



Our journey with the gremlins of test development in a cross-cultural setting

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The South African context

Pre-1990s:

- Assessments for separate cultural/language groups (Claassen, 1997, Foxcroft, 1997)
- HSRC almost exclusively developed and adapted standardised tests for SA (Foxcroft, 2004)
 - Little transference of skills to post-graduate level students in psychology
 - Test development focus shifted during restructuring of HSRC in early 1990s

Post-apartheid:

- Very few culturally relevant tests have been developed in South Africa since 1990 (Foxcroft, 2004)
- Lack of test development capacity (Foxcroft, 2004)
 - Test development skills at PsyTech and SHL and pockets of skills at research units at universities
 - Diversity of SA cultures complicated by variation of acculturation towards more Western norms (Claassen, 1997)

Our theoretical framework

Universalism:

- Assumed on basis of work done by Dehaene that basic cognitive processes in mathematics are universal across cultures
- Assumed that culture will influence the further development and expression of these processes (Berry et al, 2003)

Followed a derived emic approach to test construction:

- Assessment is based on the underlying cognitive mathematical processes as defined in the work of Dehaene (etic approach)
- Assessments adjusted to the cultural realities of South Africa (emic approach)

Test bias

Strategies (Van de Van de Vijver and Tanzer, 1997) employed to limit construct, method and item bias:

- Cultural decentering : Use of a story with unique South African appeal across cultures and urban/rural settings, limited the influence of educational exposure to question formats by making it a play-format
- Use of committee members with expertise in the local culture and language for translation of items
- Cross-cultural comparison for construct validity
- Extensive training of test administrators
- Detailed manual for test administration and scoring
- Detailed test instructions
- Collected biographical data to check influence of subject/context factors
- Judgmental methods of item bias detection

Test equivalence

Aim to achieve Van de Vijver and Tanzer's definition of scale or full score equivalence:

- Thus scores obtained can cross culturally be understood the same way – a bias free test
- Strategies we used to achieve this goal:
 - Used German test as sourced, translated into English (second source) and then Afrikaans, isiZulu and Sesotho
 - Translation/back-translation followed by committee approach
 - During piloting we checked word connotations in the items, e.g. “fruit”
 - Provide test administrators with test instructions in all four languages we are working with
 - Using test administrators that are native speakers of the target language
 - Testing native speakers and then putting their scores on the same metric through Rasch analyses and checking the factor structure of the different tests
 - Items used are not dependent on previous exposure to question types in school environment- play format of testing

How we fared so far?

Language:

- Most critical moderator of test performance (Nell, 1994)
- Word connotations, e.g. use of “much”, “fruit”
- What is considered to be the child’s home language, in a multilingual society whom mixes psycho-lingual codes?
- Who decides a child’s home language?
- Unique interplay between home language and the medium of testing and the medium of instruction

What we learned: home language and testing language

Home language and the language in which testing was done	Frequency	Mean
No correspondence	63	60.851
Correspond	256	67.673
Missing information	1	

What we learned: home languages and language of instruction

Correspondence between learner's home language and the medium of instruction in school	Frequency	Mean (%)
No correspondence	212	63.70
Correspond	108	71.31

Conclusions

Meeting The International Test Commission's Guidelines for Adapting Educational and Psychological Tests (Hambleton, 1994) is a work in progress:

- Defined what we consider the home language of the child
- Added additional criteria for identification of the target population based on correspondence of home language with medium of instruction and language of testing
- Evidence of language groups fit the model (Afrikaans, Sesotho and IsiZulu)

Way forward

Towards a cross-cultural test:

- Evidence that two English groups (English HL and English FAL) fits the model
- Differential item functioning