widely accepted as a critical component of student success (Cummins, 1981). In an extensive review of Indigenous education, Demmert (2001) identified school

characteristics that are integral to improving academic performance among Native American students including: (a) Native language and cultural programs in the school; (b) effective teachers and classroom practices; (c) congruency between the culture of the school and the culture of the community served; (d) participation of parents in the educational process; and (e) responsibility for and ownership of schools by parents and other community members. Despite inclusion of these characteristics in the original MECCS vision and mission statements, the performance indicators we measured significantly declined or showed no significant change during the three-year study period. Reasons for these declines are not clear. One possibility is that children who attended the school during the first year and then subsequently left in the second and/or third year were higher performers than those who stayed. However, our results showed that on average, children who left the school were no better off than those who remained. Children who left the school fared better on the BASC Teacher Externalizing Composite scores and worse on the SPPC Social Acceptance subscale. On every other measure, children who left were no different than the children who stayed.

Another explanation for the declines in student performance may have been a lack of adjustment time for the school to begin operations before testing began. There are no models for the development of an Indigenous children's charter school in Canada, and as the process moved forward, difficulties, tensions, and confusion may have arisen (Baydala et al, 2007). Documents prepared by the MECCS Society in their application to Alberta Learning for charter school status outlined four curricular elements in their plans for culturally compatible education including Cree and Stoney language instruction, World Indigenous Studies, and First Nations, Métis, and Inuit arts. The fourth component was an Indigenous cultural guide, "hired to lead, guide, and teach smudge, prayer, traditional practices, and traditional protocol on a daily basis" (MECCS Society, 2002, n.p.). The cultural guide would serve as a resource person for Indigenous perspectives and knowledge in all curricular areas and guide the staff in infusing the content and perspective of Indigenous culture and knowledge into the mandated provincial curricula, specifically, the language arts, science, and social studies curricula. School documents also presented plans for parallel Indigenous curricula for all subject areas to be developed by "a curriculum development [team] made up of teachers, Elders, Traditional teachers, and community members" (n.p.).

The MECCS Society's (2002) description of culturally compatible education is further expanded in the goals set for the school that included the creation of a cultural environment, extensive family involvement, traditional Indigenous teaching/learning approaches, provision of a kindergarten to grade 12 program, a culturally significant school calendar and schedule, and class size capped at 18 students. The MECCS Society's

vision was “to rediscover the gifts and potential of our children through traditional indigenous teachings and respect” (n.p.). This is the educational framework that was envisaged as the staff began their work.

The development of such a model of education is situated in an historical and cultural context that Hampton (1993) described as he worked at redefining American Indian/Alaska Native education. He considered five meanings for Indian education: (a) traditional Indian education, (b) schooling for self-determination, (c) schooling for assimilation, (d) education by Indians, and (e) Indian education “*sui generis*” (p. 268). Indian education *sui generis* is “Indian education as ‘a thing of its own kind,’ a self-determined Indian education using models of education structured by Indian cultures” (p. 270). The development of culturally compatible education signals the possibility of “the development of Native methods and Native structures for education” (p. 270), a hallmark of Indian education *sui generis*. The MECCS Society’s decision to move away from “education by Indians” (band-controlled schools) to “Indian education *sui generis*” was partly based on “existing ‘governance’ issues on-reserve; it is virtually impossible to provide a non-political, stable education program for the children” (MECCS Society, 2002, n.p.). The school’s founders also saw the possibility of developing Indian education *sui generis* in Bill 19, the *School Amendment Act*, which was passed in 1994 to establish charter schools, “autonomous public schools that would provide innovative or enhanced means of delivering education in order to improve student learning” (Alberta Learning, 2002, p. 1).

There is an inherent tension in attempting to fit Native practices into non-Native structures, in the juxtaposition of disparate frames of reference that represent distinct world views. Hampton (1993) describes this work as both personally and professionally challenging. He described the tension in developing Indian education *sui generis* as one that “generates the creativity necessary for the development of the new Native education” (p. 270). Creativity arising from these inherent tensions plays a key role in the development of Indian education *sui generis*. Gamlin (2003) cites Elders to explain creativity as an “intrinsic aspect of survival [that] leads to new thinking and new behavior ... [and] follow[s] from listening to traditional values and then finding ways to practice them” (p. 16). Creative tension, perceived as a positive force, serves as a catalyst; otherwise, the tension may negatively affect the development of such a model of education. Strong leadership is required to ensure that creative tensions are addressed in positive and supportive ways including staff mentoring, professional development, ongoing communication, and the availability of adequate resources (InPraxis Group, 2006).

