THE DEVELOPMENT OF A CANADIAN INSTRUMENT FOR MEASURING STUDENT VIEWS OF THEIR INCLUSIVE SCHOOL ENVIRONMENT IN A RURAL CONTEXT: THE STUDENT PERCEPTIONS OF INCLUSION IN RURAL CANADA (SPIRC) SCALE.

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This paper, the first in a series on inclusive education in a rural Canadian school district, reports an attempt to develop a succinct, common cross-age scale to measure student views on important school-related aspects of inclusive education. A lengthy scale, previously developed for use in a different study, was administered to 855 children in Grades One to Twelve in a school district in rural Alberta, Canada. A succinct 12-item scale was produced, addressing four of five conceptual areas thought to be important to inclusive education from a student's perspective, and within the Canadian educational context. This scale has been named the Student Perceptions of Inclusion in Rural Canada (SPIRC) scale. Future areas of study include the addition of a component addressing sentiments towards disability and inclusion in the newly refined scale.

Introduction

Educators throughout the world are becoming increasingly well acquainted with inclusive education. In its simplest form, inclusive education involves students from a wide range of diverse backgrounds and abilities learning with their peers in regular schools, with these schools adapting the way they work in order to meet the needs of all students in common learning contexts (Andrews & Lupart, 2000; Loreman, 1999). While the level of acceptance of the idea of inclusion, and the quantity and quality of research on inclusive education has been increasing and improving in recent years, there are still many avenues that have been inadequately explored. One of these areas is rural inclusive education. While this problem is an international one, in Canada especially, the absence of research on inclusive education in rural contexts is striking.

This study seeks to address the paucity of research in rural Canadian inclusive education by providing researchers with an instrument to use when surveying students regarding their experience in an inclusive school. This paper is the first in a series of papers outlining the results of survey research conducted in the Pembina Hills Regional School Division #7 (PHRD) in Alberta, Canada, conducted in November of 2007 (subsequent papers include Loreman, Lupart, McGhie-Richmond, & Barber, 2008; Loreman, McGhie-Richmond, Barber, & Lupart, 2008a; Loreman, McGhie-Richmond, Barber, & Lupart, 2008b; and other papers in preparation). One of the objectives of this study was to establish a succinct scale to measure important aspects of inclusive education from a student perspective, including academic achievement and expectations, social environment, community connectedness or involvement, sentiments about inclusion and diversity, and school enjoyment. The focus of this paper is to report on the development of a succinct, contextually relevant instrument with which to measure student views on key conceptual areas in inclusive education. Further, for reasons of comparability, it is also desirable to have a scale that contains questions which are well understood and which can elicit a response across age groups; questions which are relevant, and which *work* whether a child is 6 or 17 years old.

The context for the scale development: Inclusion in PHRD

This study was undertaken in a rural Canadian school jurisdiction where inclusive education was viewed positively, and embraced. PHRD was selected because this district has a clearly stated policy framed upon inclusive education, and an anecdotal history of excellent practice in this area. The

researchers were invited to conduct the research by district administration, who became collaborators in the project as it progressed.

PHRD covers a large geographic area in central Alberta, which incorporates industrial towns, historic farming communities, agricultural and government services centres, and regions rich in natural resources such as lumber, natural gas, and oil. The mainly Metis aboriginal population is approximately ten per cent of the student body (as self identified on school records). Wage rates are somewhat below provincial averages in the major urban centres, however unemployment is also generally lower than the provincial average (Pembina Hills Regional School Division #7, 2004). The diversity of industry in the PHRD, connected as it is to primary resources, along with its location in the hinterland of the relatively large city of Edmonton, means that the district shares much in common with many regional school jurisdictions throughout Alberta and Canada.

PHRD claims that *Our purpose is to ensure the delivery of an excellent education to our students so they become contributing members of society.* (Pembina Hills Regional School Division #7, 2006, p. 4). Further, PHRD states that

> *The unique needs of all students must be the primary focus when providing education. All students shall be given the opportunity to have their program delivered in a regular classroom in their community school with age appropriate peers and shall be given the support required to achieve success* (Pembina Hills Regional School Division #7, 2004, p. 8).

As stated in district policy

> *the placement of students with exceptional needs in regular school programs is based on a philosophy of equality, sharing, participation, and the worth and dignity of individuals. Most Albertans would agree that students with exceptional needs must be full participants in school and society. The students have the right to take part in regular activities, and when they do so, they have a better chance of developing their full potential* (Pembina Hills Regional School Division No. 7, 2004, p. 2).

