

- ▶ **The Development of an Inuktitut and English Language Screening Tool in Nunavut**
- ▶ **Élaboration d'un outil de dépistage des compétences en inuktitut et en anglais au Nunavut**

Catherine Dench
 Patricia L. Cleave
 Jane Tagak
 Janice Beddard

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Catherine Dench M.Sc.,
 Qikiqtani School
 Operations and Kativik
 School Board,
 Montreal, Quebec,
 Canada

Patricia L. Cleave Ph.D.
 Dalhousie University,
 Halifax, Nova Scotia,
 Canada

Jane Tagak, Cert. Ed, Dip.
 Sp.Ed,
 Joamie School
 Iqaluit, Nunavut,
 Canada

Janice Beddard M.Ed.
 Nakasuk School,
 Iqaluit, Nunavut,
 Canada

Abstract

One of the challenges of providing speech and language pathology services to Indigenous communities is the lack of culturally appropriate screening and assessment tools. This paper describes the process used in the development of the *Inuktitut and English Language Screening Tool* intended for use in the Qikiqtani region of Nunavut, Canada. The project involved collaboration among teachers and the speech-language pathologist from Qikiqtani School Operations, a university faculty member, and several speech-language pathology students. The development of the instrument was informed by the social context and the features of the Indigenous language Inuktitut, and an understanding of ways to evaluate local language screening instruments.

Abrégé

La difficulté d'offrir des services d'orthophonie à des communautés autochtones repose en partie sur le manque d'outils de dépistage et d'évaluation adaptés à la culture. Le présent article décrit l'élaboration de l'*Inuktitut and English Language Screening Tool* (outil de dépistage de l'évaluation du langage en inuktitut et en anglais) destiné aux Opérations scolaires de la région Qikiqtani du Nunavut, au Canada. Cette initiative a demandé une collaboration entre les enseignants et l'orthophoniste des Opérations scolaires de la région Qikiqtani, un professeur d'université et plusieurs étudiants en orthophonie. L'élaboration de cet outil s'est faite à partir du contexte social et des caractéristiques de l'inuktitut et a aussi tenu compte des façons d'évaluer les outils de dépistage locaux.

Working as a speech-language pathologist in Indigenous communities presents many challenges. One of these is the valid assessment of a child's language skills. Tests and assessment methods that have been developed for use with English or French speaking monolingual children are not appropriate and their use can lead to inaccurate judgments about a child's language abilities (Ball, 2007; Kohnert, 2008; Silliman, Wilkinson, & Brea-Spahn, 2004). However, linguistically and culturally valid assessment tools are rarely, if ever, available. One solution to this problem is to develop a test locally. In her report on language and literacy development among young Canadian Aboriginal children, Ball (2007) recommends "the development of valid, reliable screening and diagnostic assessment tools in relevant languages" (p. 55) as an important step to support the provision of effective, culturally appropriate speech and language services. There may be further advantages to these assessment tools. McGroarty, Beck and Butler (1995) and Jones and Campbell Nangari (2008) argue that an accurate assessment of oral language skills may also raise the status of the Aboriginal language by formalizing the skill, help protect an endangered language, and improve the focus on and quality of educational programming and language teaching methods.

The purpose of this article is to describe the process used to develop an early elementary language screening tool which was intended for use in the Qikiqtani region of Nunavut, Canada. The project involved collaboration among teachers and the speech-language pathologist from Qikiqtani School Operations, a university faculty member, and several speech-language pathology students. The development of the instrument was informed by the social context and the features of the Inuit language Inuktitut, and an understanding of ways to evaluate local language screening instruments (Ball, 2007).