We also considered the possibility that declines in student performance may have occurred as a result of a high and unexpected enrollment of students with special needs. Fifty-three percent of students tested in the

first MECCS cohort met criteria for a learning disability based on a WISC-WIAT ability-achievement discrepancy. In the school's charter application, the anticipated enrollment of students with special needs was estimated to be 10-18% of the eligible student population (MECCS Society, 2002). Although it could be argued that the measures used in the study are not culturally appropriate, ability/achievement measures have to date not been developed for Canadian Aboriginal students, and the WISC/WIAT are still being used in Alberta to code students for learning disabilities.

Funding for academic support for students with learning disabilities in a charter school is the same as that for other school jurisdictions in Alberta, and additional funding is available for students with severe special needs. Basic funding is provided for all students from grades 1-9 who are registered in a school. Dollars are taken from this basic funding as necessary for students with mild or moderate special needs to provide additional supports. This funding formula is based on the expected number of students with mild/moderate disabilities in the general population, which has been estimated at between 5% and 10%. In a school district, resources may be pooled to support more than one special-needs teacher, or the funds may support the creation of special-needs classrooms with students attending from schools in the district. The funding formula, as described, does not meet the needs of an unexpected high enrollment of students with a mild/moderate learning disability, nor does it take into account the inability of charter schools to access special-needs classrooms that have been established through pooled resources in surrounding school districts. These funding challenges may have contributed to the progressive declines in student performance that occurred at MECCS.

How do we account for the large numbers of children who were enrolled at MECCS and met criteria for a mild/moderate learning disability? One possibility is that parents of children who were struggling in other schools, both provincially and federally funded, enrolled their children at MECCS when the opportunity for an alternative approach to their children's education became available. Another possibility is that cultural bias in the ability/achievement measures misclassified Aboriginal children as having mild/moderate learning disabilities. Misclassification may have resulted in the identification of high numbers of children with learning disabilities during the first year of enrollment but it would not account for declines in the scores that were noted over time.

The *Charter School Handbook* (Alberta Learning, 2001) asks and answers the question, "Must a charter school expand its range of educational programming to address the needs of all potential students, including those with special needs?" (p. 11). Specifically, it states that providing appropriate educational services for students with special needs does not apply to charter schools "since that responsibility is already delegated to local school boards" (p. 11). Herein lies the conundrum for MECCS; the

school's charter was granted to provide culturally compatible education for Aboriginal students; however, when the students registered, many required programming to address the challenges that were presented by their mild/moderate learning disabilities. Class size was recognized as an important component in the delivery of culturally compatible education; "classes will be capped at 18 students per grade ... and children will be taught at their own pace, with extra support from teaching assistants, parent/community members and tutors from University of Alberta Native Student Services to ensure mastery learning by each student" (MECCS Society, 2002) These preparations for the delivery of the mandated curricula along with parallel Indigenous curricula may have been overwhelmed by the special needs that were present in the school's population and may have been prevented by a funding model that supports the needs of the children who attend.

From an international perspective, the United Nations International Labour Organization (ILO, 1989) *Convention Concerning Indigenous and Tribal Peoples in Independent Countries*, Article 27(3) states,

Governments shall recognize the right of these peoples to establish their own educational institutions and facilities, provided that such institutions meet minimum standards established by the competent authority in consultation with these peoples. Appropriate resources shall be provided for this purpose.

The provincial legislation governing charter schools provides an opportunity for the establishment of such an Indigenous school; however, the adequacy and allocation of resources for students with mild/moderate learning disabilities is problematic. This dilemma is further complicated by the cultural foundation of the school. To deny admission to the school on the basis of an inability to provide programming for mild/moderate learning disabilities that is available to larger school boards is to deny the students access to the cultural component that is at the core of the MECCS charter.

The MECCS Society is supported by Calma (2008), Social Justice Commissioner of the Australian Human Rights Commission, who states, "Indigenous children with cognitive disabilities have the same need for culturally appropriate and inclusive environments as other children" (p. 17). This inclusive environment requires a balance between a student's Aboriginality and his or her disability, and the MECCS Society established the school to provide such an inclusive environment; however, charter school funding does not support such an endeavor. The current funding model creates an artificial divide between the social, cultural, religious, and spiritual values of the MECCS Society and the educational opportunities they are creating for Indigenous children and youth.

MECCS is the first and only Indigenous children's charter school in Canada, and a matched comparison group was, therefore, not available without confounding potentially important demographic or instructional

variables. Whether the declines in student performance that we observed would have been the same in a regular school program is not known. As the school continues in its development, ongoing monitoring of the progress of the children who are enrolled will be important. In the end, the hope is that a “self determined Indian education” will emerge (Hampton, 1993), structured by the cultures of those who attend and supported by a funding model that considers and provides for the unique characteristics of the children who attend.