This statement echoes the Standards for Special Education policy set forth by Alberta Education that stipulates that the education of students with disabilities in the regular classroom setting shall be the first option when considering appropriate educational placements (Alberta Education Special Programs Branch, 2004). As stated by a district administrator,*There are no regional special education programs running in PHRD, and parents cannot choose a segregated educational setting* (Hickey, 2006, personal communication).

At the policy level, PHRD is similar to many other districts in that there are clear guidelines depicting the roles, rights and responsibilities of district administrators, school staff, students and parents with respect to inclusion. However, there are some key differences. In particular, there are very clear guidelines to aid in the education of students with exceptionalities. Procedures exist for how to facilitate the transition of a child to how to assess a child. Additionally, there is a major section dedicated to the role of program assistants, which outlines the belief that these assistants are considered to be a key factor in the successful education of students with exceptionalities (Pembina Hills Regional School Division No. 7, 2004). Finally, it is notable that PHRD considers exceptional students as those who *require a different program or an adaptation or modification to the regular school program* (Pembina Hills Regional School Division No. 7, 2004, p. 8). That is to say, a child does not necessarily have to be formally identified and *coded* under the Alberta Education criteria to be considered exceptional. From a philosophical standpoint, this policy supports the idea that *all* children are diverse, and that *schools* must accommodate their unique needs, regardless of funding or formal identification. This environment, then, is an appropriate one in which to study the operationalization of inclusive education at both the school and district level.

Students and inclusive education: Key areas from the literature.

Broadly interpreted, inclusion acknowledges all forms of difference as having value, including cultural, racial, gender, ability, sexual orientation, and socio-economic circumstances. Children with exceptionalities, however, are one group who are at the forefront of the inclusion movement. For these children, whether they have a disability or are what might be termed *gifted*, academic and social challenges are prevalent in everyday life (Gadeyne, Ghesquière & Onghena, 2004; Jenkinson, 1998; Leyser & Kirk, 2004). It is well documented that children with disabling conditions who have special

learning needs are often achieving at a lower level than their peers (Kemp & Carter, 2006; Valas, 2001). Many of these children have difficulties with achievement, academic self-concept, and realistically estimating their own academic capabilities (Klassen, 2002; Lackaye & Margalit, 2006; Valas, 2001). The reasons for this are widely varied, and range from the severity of the exceptionality to the support and resources that are available to the student. In general, however, students with disabilities almost universally report lower levels of most psychosocial constructs than other students. The development of any scale to measure the inclusive experiences of students with disabilities most certainly needs to address academic issues that these students face.

Two main academic constructs that are consistently reported as low are academic self-concept and self-efficacy (Klassen, 2002; Lackaye & Margalit, 2006). Academic self-concept refers to the degree to which children perceive themselves to be academically competent (Marsh & O'Mara, 2008). Children with disabilities often report low academic self-concept in the form of lower levels of motivation, effort and achievement (Lackaye & Margalit, 2006; Marsh & O'Mara, 2008). There is evidence to suggest that teachers believe students with exceptionalities overestimate their academic abilities (Klassen & Lynch, 2007). However, the students believe themselves to have the ability, but attribute their lack of achievement to a lack of effort. In contrast, teachers attribute the lack of achievement to lack of ability. Given the discrepancy between perceptions and expectations of student and teacher, the issue warrants further investigation. Indeed, this paradox speaks to the complex interactions between academic self-concept and academic self-efficacy.

Academic self-concept is highly correlated to self-efficacy. However, self-concept refers to how well a child thinks he/she will achieve or self-perceptions of his/her environment whereas self-efficacy refers to whether or not the child thinks he/she can do the task (Bandura, 1997; Marsh & O'Mara, 2008). Klassen (2002) reported that, almost universally, students with learning disabilities (LD) report lower levels of global academic self-efficacy than their typically developing peers. These results were consistent for all age levels and suggest that, for students with exceptionalities, levels of academic self-efficacy are consistently lower for the duration of their lives. Interestingly, one study in this review suggested that the reason for this lower level of academic self-efficacy may be that students with LD do not see their classroom accomplishments as meaningful. Many students with exceptionalities spend more time on social and filler activities than academic pursuits (Schuster, Hemmeter & Ault, 2001), so it is not difficult to see why students may feel a lack of engagement and pride in their activities. Although a few studies exist, more research is needed to understand how academic self-concept and self-efficacy influence the academic achievement of students with exceptionalities.

