In search of an effective method of measuring First Nations children’s speech and language development.

For the degree of Doctor Of Philosophy
Graduate Department of Applied Psychology and Human Development
Ontario Institute for Studies in Education
University of Toronto

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Acronyms

- FN - First Nations
- NFN - Non-First Nations
- DIF - Differential Item Functioning
- FNED – First Nations English Dialect
- EL – Early Learning
- RRDSB – Rainy River District School Board
- FNMIC – First Nations Metis Inuit Collaborative
Research Questions

- How difficult are test items for children of either group (FN and NFN)?
- Which test items are differentially difficult, before and after controlling for children’s overall performance on each subtest?
- What features and methods of administration of the test items might account for the differential difficulty?
Fluharty Preschool Speech and Language Screening Test-2

Does this screening test provide an effective and meaningful profile of First Nations children’s speech and language development?

Target: Rainy River District

Population: 20,370.
10 First Nations (FN) Communities
Rainy River District School Board (RRDSB) Student Composition:
  Aboriginal – FN - 875
  Aboriginal – Inuit – 1
  Aboriginal – Metis – 179
  Non-Aboriginal – 1924
Study Methodology

- Secondary analysis on data collected 2009, 2010 and 2011 screening at the RRDSB.
- Differential Item Functioning (DIF) to determine possible test item bias.
- The DIF detected items as well as some near significant DIF items were interpreted.
- RRDSB Native Language Curriculum Coordinator assisted with the interpretation based on his extensive knowledge of the FN children’s home language, culture and worldview.
The Importance of this Study

- Speech and language difficulties are one of the most prevalent issues with young FN children today.
- FN children may be wrongfully diagnosed with speech and language disorders and/or their skills and abilities may be underestimated based on current methods of measurement.
- It may be sending the child on a misguided trajectory for their school career and future career.
- The SLP profession is not confident in the results of their current methods of evaluating FN children.
- Early speech and language development impacts literacy development.
- The lack of this kind of research in Canada.
Information, Literature and Research that impact this study.

2. FN Language central to living and being (AFN, 1990; Treuer, 2012).
3. Ancestral language influences FNED/Characteristics of FNEDs (Ball et al, 2006; Cummins et al, 2006; Peltier, 2011; Wawrykow, 2012).
4. Very little empirical research in Canada
5. History continues to influence the education for FN – Eurocentric as opposed to Holistic way of learning (Antoine, 2000; Ball, 2008; Pascal, 2009).


8. What is lacking in Standardized Testing? (Dockrell, 2001; Hurton, 2009; Pullin, 2008; Tzuriel, 2001; Vygotsky, 1978)


10. Is it a language difference or language disorder? (Gould, 2008; McGregor et al, 1997; Pearce & Williams, 2013; Toohill et al, 2012).

11. True and authentic assessment involves FN families and their communities (Ball, 2005; Ball & Lewis, 2006; Gould, 2008; Peltier, 2009).
Articulation Subtest

- Uniform DIF
- Non-Uniform DIF

Percentage Incorrect Sounds in Words:
- NFN
- FN

Graph showing the percentage of incorrect sounds in words for different categories.
Repeating Sentences

The image shows a line graph with the x-axis labeled as "Subtest Item" and the y-axis labeled as "Percentage Incorrect." Two trends are depicted, one labeled "NFN" and another labeled "FN," indicating different performance metrics across subtest items.
Following Directives

![Graph showing the percentage of incorrect responses across different subtest items for NFN and FN categories. The graph indicates a significant increase in incorrect responses for FN starting from subtest item 6 onwards.]
Answering Questions

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- **Percentage Incorrect vs. Subtest Item**
  - **NFN** (dashed line)
  - **FN** (solid line)

- The graph shows a trend where the percentage of incorrect answers increases as the subtest item number increases.
Describing Actions
Sequencing Events

Percentage Incorrect

Subtest Items

- NFN
- FN
Differential Item Functioning Analysis Results

Six Phonology/Sound Items (Articulation subtest)

- Uniform DIF in favour of NFN group glove and flag
- Non-uniform DIF exhibited with spoon, truck and blocks and zebra

One Language item (Describing Actions subtest)

- Non-uniform DIF for “crawling.”
Repeating Sentences Subtest
- Before washing our hands, we have to turn on the faucet in the sink.
- If she falls down, she may get hurt.

Following Directives Subtest
- Stack three yellow blocks over there and stack 3 white blocks over here.

Answering Questions Subtest
- How can you tell if your shoes were on the wrong feet?
- What could you do if you forgot what (the teacher/your mother) said and you needed to remember?

Near significant DIF test items may illustrate syntax, semantic and worldview differences in languages.
Discussion /Interpretation of Results

Measures incorporating the following and SLPs with this knowledge may be more effective in determining FN children’s strengths, needs and next steps.

- Less compound, conditional complex sentences.
- Awareness of Ojibwe sound system – f,l,v.
- Differences in language structure – verbs vs nouns, wh-questions, rules of combining.
- Understanding local FN cultural and worldview perspective.
- Involving parents, families and community members into the assessment process.
- Incorporating prompting and non-standardized measures to allow different ways of demonstrating knowledge and pinpoint language differences instead of language disorders.
- Storytelling component.
- Observational assessment. (holistic, authentic)
Study Limitations

- May not transfer to other FN dialects or other Aboriginal communities.
- Analyses involved one standardized Speech/Language Screen.
- Not enough FN community collaboration (focus groups) for interpretation.

Study Impact

- First step in development of new tool or adaptation of this screening tool or others.
- Implications for intervention.
- Pre-service training.
- Influence other professions to critically evaluate their practices.
Future Research

• Employ qualitative methodology to further analyze quantitative results collected.
• Research differences in learning through EL classrooms based on the new method of teaching and allowing for exploration and inquiry employing more authentic assessment.
• Impact on current research projects within RRDSB.
• Introduction of more variables such as gender, language structure, language spoken in the home and location of residence.
• Indigenous methodology research.
Next Steps ... to date

Suggested Adaptations