Notes

¹Aboriginal is a collective term that is used here to denote the original peoples of Canada and their descendants, including First Nations, Inuit, and Métis peoples.

²All children are eligible to attend irrespective of their Aboriginal or Indigenous background.

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References

- Achenbach, T.M., & Edelbrock, C.S. (1978). The classification of child psychopathology: A review and analysis of empirical efforts. *Psychological Bulletin*, 85(6), 1275-1301.
- Alberta Learning. (2002). *Charter schools handbook*. Retrieved June 30, 2008, from: http://education.alberta.ca/media/434258/charter_hndbk.pdf
- Baydala, L., Letourneau, N., Bach, H., Pearce, M., Kennedy, M., Rasmussen, C., et al. (2007). Lessons learned through research with Mother Earth’s Children’s Charter School. *Pimatisiwin*, 5(2), 202-216.
- Boyle, M.H., & Willms, J.D. (2001). Multilevel modelling of hierarchical data in development studies. *Journal of Childhood Psychology and Psychiatry*, 42(1), 141-162.
- Calma, T. (2008). *Preventing crime and promoting rights for Indigenous young people with cognitive disabilities and mental health issues*. Sydney, NSW: Australian Human Rights Commission.
- Canadian Institutes of Health Research (CIHR). (2007, June). *CIHR guidelines for health research involving Aboriginal people*. Retrieved July 15, 2007, from: <http://www.irsc.gc.ca/e/29134.html>
- Cummins, J. (1981). Empirical and theoretical underpinnings of bilingual education. *Journal of Education*, 163(1), 16-29.
- Demmert, W.G. (2001). *Improving academic performance among Native American student: A review of the research literature*. Retrieved December 18, 2008, from: <http://www.crosscultured.com/articles/demmert.pdf>
- Gamlin, P. (2003). Transformation and Aboriginal literacy. *Canadian Journal of Native Education*, 27(1), 16-22.
- General Conference of the International Labour Organization. (1989). *United Nations International Labour Organization Convention 169: Convention concerning Indigenous and tribal peoples in independent countries*. Geneva, United Nations.
- Hampton, E. (1993). Towards a redefinition of American Indian/Alaska native education. *Canadian Journal of Native Education*, 20(2), 261-309.
- Harter, S. (1985). *Manual for the self-perception profile for children*. Denver, CO: University of Denver.

- Harter, S. (1988). *Manual for the self-perception profile for adolescents*. Denver, CO: University of Denver.
- Helmstadter, G. (1970). *Research concepts in human behavior*. New York: Meredith Corporation.
- InPraxis Group. (2006). *Effective professional development: What the research says*. Edmonton, AB: Alberta Education, School Improvement Branch.
- Israel, B.A., Schulz, A.J., Parker, E.A., & Becker, A.B. (1998). Review of community-based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health*, 19, 173-202.
- King, L., & Schielmann, S. (2004). *The challenge of Indigenous education: Practice and perspectives*. Paris: UNESCO.
- Meyer, M.S. (2000). The ability-achievement discrepancy: Does it contribute to an understanding of learning disabilities? *Educational Psychology Review*, 12, 315-337.
- Mother Earth's Children's Charter School Society. (2002). *Charter application for Mother Earth's Children's Charter School*. Presented to the Minister of Learning, Legislative Assembly of Alberta, Edmonton, AB.
- Neegan, E. (2005). Excuse me: Who are the first people of Canada? A historical analysis of Aboriginal education in Canada then and now. *International Journal of Inclusive Education*, 9(1), 3-15.
- Pearce, M., Crowe, C., Letendre, C., Letendre, M., & Baydala, L. (2005). Mother Earth's Children's Charter School: Imagining a new story of school. *Childhood Education*, 81(6, special issue), 343-348.
- Psychological Corporation. (2002). *Wechsler individual achievement Test examiner's manual* (2nd ed.). San Antonio, TX: Author.
- Rasmussen, C., Sherman, J., & Baydala, L. (2004). Learning patterns and education of Aboriginal children: A review of the literature. *Canadian Journal of the Native Studies*, 24(2), 317-342.
- Reynolds, E., & Kamphaus, R. (1992). *Behavior assessment system for children (BASC) manual*. Circle Pines, MN: American Guidance Service.
- Statistics Canada. (2005). *Aboriginal conditions in census metropolitan areas, 1981-2001*. (Catalogue No. 89-613-MIE- No.008). Ottawa: Author.
- Wechsler, D. (1991). *Wechsler intelligence scale for children manual* (3rd ed.). San Antonio, TX: Psychological Corporation.
- World Health Organization. (1997/1998). *Health behaviour in school-aged children: A World Health Organization cross-national study questionnaire*. Geneva: Author.