THE QIKIQTANI CONTEXT

Nunavut was founded in 1999 when the former Northwest Territories were divided into two. The culture is based on the Thule civilization, nomadic hunters who travelled by dogsled and kayak (Crago, Allen, & Hough-Eyamie, 1997). The communities have embraced modern technology, but traditional practices remain strong. The official languages of Nunavut are Inuktitut, Inuinnaqtun (a dialect of Inuktitut spoken in western Nunavut), French and English. The official vision is of a "fully functional bilingual society, in Inuktitut and English..." by the year 2020 (Government of Nunavut, 2000). Although Inuktitut is one of the few Aboriginal languages in North America regarded as having a chance of long-

term survival (Norris, 2007), recent census data showed a slight reduction in the number of people who identified Inuktitut as their mother tongue as well as the percentage of Inuit who used the language in the home (Statistics Canada, 2008).

The Qikiqtani region comprises the eastern third of Nunavut including Baffin Island, with a population of nearly 16,000. The 13 communities in the region vary in terms of their size and language influence from the South. Most communities have fewer than 1,500 residents, the vast majority of whom are Inuit. Across the region, Inuktitut is the language of the home in over 80% of households (Statistics Canada, 2006). Iqaluit, the capital of Nunavut, has some unique features. It is larger, being a community of just over 6,000 inhabitants, and it has the largest proportion of non-Inuit residents (ca. 40%; Statistics Canada, 2006). Language loss is a particular concern in Iqaluit. In contrast to other communities in the region where the percentage of Inuit is much higher (90+ %), more English (and to a lesser extent French) is spoken in Iqaluit. For example, according to the 2006 Aboriginal People's Survey, 49% of the Inuit population of Iqaluit reported using Inuktitut all or most of the time at home (a decrease from 64% during the 2001 census), as compared to 95% in the more remote hamlet of Arctic Bay (Statistics Canada, 2006).

An early foundation in Inuktitut instruction has been found to have an important positive impact on the development of academic language skills in Inuktitut and English (Wright, Taylor, & Macarthur, 2000), and in most communities in the Qikiqtani region, schooling is conducted mainly in Inuktitut until at least Grade 4. The Inuit teachers of these classes are native speakers of Inuktitut, strongly embedded in their community and culture. Most are graduates from the Nunavut Teacher Education Program, while some possess formal teaching qualifications from southern institutions. From Grade 4 onwards, classes are generally taught by English-speaking teachers from the South, although there continue to be classes delivered in Inuktitut. The system in Iqaluit is different. There, programs in Inuktitut, English and French are offered from Kindergarten onwards, with classes in English as a second language offered where appropriate from Grade 1 on. Regardless of the initial language of instruction, English is increasingly used as the language of education as the student reaches upper elementary, middle and high school. In Iqaluit, as elsewhere, students are also exposed to English in the community and in the media (Allen, 2007).

FEATURES OF INUKTITUT

Inuktitut has a number of features that differenti-

It is sometimes not possible to do a full evaluation of psychometric properties such as reliability, validity, and sensitivity. This is particularly true when working with a relatively small population. McCauley (2001) recommends a minimum of 50 participants per age group for standardized tools. If no sufficiently large population is available for testing, there are alternative ways to gauge a proposed instrument's usefulness and appropriateness as a screening instrument of a particular skill. McCauley (2001) describes various ways to evaluate assessment instruments. For instance, reliability can be assessed using test-retest reliability, inter-rater reliability, or measures of internal consistency such as split-half reliability.

Validity can also be assessed in a number of ways. Content validity can be assessed by having experts review the items to determine their relevance. When working with culturally or linguistically distinct communities, including Inuit communities, it is important that cultural informants, native speakers of the language, be used as experts to ensure linguistic and cultural appropriateness. Item analyses examine how each test item performs. Point biserial correlations can be used to determine the extent to which individuals' performance on a given item reflects their performance on the whole test. For example, individuals who achieved a high score on the test would be expected to respond correctly to a specific item more often than individuals who scored poorly on the test. Performance on specific test items can also be used to order them in terms of difficulty and to remove or reword items which do not differentiate students. For example, an item which all pass or which none pass would not differentiate the students. It is also important to establish construct validity. This entails showing that performance on the instrument relates to the construct (i.e., language) as expected. For instance, it would be expected that older children would perform better than younger children. There may also be groups for which there is a prediction of differences (e.g., those with typical development versus those with language impairments, or those from communities where the Indigenous language is considered strong versus those where it is considered weak). A final type of validity is criterion-referenced. Typically, this is established by correlating children's performance on the new instrument with an established one. With Inuit and other minority groups, an appropriate comparison test is not available generally. However, it is possible to correlate performance on the new instrument with teacher ratings or some other judgement of the children's performance.