This is not to say that every child with a disability feels exceedingly low about their academic abilities. Indeed, there are a range of reports for these children which vary in their findings. There is evidence to suggest that there is a correlation between the student's perception of his/her exceptionality and his/her academic self-concept as well as academic performance (Rothman & Cosden, 1995). That is, students with a more positive perception about their exceptionality had a more positive view of their academic abilities, and also had higher achievement than those students who had a more negative view of their exceptionality. However, on the whole, these children still reported lower levels of academic self-concept than their peers. Interesting is that up to 25% of students with exceptionalities report not being told that they had a disability, even though they were in special education classes (Cosden, Elliott, Noble & Kelemen, 1999). Not being aware of why they are struggling may contribute not only to lower levels of academic self-concept, but global feelings of self-concept, as well. A focus on academic self-concept and self-esteem, is of critical importance in any scale seeking to elicit student views on inclusive education.

In the search to understand what impacts students with exceptionalities in school, the focus on achievement often overshadows the social and emotional factors that contribute to a child's learning. Indeed, achievement alone does not account for all of the variation in the negative self-concept of students with exceptionalities (Rothman & Cosden, 1995). Children with exceptionalities must navigate complex social relationships and situations that they may not be familiar with, or have the metacognitive skills to deal with. Lackaye & Margalit (2006) examined non-academic constructs that affect learning in students with LD. Among other constructs, the authors explored loneliness, sense of coherence, mood, and hopeful thinking. Results suggest that students with LD experience significantly lower sense of coherence, effort investment, positive mood and hope. In addition, students with LD reported higher levels of loneliness and negative mood. These results should be a red flag for those in the field of education. There is evidence to suggest that social factors are as important as academic

ones; for if students feel competent socially they are also likely to feel competent academically (Welsh, Parke, Widamen & O'Neil, 2001). In sum, lower levels of social and emotional well-being, combined with a decreased sense of academic competence, contribute to the lower levels of achievement in children with exceptionalities. The school social climate, then, along with how much an individual student enjoys school, are two more areas which should feature in a scale measuring student views on inclusive education in their educational setting.

Given the focus on children with exceptionalities, children who do not have special learning needs are often overlooked when researchers consider the question of inclusion. There is very little literature on the impact of inclusion on typically developing students. Some studies that have investigated this issue have found interesting results. A meta-analysis by Nowicki and Sandieson (2002) examined the attitudes of school children towards people with physical and intellectual disabilities. Results suggest that children prefer to interact with people with physical disabilities compared to those with intellectual disabilities. In addition, girls were found to be more accepting of others with disabilities than boys. However, further analysis found this only to be true if the person was female. Of greater concern are the results that, in general, children without exceptionalities were negatively biased towards those with exceptionalities. Yet the study did corroborate previous evidence that suggests, even though children's attitudes were negative towards students with exceptionalities, they were still significantly more positive in an inclusive setting than in a segregated setting (Bunch & Valeo, 2004; Nowicki & Sandieson, 2002). These findings have broad implications for the implementation of programs to facilitate attitudes and perceptions in general classrooms towards students with disabilities. This also has implications for the development of a scale on addressing student views on inclusive education in their school. Firstly, any scale must be designed for use with all students, not just those with exceptionalities. Secondly, questions directly relating to attitudes towards disability and inclusion should form one of the components of the scale.

Finally, the success of inclusion has also been found to be impacted by support and involvement by the school community and community at large. Successful inclusion cannot exist solely within the confines of the classroom – it must be an attitude fostered within the school (Dei & James, 2002). For a child with a disability to be given equal access and opportunities, he/she must be accepted both by his/her classroom peers and all other members of the school. Further, for inclusion to transition past high school, the community must support the idea of diversity and different needs of people (Gallagher, Floyd, Stafford, Taber, Brozovic & Alberto, 2000). Indeed, communities that support the inclusion of students with special needs have a positive impact on the social, academic and work opportunities available to these individuals (Batorowicz, McDougall & Shepard, 2006; Dei & James, 2002). There is some evidence to suggest that in communities that support children with special needs, inclusion is more successful and that parents are more satisfied with their child(ren)'s educational programming (Stainton & Besser, 1998). Thus, the development of any scale about inclusion must also include items that assess the impact of the community on the inclusion process.

This research has all served to inform the current study. To truly get at the heart of the inclusive experience of students, it is clear from prior studies that issues such as perceptions of academic achievement and expectations, social atmosphere, sentiments or feelings about inclusion and disability, school enjoyment, and connectedness to the community are all important areas for exploration in order to help identify the level of success of an inclusive approach in the eyes of students.

