

CHAPTER 7

CONCLUSION - THE FINAL WORD

7.1 INTRODUCTION

In concluding this project, there are three final questions, which must be answered before the final word. Firstly, after all the attempts to create a non-biased test, *is* the Test of Ability To Explain for Zulu-speaking Children actually culture free, and is it actually possible to create such a test? Secondly, having identified thinking skills as such a problem for rural children, can anything be done, and how? Finally who are the role players in the continued arena of creating culturally appropriate tests and materials?

This chapter reviews the TATE-ZC in terms of Vaughn-Cooke's (1986) criteria for a non-biased test. It discusses the critical issues around non-biased testing of African children, and finally looks at the most important aspect of all- intervention. The role of non-Zulu-speaking researchers and speech pathologists is discussed.

A critical evaluation of the study and implications for further research precede the 'final word'!

7.2 THE ISSUE OF 'CULTURE-FAIR'

The issue of 'culture-fair' is discussed in terms of Vaughn-Cooke's (1986) criteria (chapter 3, 3.2.1), and the theoretical context of the three types of intelligence (chapter 3, 3.3).

7.2.1 Is the TATE-ZC in fact, a 'culture fair' 'non-biased' test?

As a test instrument the TATE-ZC appears to fulfil all the stipulated criteria for a 'non-biased' test as identified by Vaughn-Cooke's (1986).

- It is based on valid assumptions about problem solving and its components (chapter 2, 2.7), which were shown to be universal, and statistically reliable measures of thinking skills for rural Zulu-speaking children (chapter 5).

- It has taken language into account through the systematic translation of the test (chapter 3, 3.4.1) and its administration by a mother-tongue Zulu speaker.
- It has taken cognitive style into account by presenting a concrete and familiar event pictorially, followed by questions which first targeted concrete information available from the picture, and then proceeded to an abstract level to give the child the opportunity to demonstrate abstract thinking skills. In this way the maximum possible amount of control was left with the child in presenting an answer (chapter 2, 2.7.5).
- As a developmental model it has identified mean scores stages of development for 7 to 12 year olds, and identified a possible developmental order in the acquisition of thinking skills for rural ZS children.
- The results of the test provide definite principled guidelines for intervention (chapter 7, 7.3).
- The test provides a detailed evaluation and description of the child's verbal problem solving abilities providing fundamental information as to Cognitive Academic Language Proficiency (Cummins 1985) which is the key to academic success (chapter 5).
- This test reflects the latest development in problem solving skills in its recognition that at the basis of all problem solving, is the *language* used to express cognitive processes and its vital relationship to literacy (chapter 2, 2.5).

Cultural sensitivity in the planning, designing, and implementing of the TATE-ZC is clearly demonstrated above, but is this adequate to claim that it is 'culture-fair' or 'non-biased' ?

7.2.2 The three types of intelligence theory

In itself, the TATE-ZC is not a test of intelligence although it deals with constructs significantly related to such tests. However, placing the TATE-ZC in the context of the development of intelligence tests, gives perspective as to how to analyse the extent to which a test is 'culture-fair'.

While intelligence types A and B underlie performance in all areas of cognitive endeavour, it is into the context of intelligence C, crystallized or culturally influenced intelligence, that the TATE-ZC best fits. At the outset of this project, it was stated that if the content of the test related to knowledge, which a rural the child was able to learn from a rural environment, the child would be given the opportunity to demonstrate best potential for verbal problem solving,

and should therefore be equal to norms of western children. This was not shown to be true. Can the test, therefore, be called 'non-biased and culture-fair' ?

The aspect of the test that was shown not to be culture-fair, is the aspect that requires the child to verbalize, and deal with language in an analytic manner. It is the aspect that would shift the child from one cultural and cognitive thinking style to another or from field dependence to field independence, and would enable a child to be more successful academically. As long as the TATE-ZC is used to identify ways in which to achieve this, as opposed to using the test to highlight comparative shortfalls, tests such as these can only contribute towards better educational achievement for rural children.

However it is in the domain of diagnosing a child as 'different' or 'deviant' (Labov, 1977), that the TATE-ZC does achieve the full status of 'culture-fair' and 'non-biased'. It is one of a few valid instruments for evaluating rural-Zulu speaking children in relation to standards and norms set by their own community. In particular, it is thus in the field of diagnosing a child with an authentic language-learning disorder that is intrinsic to the child, that the TATE-ZC may be effectively utilized.