THE DEVELOPMENT OF THE INUKTITUT AND ENGLISH SCREENING TOOL

The genesis for the development of a culturally

appropriate Inuktitut and English early elementary screening tool for use in the Qikiqtani region of Nunavut came from several different stakeholders. Inuit and non-Inuit teachers in Iqaluit were concerned about the quantity and quality of oral language skills of children entering the Inuktitut and English Kindergarten programs and noted that students who were weaker in their first language, whether Inuktitut or another language, were later having difficulty with Inuktitut and English literacy and academic skills. Such observations are in keeping with a relationship between oral and written language that has been well established in studies of English-speaking children (Stothard, Snowling, Bishop, Chipchase, & Kaplan 1998; Catts, Fey, Zhang, & Tomblin, 2001). Inuit teachers in particular reported that incoming students were not as fluent in Inuktitut as they had been in the past. Teachers and administrators were also interested in knowing the relative strength of Inuktitut or English in students, so parents could make informed decisions about the language of schooling and education staff could provide appropriate educational supports, such as special Kindergarten language classes, immersion educational approaches and/ or referrals to speech language pathology services. In addition, the speech-language pathologist involved with the project was interested in developing some local norms, so that children with speech and language impairments could be identified with more confidence. As a screening tool, the assessment needed to be a reliable and valid measure of oral language development, as well as quick and straightforward for teachers and support personnel to administer.

Several language screening tools already existed for Inuktitut-speaking children. The first was an undated "Screening of Speech and Language" that consisted of a culturally appropriate toy- and picture-based assessment with different tasks described for each of the grades from Kindergarten to Grade 3, and which formed part of a "Speech and Language Kit" of therapy materials originally produced by the Baffin Divisional Board of Education. Although the screening was available in every Nunavut school, it was rarely used, due to its length, complexity, and lack of norms or criteria to interpret the results. The Ages and Stages Parent Questionnaire (Bricker et al., 1999) had been translated into Inuktitut in the Nunavut community of Igloolik, but conversations with elders and others suggested that the focus on colour names, sentence length and morphemes, etc. was inappropriate given Inuit language structure and child-rearing priorities. With their input and traditional knowledge, a more culturally appropriate adaptation had been made. However, the revised communication section of the questionnaire included several items on written language, thinking, and fine motor skills rather than simply oral communication

sentence structure but not for narrative structure skills, which would have required a fuller transcription of the child's utterances and more complex coding.

ADMINISTRATION

Five examiners were trained in the screening administration by the speech-language pathologist and teachers involved in the project. It usually took about 45-60 minutes to describe the procedure and scoring, and to give demonstrations of the screening administration. In addition, new administrators were observed during the first few screenings to ensure that they delivered them consistently. Eventually, the two elementary schools in Iqaluit screened almost all incoming Kindergarten students and those entering Grade 1, resulting in a total of about 150 students. The majority of the children received both the Inuktitut and English versions, although when a child spoke only one language based on parental report, just one version was administered. In order to provide a measure of validity, the students' classroom teachers were asked to provide a separate rating of strong, average or weak for the students' oral language development in the language of instruction.