Objective:

- To establish a succinct scale to measure important aspects of inclusive education from a student perspective, including academic achievement and expectations, social environment, community connectedness or involvement, sentiments about inclusion and diversity, and school enjoyment.

Method

Instrumentation

Prior to this study an appropriate and succinct scale for measuring school-related features of inclusive education in the eyes of students, which is also relevant to the rural Canadian context, was not available. However, the Diversity, Individual Development, Differentiation survey (DIDDs) was developed and used in a previous study (albeit in an urban context) by Lupart, Whitley, Odishaw, & McDonald (2006). The DIDDs, contained elements of what should be included in the scale given the above-cited research. The original DIDDs survey included the following themes: sense of school community and shared values (school culture); physical and emotional safety of school environment (safety and security); school commitment to growth (school development); availability of necessary resources that enable quality education for all students (student entitlement); and the curricular focus and climate of inquiry fostered within a school (learning and teaching). The scale is rather lengthy at up

to 59 items, and also was not developed with a rural context in mind. For the purposes of developing a more succinct scale, however, the DIDDs is a good choice because not only does it take the general Canadian context into account, but the large number of items offers considerable choice (following principal components analysis) with respect to what might be included in a more succinct scale. Another attractive aspect of the DIDDs is that there are three separate but connected versions for use with different age groups of children. The About Me 1 (AM1: for children in Grades One and Two) uses simple language, and an easy 3-point-Likert scale *Yes; Sometimes;* and *No*. There are 44 items on the AM1 and it requires more personal administration protocol. The About Me 2 (AM2: for children in Grades 3-6) uses the same questions as the AM1, but presented in slightly more advanced language when necessary, and a 5-point Likert scale of *True; Mostly True; Sometimes False/Sometimes True; Mostly False;* and *False*. The About Me 3 (AM3: for students in Grades 7-12) uses the same questions but with slightly more advanced language still (only where necessary), and a 5-point Likert scale. There are 59 items on the AM2 and AM3. For the purposes of this study, those items which did not directly correlate with the 44 items on the AM1 were discounted.

The DIDDs surveys were modified based on a review of the results of the Lupart et al (2006) study by an expert group of researchers, scholars, and graduate students familiar with inclusive practices in Alberta. Finalization of the instruments came after a thorough evaluation for clarity, and relevance of terminology and concepts by Student Services staff and teachers in PHRD. The items on the scales were ordered according to a random number chart, and included a number of *reverse coded* items. A high mean score on an item, factor, or the full scale indicated a positive response (taking into account reverse coding).

Administration

All children in the school division were given the opportunity to participate in the survey providing they had parental permission, with explanatory letters and consent forms with postage-paid return envelopes being sent to all families. The survey was administered on-line to participating students in Grades 4-12, during class time in November of 2007. All teachers supervising the on-line administration during class time were provided with common administration protocols designed to minimize administration error. Due to their young age, the questionnaire was administered to individual or small groups of children in Grades 1-3 using a paper version of the surveys. This administration was conducted by university research assistants who were trained in order to ensure consistency.

Sample

Data were returned from almost all schools in PHRD. The total sample for all surveys was 855 students

Table 1

Age of students included in sample.

Age		Frequency	Percent	Cumulative %
Valid	5	11	1.3	1.3
	6	109	12.7	14.2
	7	91	10.6	24.9
	8	104	12.2	37.2
	9	108	12.6	49.9
	10	96	11.2	61.3
	11	81	9.5	70.8
	12	61	7.1	78.0
	13	67	7.8	86.0
	14	64	7.5	93.5
	15	22	2.6	96.1
	16	20	2.3	98.5
	17	13	1.5	100.0
	Total	847	99.1	
Missing	System	8	.9	
Total		855	100.0	

from Grades 1-12, representing close to one quarter of all students enrolled in the district for the 2007-2008 school year. There were 404 girls (47.3%) and 442 boys (51.7%) with 9 students (1.1%) not indicating gender. The number of children in each age category was as above in Table 1.

A total of 145 students with identified exceptionalities were included in the sample, representing approximately 17% of the total sample. This number was higher than the overall percentage of students with identified exceptionalities in Alberta, which is generally around 10% in any given year(reference?). Children in each category of 'coded' disability were as follows in Table 2.

Table 2

Numbers of children in sample in each provincial special education coding category.