7.3 THE PRACTICAL USEFULNESS OF THIS RESEARCH IN TERMS OF INTERVENTION.

One of the important criteria for developing cross-cultural tests, is that the test should have 'principled guidelines' for intervention, based on the results of the test (chapter 3, 3.2.1) (Vaughn-Cooke, 1986). Having identified that thinking skills and effective verbal reasoning are lacking in the children tested, the question that remains is, can this be remediated, and how? Most critically, how would one do this in rural Africa?

Research has shown that for 'poor readers', which is what rural African children may become due to lack of reasoning and inferential skills, intervention programmes *are* effective. Further, proportionally little time in classrooms has been allocated to developing inferential skills in relation to reading, compared with decoding skills. Of vital significance is that it is not merely more practice with answering questions that has been shown to be most effective, but actually

teaching children strategies for creating inferences (Hansen and Pearson, 1983; Winne and Prock, 1993). These findings are applicable to rural schools in South Africa.

The importance of oral reasoning or inferencing is strongly reinforced in these programmes in which, although the source of reasoning is text, the programmes are conducted orally. A brief outline of the focus of two programmes will be presented, identifying features relevant to the TATE-ZC. This will be followed by their application to Africa.

The first programme (Hansen and Pearson, 1983) consisted of the following three parts:

- The importance of drawing inferences between new information and existing knowledge was presented.

This relates to the scale explaining inferences, determining a solution and avoiding the problem.

- Students discussed events in their own lives that were similar to the topic to be read. They used this information to hypothesize what would happen in the text. Thus personal experience was related to the character's problem, goals, motives, key actions or problem resolutions.

This relates to the pragmatic content of the TATE-ZC.

- They were provided with many inferential questions to discuss after reading the text.

The second programme (Winne and Prock, 1993), while also focusing on the type of feedback that is required to improve inferencing skills, aimed to impart the following skills:

- Ability to apply the rules of how to operate on information in a text when the child lacks prior knowledge (schemata) of that issue, i.e. how to identify the critical fact.
- Ability to apply a set of rules which help the child identify what aspects of the text must be retrieved in order to create an inference.

This relates to all scales, Explaining Inferences, Determining Cause, Negative Why, Determining Solutions and Avoiding the problem.

- Ability to apply rules which enable the child to create inference independent of the content of the passage.

This relates to Determining Cause, Determining solution and Avoiding the Problem.

The type of feedback found to be most effective was that, which explicitly explained how to make inference as opposed to merely correcting the error.

The strategies used in these programmes have sound theoretical foundations in concepts of dynamic potential (chapter 3, 3.3), in which potential for learning is developed through mediation and training in thinking skills, as well as enhancing learning through repeated exposure, and exposure to instruction and prompts.

There are two essential factors present in these programmes which are contrary to teaching style in African schools today (Macdonald, 1990). One, is that the success of the programme depended on individualized tutoring and second, that the manner of operation was highly interactive. In addition tutors involved in the programmes were extensively trained in facilitating inferential thinking.

The ability to inference effectively has application for all academic work and is therefore a relevant focus for broad-based intervention in rural schools. Text is available in Zulu in all schools, even if it is limited. What is required is intensive training of teachers, the possible involvement of student teachers and the commitment to apply the strategies on a *long term basis throughout the child's school career*, if these skills are to be maintained and become part of the child's cognitive style that will facilitate further academic progress.

7.4 WHO ARE THE ROLE PLAYERS?

Demographics inform us that of the 45.000.000 people living in South Africa today, 40,000,000 speak one of the 9 African languages. Yet, to date there are only a handful of mother-tongue African language speech therapists. Further, with the changing orientation in service delivery to improve quality of service to African L1(first language) clients, the great need for the development of culturally and linguistically relevant assessment material is evident.

The critical question is, who will develop these tests, and in terms of current reality, is it acceptable and possible for non-Zulu speaking therapists to fulfil this role?

This research has confirmed that, with appropriate consultation with community members, with close adherence to translation protocol and with an in-depth insight into the critical issues related to multi-cultural testing, it is possible. The complexity of the process requires commitment to the task and a humble respect for the bilingual Zulu speakers on whom we depend. But, the fact that a statistically valid test such as the TATE-ZC has been produced, provides evidence for the fact, that non-Zulu speaking therapists *can* make a contribution.

7.5 A CRITICAL EVALUATION OF THE STUDY

Although the scientific method encourages researchers to control for all variables, this is extremely challenging when working in the arena of cross-cultural issues, multi-lingualism, disadvantage and a society in transition, with an education system in great flux. The implementation of this research project has forced the researcher to recognize the critical issues in each of these complex areas and to attempt to integrate them into a methodology acceptable to the scientific world. However the limitations of this attempt must also be recognized.