Providing an example of the community-university research partnerships recommended by Ball (2007), the results of these first administrations of the screening were analysed by students of Speech-Language Pathology at Dalhousie University under the supervision of the second author. Specifically, the reliability and validity of the screening test were assessed. The story retell subtest was not included in the analysis because of concerns about the language samples and ratings obtained. The examiners expressed uneasiness about their ability to be consistent in the ratings. They also reported that some children seemed "too shy" or were otherwise reluctant to speak. This is in keeping with Gould (2008), who found that this type of picture-supported story retelling was an ineffective method of eliciting language samples from Australian Indigenous children. She hypothesized that this was due to differences in the purpose of Aboriginal storytelling, such as the apparent futility of telling a story to somebody who already knew it.

RESULTS AND DISCUSSION

Significant correlations were found between the remaining subtests in both the Inuktitut and English versions indicating that the subtests were indeed measuring a common construct (i.e., language). An item analysis was used to determine the relative difficulty of the items and if all items performed as expected. Validity was demonstrated in two ways. In both languages, it was found that the children's screening scores were correlated

with their teacher's independent ratings of their language skills. The tests were developmentally sensitive in that children entering Grade 1 performed better than those entering Kindergarten. Finally, it was found that for those children who were screened in both Inuktitut and English, the vast majority performed better on the English version. This raised the concern that the Inuktitut and English versions of the screening test might not have been equivalent in difficulty, or that the tasks did not adequately assess language competency and development in Inuktitut. Alternatively, the lower scores in Inuktitut might have reflected Inuktitut language loss in Iqaluit. The observation that children newly arrived from more remote communities where little English was spoken performed very well on the Inuktitut screening provided some tentative initial evidence that the second possibility was more likely.

Based on statistical examinations and conversations with the staff at the schools, certain changes were made to the screening tool. These included changes to some of the picture stimuli, a reordering of subtests based on the performance of the students, and the removal of items which did not appear to contribute to the overall result. Equivalent items were removed from both English and Inuktitut versions. The major change was the addition of a sentence repetition section to replace the story retell task. As previously noted, the examiners had expressed serious concerns about the reliability and validity of the language samples obtained from the story retell and their ability to rate the samples consistently. For the sentence repetition task, Inuktitut sentences of increasing length and complexity were adapted from a sentence repetition task devised by Inuit special education teachers of the Kativik School Board in Nunavik, Quebec. The sentence content was evaluated and deemed appropriate by cultural informants from the Qikiqtani region of Nunavut. The sentences were modified to reflect the different dialects of Inuktitut in the area, and an English version of the sentences was developed.

In general, school staff reported that the screenings were straightforward and took about 20 minutes to administer to a student. The results proved helpful in identifying students with language and/or learning difficulties, and students who might need extra support or immersion educational approaches. The screening also flagged students for a follow-up with Speech and Language services, which are a very limited resource in the region. Most parents were interested in participating and receiving the results, and were at times surprised by their child's strength or weakness in a particular language.

During the second and third years of the project, the original versions of the screening test were readministered

to about sixty of the same students in Iqaluit as part of an end of year assessment by the school. The analyses revealed that the children received statistically higher scores a year later. Thus, the sensitivity to development that had been shown cross-sectionally was confirmed using a longitudinal sample. In addition, the Inuktitut screening tool was administered by school staff to a total of about eighty children in Kindergarten and Grade 1 in three remote communities where the Inuit language is used more frequently in daily life: Kimmirut, Arctic Bay, and Clyde River. Since there were concerns about whether the screening adequately assessed language skill in Inuktitut, we were particularly interested in determining how children who lived in more remote hamlets would perform on the Inuktitut version. As expected, the students in these three smaller communities performed much better on the Inuktitut screening than their peers in Iqaluit, suggesting that the screening measured differences in language development in Inuktitut. Construct validity was confirmed as children in Grade 1 performed better than those in Kindergarten. Subsequent evaluations have replicated this finding with cross-sectional data.