Code	Frequency	Percent	Valid Percent	Cumulative Percent
42: Severe Emotional/Behavioral	16	1.9	11.0	11.0
44: Severe physical or medical disability	8	.9	5.5	16.6
51: Mild cognitive disability	1	.1	.7	17.2
53: Emotional/ Behavioral disability	6	.7	4.1	21.4
54: Learning disability	47	5.5	32.4	53.8
56: Visual disability	1	.1	.7	54.5
57: Communication disability	37	4.3	25.5	80.0
58: Physical/medical disability	2	.2	1.4	81.4
59: Multiple disability	8	.9	5.5	86.9
80: Gifted	19	2.2	13.1	100.0
Total	145	17.0	100.0	
Not coded	710	83.0		
Total	855	100.0		

Results

Data reduction

In order to facilitate analyses across survey sample groups, items on the 5-point Likert scale of the AM2 and AM3 were collapsed to the 3-point scale used to evaluate the younger AM1 children. Responses of *1* and *2* (*True* and *Mostly True*) were recoded to equal 1; responses of *3* (*Sometimes False/Sometimes True*) were recoded to equal 2; and responses of *4* and *5* (*Mostly False* and *False*) were recoded to equal 3. The original 44 items of the survey underwent data reduction (i.e., principal components analysis) in a process consistent with that outlined in Loreman, Lupart et al. (2008) to establish a smaller meaningful number of comprehensive items (12) designed to capture the nomological network associated with student perceptions based on their inclusive experience. Following convention, item selection for the final scale was based on the magnitude of individual item loadings as seen in the varimax rotated component matrix. In order to assist with a unidimensional interpretation, the criteria that each item load significantly on a single subscale only was added (Thurstone, 1947; see Table 3). An examination of the resulting Scree plot (Catell, 1966), along with the results of the parallel analysis (855 respondents by 12 items), revealed the presence of four components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size. A final evaluation of each item included in the scale was verified by our understanding of the conceptual and practical aspects of inclusive education practices.

Scale validation is supported by a final factor structure characterized by a highly significant correlation between nearly all intra-factor items. Notably, the four-component solution explained a total of 58.47% of the total variance (Component 1 = 21.41%; Component 2 = 16.04%; Component 3 = 10.62%; Component 4 = 10.41%). A high level of sampling adequacy (Kaiser-Meyer-Oklin index = 0.71) (Kaiser 1970, 1974) and highly significant measure of sphericity (Bartlett's (1954) Test of Sphericity; $\chi^2(66) = 1514.4$; prob. = 0.000) further supports both the approach taken (PCA with Varimax rotation) and the suitability of the items selected to characterize the scale construct.

Table 3

Rotated component matrix resulting from principal components analysis of the student data.

Rotated Component Matrix[a]

	Component			
	1	2	3	4
School is boring	.801	-.026	.063	.042
I like school very much	.801	.239	-.004	.061
I look forward to going to school in the morning.	.782	.130	-.038	.185
My teacher wants me to do my best.	.007	**.784**	.013	.016
I can do well in school if I work hard.	.086	**.736**	.096	.065
A lot of things about me are good.	.193	**.663**	.068	.031
I sometimes spend recess by myself because other kids won't play with me.	-.008	.017	**.760**	.004
Lots of times, I feel lonely at school.	.046	.059	**.759**	-.059
I am one of the last to be chosen for groups or teams at school.	-.008	.088	**.667**	-.050
My parents and I often go to see plays or musical events.	.121	.002	-.075	**.775**
My parents and I often go to museums and galleries.	.100	-.046	-.234	**.718**
My parents and I often go to community events.	.041	.167	.171	**.678**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The internal validity of the 4-component factor solution as measured by Cronbach's alpha (Cronbach, 1951) was acceptable to us (0.59), especially given the extent of item reduction necessary to establish a relatively succinct scale. Reliabilities for the four subscales also appeared to us to be high given the number of items included in each factor (i.e., 0.74, 0.59, 0.59 and 0.60, respectively); hence validating the legitimacy of the individual components of the total scale. More appropriately, where a succinct item representation is the objective, mean inter-item correlations tend to represent a better estimate of internal reliability (Briggs & Cheek, 1986). Consequently, with regard to the 4-factor scale established here, mean inter-item correlations of 0.49, 0.33, 0.33, and 0.31, for each of the four subscales respectively, suggests an acceptable measure of component internal reliability (Briggs and Cheek suggest a figure of over 0.2).

Each of the four factors demonstrated strong conceptual links. Factor One clearly represents school enjoyment. Factor Two is a measure of school expectations and feelings of positive self esteem relating to academic accomplishment. Factor Three is about the school social climate, and Factor Four corresponds to the level of community involvement in school activities.

