

GENERAL SUMMARY

**VERBAL SOLUTIONS
OF RURAL ZULU-SPEAKING CHILDREN
TO PROBLEMS ENCOUNTERED IN EVERYDAY LIFE**

by

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A culturally appropriate test, The Test of Ability to Explain for Zulu-speaking Children (TATE-ZC) was developed, to measure verbal problem solving skills of rural, Zulu-speaking, primary school (7-12 years) children. The research aims to investigate the extent to which verbal problem solving skills are developing, in relation to the cognitive demands made, as a child progresses through school.

In the development of the TATE-ZC, consideration was given to language, content, cultural identity in illustrations, test administration and scoring procedures, in order to produce a test that is as 'non-biased' as possible. This test evaluates five thinking skills, viz. ability to explain an inference, to determine a cause, to answer a question in the 'negative why' format, to determine a solution and to explain how to avoid a problem. These thinking skills were identified as valid measures of verbal problem solving in the Test of Problem Solving (TOPS) (Zachman, Jorgensen, Huisingh and Barret, 1984), which was used as a basic model for the TATE-ZC.

The TATE-ZC consists of 15 line-drawn illustrations and 50 questions, plus one training item. All 50 questions are administered to each child. There are 10 questions for each of the five thinking skills, which are randomly presented throughout the test. Each answer is evaluated according to a set of guidelines and examples given for each score of 0-4. A test total out of 200 is then calculated as a percentage.

The focus of the TATE-ZC is verbal problem solving of social or pragmatic problems. Verbal problem solving was identified as a strategy for evaluating cognitive academic language proficiency or the application of basic language skills to learning and reading. The use of social or pragmatic problem solving is based on the assumption that it is a more culturally relevant strategy, for the evaluation of a cognitive construct such as thinking skills, in rural children, and that social reasoning is a precursor to more formal logico-deductive problem solving skills. Verbal expression was targeted, as it was believed that analysing what children say, gives insight into how children think. It is also verbal expression that is the medium used for evaluating all academic performance in the form of the written word. Competence with verbal problem solving would confirm competence with inferential comprehension in reading.

In the main study, The TATE-ZC was administered to six groups of children in The Valley of a Thousand Hills, Kwa-Zulu Natal, South Africa, from grade 2 - 7, with a fairly equal gender distribution (N=292). Results of the study indicated, that although mean scores revealed an increase in performance with maturity, statistically significant development in thinking skills did not occur on an annual basis, and that in some instances, development only took place after three years (Scheffe's Test $p < .05$). This was particularly true for children 10-12 years. In the light of poor academic performance for rural children, this research demonstrates, that lack of adequate thinking skills for learning could be a significant contributing factor.

KEY TERMS:

- **Abstract thinking skills**
- **Cognitive style**
- **Cognitive skill**
- **Concrete thinking skills**
- **Cross-cultural setting**
- **Explanation**
- **Literacy Experience**
- **Non-biased assessment**
- **Problem solving**
- **Second stage language development**
- **Social or Pragmatic reasoning**

OPSOMMING

VERBALE OPLOSSINGS VAN LANDELIKE ZOELOE SPREKENDE KINDERS VIR PROBLEME ERVAAR IN ALLERDAAGSE LEWE.

deur

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‘n Kulturele toepaslike toets, “the Test of Ability to Explain For Zulu-Speaking Children” (TATE-ZC) was ontwikkel, om verbale probleem oplossingsvaardighede van landelike Zoeloe sprekende primêre skoolkinders (7-12jaar) te meet. Die navorsingsdoelwitte was om die omvang te ondersoek van verbale probleem oplossing, wat ontwikkel in die verhouding tot die kognitiewe afhanklikheid soos ‘n kind deur skool vorder.

Oorweging was gegee in die ontwikkeling van TATE-ZC aan taal, konteks, kulturele identiteit in illustrasies, toetsadministrasie en punttoekenning prosedures, om ‘n toets te ontwikkel wat so onpartydig as moontlik is. Die toets evalueer vyf denkprosesse nl. vaardighede om die steuring te verduidelik, om die oorsaak vas te stel, om ‘n vraag te beantwoord in die negatief-hoekom formaat, om ‘n oplossing te vind en te verduidelik hoe om ‘n probleem te vermy. Hierdie denkprosesse is geïdentifiseer as geldelike maatstawwe van verbale probleem oplossing in die Toets van Probleem oplossing (TOPS) (Zachman, Jergensen, Huisingh en Baret, 1984), wat as basis model vir TATE-ZC gebruik is.

Die TATE-ZC bestaan uit vyftien lyntekeninge en vyftig vrae plus een opleidings item. Al vyftig vrae is gadministreer aan elke kind. Daar is tien vrae vir elk van die vyf denkprosesse wat deurgaans ewekansig in die toets aangebied is. Elke antwoord is geevalueer volgens ‘n reeks riglyne, en voorbeelde is gegee van 0 tot 4. ‘n Toets totaal uit 200 is bereken as ‘n persentasie.

Die fokus van die TATE-ZC is verbale probleem oplossing van sosiale of pragmatiese probleme. Verbale probleem oplossing is geïdentifiseer as 'n strategie vir die evaluasie van kognitiewe akademiese taal bekwaamheid of die toepassing van basiese taalvaardighede in die proses om te leer en te lees. Die gebruik van sosiale of pragmatiese probleem oplossing is gebaseer op die veronderstelling dat dit 'n meer kulturele relevante strategie is vir die evaluasie van kognitiewe samestelling soos 'n denkproses in landelike kinders, en dat sosiale redenasie 'n voorloper is vir meer formele logika-deduktief probleem oplossingsvaardighede. Verbale uitdrukking was geteiken van uit die oogpunt dat die analise van wat kinders sê, insig gee in hoe kinders dink. Dit is ook verbale uitdrukking wat as medium gebruik is vir die evaluasie van alle akademiese prestasie in die vorm van die geskrewe word. Vaardigheid met verbale probleem oplossing sal vaardigheid met afleibare begrip in lees bevestig.

In die hoofstudie was die TATE-ZC geadmistrateer aan ses groepe kinders in die Vallei van 'n Duisend Heuwels, Kwa-Zulu Natal, Suid Afrika, graad twee tot sewe met 'n redelike gelyke geslagsverspreiding (N=292). Resultate van die studie het aangedui dat alhoewel die gemiddelde punt 'n verhoging wys in die prestasie van maturasie, statistiese insiggewende ontwikkeling in denkprosesse nie voorgekom het op jaarlikse basis nie, en dat in sommige gevalle, ontwikkeling slegs plaasgevind het na drie jaar (Scheffe's Test $P < 0.05$). Dit was veral waar vir kinders in die ouderdomsgroep tien tot twaalf jaar. In die lig van swak akademiese prestasies van landelike kinders, het hierdie navorsing gedemonstreer dat die gebrek aan voldoende denkprosesse vir die leerproses 'n insiggewende bydraende faktor kan wees.

Sleutelwoorde

- Abstrakte denkprosesse
- Kognitiewe styl
- Kognitiewe vaardighede
- Konkrete denk prosesse
- Kruis-kulturele agtergrond
- Verduideliking
- Literêre ondervinding
- Onpartydige evaluasie
- Probleem oplossing
- Tweede vlak taalontwikkeling
- Sosiale of pragmatiese redenasie