CONCLUSIONS

We have described the process of the development of the *Inuktitut and English Language Screening Tool*. Our aim was to develop a culturally appropriate language screening tool for use in the Qikiqtani region of Nunavut. The screening test needed to be quick and easy to administer so staff could deliver it reliably and independently. Qualitatively, school staff reported that it fulfilled these characteristics and that it has been useful for a variety of purposes in Qikiqtani schools. Administrators and clinicians in other parts of Nunavut have expressed interest in adapting it for local needs and norming. Quantitatively, analyses demonstrated that the screening is developmentally sensitive as shown both cross-sectionally and longitudinally. The correlation between the children's scores and teacher ratings of language ability provided additional evidence of validity, as did the fact that performance on the Inuktitut screening conformed to predicted community differences, and incidentally provided tentative evidence about Inuktitut language loss in Iqaluit.

The development of such a screening tool continues to be a work in progress, as screenings in different communities are used to develop local norms and to suggest changes to the assessment itself. In one community, for example, a teacher administered the *Inuktitut and English Language Screening Tool* to all the students from Kindergarten to Grade 3. Analyses of the results from these four classes suggested that the screening results were not informative

after the Grade 2 level, confirming the informal opinion of the project team on this subject and resulting in the request for an adaptation for use with older age groups. Several schools in the region regularly use the screening to identify incoming students for referral for oral language assessment, to provide information to parents and teachers about the oral language skills of students, to measure progress and to help guide decisions about support, including language classes, as well as referrals to other services. In Iqaluit, the results prompted reflection on the need for a different educational approach, one that incorporated principles of immersion education, to be used with students who were entering Kindergarten without fluency in the language of instruction. Other schools have been less interested in screening entire classes, due in part to time constraints and/or lack of resources and knowledge about how to help those identified. The first author regularly uses the screening as part of her evaluations in Nunavut schools, and where there has been interest, provides training and resources about how to help students who are identified as having weaknesses in one or both languages. In some schools, language groups have been organized to allow additional opportunities to develop oral language skills in Inuktitut.

Despite these successes, there are limitations to this tool, which should be kept in mind. As a screening, the tool is not a comprehensive assessment of oral language skill and care must be taken to ensure that it is not used as such. Specifically, evaluation of a child's language use in naturalistic contexts such as conversational or narrative samples would be an important part of a comprehensive assessment. Given the lack of alternative tools, there is a danger that the screening may be used with older students with whom it lacks validity, or to make major decisions about changing a student's primary language of instruction, which requires a more holistic evaluation of the student and the educational environment. The screening may not adequately reflect the inter-community differences in the region. For example, tasks and materials that are appropriate for a traditional community, such as a seal-hunting topic, may not be familiar to students living in Iqaluit. Changes have been made to the Inuktitut versions to reflect local dialectal differences. The simple pass/ fail scoring may miss relevant features in the student's response. Finally, on a practical level, as the tool is used in more communities and as the school staff changes, it is difficult to monitor administration of the tool. Examiners may not always achieve or maintain consistency in their delivery and scoring.

There are a number of factors that helped to make this endeavour successful. One was the serendipitous identification of the need for a screening tool by different

stakeholders, including teachers, the speech-language pathologist, and administrators, all of whom were willing to give time, energy and even financial support to the project. Native speakers of Inuktitut were involved from the beginning of the process to ensure the cultural and linguistic appropriateness of the tool. A university faculty member and speech-language pathology students were willing to work on evaluating the tool's properties. The opportunity to participate in the development of this clinical tool allowed the students to apply their knowledge of principles of assessment and working with linguistically diverse populations in a 'real world' context. By working collaboratively and being mindful of the goals and perspectives of all partners, the development of the *Inuktitut and English Language Screening Tool* has proved to be a valuable experience for all parties involved.

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AUTHOR'S NOTE

Correspondence should be sent to Catherine Dench, Qikiqtani School Operations, 3824 de Bullion, Montreal, Quebec, H2W 2E1, Canada. E-mail: catherine.dench@kativik.qc.ca ▶