While the analysis of the combined data set of 855 students resulted in a clear, uni-dimensional scale, given that three slightly different scales were used to collect the data it is desirable to also analyze the results of each group separately (AM1, AM2, AM3) in order to see if the components of the scale are consistent across varying age groups.

Principal components analysis of the AM1 scale

The original 44 items of the AM1 survey underwent data reduction (i.e., principal components analysis) following the same procedure and criteria as outlined above. An examination of the resulting Scree plot (Catell, 1966), along with the results of the parallel analysis (206 respondents by 12 items), revealed the presence of four components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size.

Scale validation is supported by a final factor structure characterized by a highly significant correlation between nearly all intra-factor items. The four-component solution explained a total of 57.93% of the total variance (Component 1 = 23.06%; Component 2 = 13.53%; Component 3 = 11.84%; Component 4 = 9.50%). A high level of sampling adequacy (Kaiser-Meyer-Oklin index = 0.69) (Kaiser 1970, 1974) and highly significant measure of sphericity was evident (Bartlett's (1954) Test of Sphericity; $\chi^2(66) = 381.2$; prob. = 0.000) further supporting both the approach taken (PCA with Varimax rotation) and the suitability of the items selected to characterize the scale construct

Table 4
Rotated component matrix resulting from principal components analysis of the AM1 data.

Rotated Component Matrix[a]

	Component			
Item	1	2	3	4
My teacher wants me to do my best.	**.823**	.054	-.032	.058
I can do well in school if I work hard.	**.802**	.128	.091	.023
A lot of things about me are good.	**.731**	.066	.160	-.101
My parents and I often go to museums and galleries.	.038	**.769**	.195	-.122
My parents and I often go to see plays or musical events.	.017	**.756**	.121	-.090
My parents and I often go to community events.	.250	**.650**	-.242	.063
School is boring.	-.071	-.101	**.776**	.023
I look forward to going to school in the morning.	.147	.308	**.677**	-.136
I like school very much.	.401	.073	**.617**	-.147
Lots of times, I feel lonely at school.	.106	-.085	.181	**.812**
I sometimes spend recess by myself because other kids won't play with me.	.002	.021	-.129	**.684**
I am one of the last to be chosen for groups or teams at school.	-.105	-.087	-.157	**.467**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The internal validity of the 4-component factor solution as measured by Cronbach's alpha (Cronbach, 1951) was found to be reasonable (0.52) given the extent of item reduction necessary to establish this relatively succinct scale. Reliabilities for the four subscales also appear to be reasonably high for the number of items included in each factor (i.e., 0.72, 0.60, 0.59 and 0.39, respectively); hence validating the legitimacy of the individual components of the total scale. As above, inter-item correlations were examined (Briggs & Cheek, 1986) and internal reliability was found to be acceptable at 0.48, 0.34, 0.33, and 0.17.

Each of the four factors demonstrated strong conceptual links consistent with the components identified in the analysis of the overall 855-student data set, as well as being the most statistically meaningful solution. Factor One captures the essence of school expectations and feelings of positive self esteem relating to meeting one's goals. Factor Two relates to community involvement. Factor Three is about school enjoyment, and Factor Four accounts for school social climate.

Principal components analysis of the AM2 scale
The items on the AM2 survey were culled following the same approach used on the overall data and the AM1 data set. The final evaluation of each item included in the 4 resulting subscales was again based on our understanding of the conceptual and practical aspects of inclusive education practices in Canadian schools (see Table 5). Comparison with the factor structure and item composition established with the AM1 survey provided a measure of validation for both scales and aid in later comparisons between respondent groups. The original 5-point Likert scale featured on the survey was used for this analysis.

Scale validation is supported by a final factor structure characterized by a highly significant correlation between nearly all intra-factor items. For the AM2 the four-component solution explained a total of 59.62% of the total variance (Component 1 = 22.89%; Component 2 = 14.96%; Component 3 = 11.88%; Component 4 = 9.90%). A high level of sampling adequacy (Kaiser-Meyer-Oklin index = 0.70) (Kaiser 1970, 1974) and highly significant measure of sphericity (Bartlett's (1954) Test of Sphericity; $\chi^2(66) = 818.3$; prob. = 0.000) further supports both the approach taken (PCA with Varimax rotation) and the suitability of the items selected to characterize the scale construct.

Table 5

Rotated component matrix resulting from principal components analysis of the AM2 data.