- There is a contradiction in attempting to develop a culture-fair test in an arena that is not part of the culture. However this is just one aspect of the implications of a society in transition. Efforts must continue to be made to develop field dependent thinkers into field independent thinkers to improve educational success.
- Although much effort went into ensuring that cultural and linguistic factors were adequately dealt with, odd words still needed to be changed in the questions, and one can never claim one hundred percent cultural accuracy when you are not from the culture being evaluated.
- A strength of the study lay in the two pilot tests, which led to the creation of a test instrument that was as accurate as possible under the circumstances.

- The test setting and environmental noise are some of the aspects that one cannot fully control for in a rural area, with some children being tested in a room, and others outside, with shouting neighbours, noisy trucks and children talking in the school grounds.
- Although the test procedure was accurately implemented, one cannot account for the individual personalities of the different research assistants and how much that actually affected how the children answered the questions.
- Further, although children were repeatedly asked not to talk about the test, one could not be sure that they did not.
- A limitation was found to exist in the scoring of answers, which could be vague and difficult to access exactly what the child was intending. Thus despite an attempt to provide guidelines and examples there were still a number of questions which required time and re-analysis to ensure accurate allocation of scores.
- As described, the correlation of TATE-ZC scores with academic results was very problematic due to the inconsistency of marking and recording of performance in the schools. It did however serve to highlight that very factor as an area needing intervention for overall improvement of the education system.
- The greatest limitation of all however, was the researcher's inability to speak Zulu, and play a more direct role in the data collecting and dealing with the exact words uttered by the children themselves.
- The greatest benefit, is that after all this effort and cost, the research has been of practical use in that a test has been produced and therapists and researchers can use it to provide a better service to the children.

7.6 IMPLICATIONS FOR FURTHER RESEARCH

As stated in the methodology, research begins with a question – but it also gives rise to many others. Some suggestions for further research follow.

- It was noticeable that despite, relative poverty, poorly resourced schools and lack of well developed pre-school education, there were some children who performed outstandingly-particularly in the lower grades. *What are the factors in the child, the family, the society and culture that contribute to such outstanding performance?*
- An error analysis of answers was provided and expressed in terms of inferential text. *What are the exact trends linguistically and semantically that are being demonstrated by these children in faulty answers?*
- It is recognized that the child has his/her own untapped potential, is part of a family, and an education system. The child is also open to different types of intervention at different ages. *Who is the most effective target person for intervention in this context, at different stages of the child' development? The child, the parent , the teacher or a combination?*
- Results of this study show slow development of thinking skill in the primary school phase. *What would be the level of performance of high school children be, on this test?*
- The TATE-ZC achieves its credibility as a culture fair test when it is used to identify 'pathology' or disability. *How would rural Zulu-speaking children with known learning disability, perform on such a test? Would it be a reliable diagnostic tool?*

7.7 A CONCLUDING STATEMENT-THE FINAL WORD

The aim of education is to develop literate language skills, which enable an individual to interpret and express complex ideas, thoughts, and abstract reasoning. These skills gradually develop from oral language skills (Tannen, 1982), and include thinking and reasoning skills such as those targeted in the TATE-ZC. It has been proposed that there is an urgent need for research into the area of Cognitive Academic Language Proficiency in disadvantaged African children in order to address the issue of poor academic progress (Pakendorf, 1996).

In administering the TATE-ZC we are able for the first time, to identify with some degree of accuracy the extent to which a rural Zulu-speaking child possesses the thinking skills fundamental to the development of Cognitive Academic Language Proficiency, adequate inferential comprehension of text and good potential for academic success.

SUMMARY

In this chapter, a critical review of the TATE-ZC as a truly 'culture-fair and non-biased' test led to the conclusion, that whereas the test itself fulfilled criteria of being 'non-biased', the construct tested, verbal thinking skills is not. However as a diagnostic test, the TATE-ZC provides clinicians with a culturally relevant criterion-based test, with associated norm equivalents. Programmes for the improvement of inferential reasoning were described, with recommendations for rural schools. It was concluded that non-Zulu speaking therapists can play a constructive role in the development of culturally relevant material, and that the TATE-ZC provides reliable data on the performance of rural Zulu-speaking primary school children on verbal problem solving skills. Limitations of the study and suggestions for further research conclude this study.