Rotated Component Matrix[a]

	Component			
Item	1	2	3	4
I like school very much.	**.825**	-.006	.047	.217
School is boring.	**.813**	.116	.060	.000
I look forward to going to school in the morning.	**.781**	-.010	.216	.161
Lots of times, I feel lonely at school.	-.003	**.809**	-.030	.060
I sometimes spend recess by myself because other kids won't play with me.	.036	**.776**	.052	-.070
I am one of the last to be chosen for groups or teams at school.	.064	**.636**	-.012	.250
My parents and I often go to museums and galleries.	-.020	-.003	**.800**	-.040
My parents and I often go to see plays or musical events.	.142	-.074	**.784**	.045
My parents and I often go to community events.	.139	.075	**.621**	.060
My teacher(s) expect(s) all students to do their best.	-.052	-.007	-.019	**.827**
A lot of things about me are good.	.198	.033	.094	**.650**
I can do well in school if I work hard.	.206	.204	-.004	**.620**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The internal validity of the 4-component factor solution as measured by Cronbach's alpha (Cronbach, 1951) was reasonable (0.64) given the extent of item reduction necessary to establish a relatively succinct scale. Reliabilities for the four subscales also appear to be reasonably high for the number of items included in each factor (i.e., 0.77, 0.61, 0.60 and 0.55, respectively); hence validating the legitimacy of the individual components of the total scale. More appropriately, where a succinct item representation is the objective, mean inter-item correlations represent a better estimate of internal reliability (Briggs & Cheek, 1986). Consequently, with regard to the 4-factor scale established here, an estimate of internal reliability using mean inter-item correlations (Briggs & Cheek, 1986) produced acceptable results for each component of 0.53, 0.34, 0.34, and 0.29 respectively.

Each of the four factors also demonstrated strong conceptual links with the individual items comprising the subscales, and consistent with the components identified in the analysis of the overall 855-student data set and the reduced AM1 scale. This consistency is also evidence that the conversion of the 5-point Likert scale to a 3-point scale for the above analysis of the overall 855-student data set likely did not result in any analytical errors. Factor One appears to represent school enjoyment while Factor Two is about the school social climate. Factor Three is a measure of community involvement, and Factor Four reflects the student's expectations of school and feelings of positive self esteem relating to academic accomplishment.

Principal components analysis of the AM3 scale

The AM3 survey was culled following the same approach used on the overall data set, and the AM1 and AM2 data sets. Table 6 highlights the final evaluation of each item included in the 4 resulting subscales, which are relatively consistent with the findings on the other scales used in this study. Comparison with the factor structure and item composition established with the overall data set and the AM1 and AM2 surveys provided a measure of validation for all scales and will aid in later comparisons between respondent groups.

Scale validation is supported by a final factor structure characterized by a highly significant correlation between nearly all intra-factor items. The four-component solution for the AM3 explained a total of 65.54% of the total variance (Component 1 = 27.99%; Component 2 = 16.85%; Component 3 = 11.01%; Component 4 = 9.70%). A high level of sampling adequacy (Kaiser-Meyer-Oklin index = 0.77) (Kaiser 1970, 1974) and highly significant measure of sphericity (Bartlett's (1954) Test of Sphericity; $\chi^2(66) = 756.6$; prob. = 0.000) further supports both the approach taken (PCA with Varimax rotation) and the suitability of the items selected to characterize the scale construct.

Table 6

Rotated component matrix resulting from principal components analysis of the AM3 data.

Rotated Component Matrix[a]

	Component			
Item	1	2	3	4
I look forward to going to school in the morning.	**.877**	.112	.107	-.011
I like school very much.	**.856**	.170	.195	.080
School is boring.	**.816**	.259	.113	-.012
My parents and I often go to see plays or musical events.	.099	**.820**	-.007	.004
My parents and I often go to community events.	.111	**.791**	.163	-.001
My parents and I often go to museums and galleries.	.278	**.647**	.043	-.058
I can do well in school if I work hard.	.058	.088	**.797**	.116
My teacher(s) expect(s) me to do my best.	.142	.159	**.762**	-.036
A lot of things about me are good.	.172	-.059	**.636**	.220
I sometimes spend lunch by myself because other kids don't want to sit with me.	.006	.047	-.066	**.828**
I am one of the last to be chosen for groups or teams at school.	-.171	.059	.254	**.698**
I often feel lonely at school.	.256	-.211	.177	**.696**

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The internal validity of the 4-component factor solution as measured by Cronbach's alpha (Cronbach, 1951) was found to be good (0.74). Reliabilities for the four subscales also appear to be high for the number of items included in each factor (i.e., 0.86, 0.68, 0.63 and 0.62, respectively); hence validating the legitimacy of the individual components of the total scale. Mean inter-item correlations with regard to the 4-factor scale of 0.69, 0.42, 0.37, and 0.36 respectively for each of the four subscales suggest an acceptable measure of component internal reliability (Briggs & Cheek, 1986).

Each of the four factors demonstrate strong conceptual links that are consistent with the components identified in the analysis of the overall 855-student data set and on the AM1 and AM2 surveys. As with the AM2, this consistency is also evidence that the conversion of the 5-point Likert scale to a 3-point scale for the above analysis of the overall 855-student data set likely did not result in any analytical errors. Factor One is about school enjoyment. Factor Two is about community involvement. Factor Three is about school expectations and feelings of positive self esteem relating to that, and Factor Four is about the school social climate.

Discussion

The items comprising the original scale have been reduced to a succinct 12 items that address four of the five themes outlined in the objective of this study. A further analysis of each survey in isolation (AM1, AM2, and AM3) has demonstrated that these four components are consistent across age groups. This dual approach to the analysis, and the high level of consistency seen across all survey groups, helps to advance a strong argument for the validity and reliability of this 12-item refined scale. Interestingly, while the factors were the same across surveys, they presented in different order, indicating that the different age groups of children interpreted the questions in the same way, but differed in terms of the importance they ascribed to each component.

These twelve items, divided equally into four factors, now serve the purpose of capturing the themes of academic achievement and expectations, social environment, community connectedness or involvement, and school enjoyment in a new scale we have named the Student Perceptions of Inclusion in Rural Canada (SPIRC) scale. This demonstrates that, generally speaking, the DIDDs was an appropriate instrument to use in establishing these components. Unfortunately, some limitations of using the DIDDs for this study were evident. None of the questions relating to sentiments about inclusion or disability survived the data reduction process, and this remains a significant issue with reference to constructing a scale which is both succinct but which also addresses the important issues identified earlier in this paper. Ideally, a 15-item SPIRC scale including a component of three questions on this topic would be useful, and having questions on this theme included formed part of the objective

of this study. Unfortunately, many of the items on the original DIDDs scales were, statistically speaking, problematic with this data set, and items which addressed the theme of sentiments about inclusion and/or disability either loaded heavily on multiple components, or on none at all, making them unsuitable candidates for retention in the refined SPIRC scale.

This result gave us pause. The questions regarding sentiments about disability and inclusion seemed to be reasonably clear. They had loaded only on a single component in the prior Lupart et al (2006) study in an urban Alberta school district, and had been checked by a panel of university experts and PHRD staff for their clarity and appropriateness. An explanation for why none of these questions survived the data reduction process might be found in a chance comment made by a principal during a school visit. This principal, when discussing the administration of the survey, indicated that the students at her particular school were quite confused about some of the questions about students with special needs. They told her *We don't have any of those students here*. According to the principal, it was not that they did not understand what a *special need* is (this terminology is used consistently by students and teachers across the district), but rather that the school environment was such that students with disabilities were not viewed as *special*, but rather simply in the same way as any other child. This was further substantiated by similar observations made by the research teams when administering the surveys to students in grade 1-3. An interesting question arises from this interaction: in a truly inclusive school, where difference is the norm, can students successfully respond to questions which distinguish one group of children from another? Perhaps the school and district's success with inclusion precludes this possibility, and perhaps this is why questions about disability and inclusion were interpreted in various and different ways by the students.

While this might help to explain why a fifth factor on disability and inclusion was not identified in this study, it does not mean that this state of affairs is necessarily acceptable with respect to the construction of a more meaningful, useful scale. In examining diverse school contexts, questions about such diversity are important. For this reason, future administrations of the SPIRC scale should contain a selection of different questions on this topic, possibly ones which are broader, along with others which are more specific in focus, in an effort to produce a range of items which load strongly on a single component, and from which three can be selected for retention in an important fifth component of the scale.

The four components that comprise the current reduced version of the scale, however, are useful in helping to determine the extent to which inclusive practices in a rural school district may be working, given the importance assigned to these four themes in the literature.

Conclusion

This study has resulted in the development of a succinct, 12-item, 4-component scale for students which measures four aspects important to the success of inclusive education, including school enjoyment, school social climate, community involvement, and student expectations and self esteem. The refined version of the scale, however, remains incomplete. In future studies using this instrument, two important things need to happen. The first is the addition of questions which have the outcome of comprising a fifth factor of three questions relating to sentiments about disability and inclusion, and the collection of a data set which will confirm which particular questions should be included. Subsequent to that, a further data set should be gathered using the newly developed 15-item, 5-component scale in order to validate this scale.

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