



# THE VALIDITY OF STANDARDISED VISUAL PERCEPTUAL TESTS IN IDENTIFYING SPECIFIC LEARNING DISABILITIES IN CHILDREN FROM THE GAUTENG PROVINCE, SOUTH AFRICA

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# INTRODUCTION

- Standardised tests are routinely used for assessment of visual perception and VMI skills in OT.
- All tests - standardised on samples of children from the USA.
- Do not clearly discriminate dysfunction.
- Some of the subtest items children either over or under score.



- New revised editions of the tests most commonly used - DTVP-3, DTVMI-6 and TVPS-3.
- Preferable to use visual perceptual tests which have been proven useful in the identification of visual perception and VMI dysfunction in South African children.
- No research is available on the use of the new editions on children in SA.
- Not known how valid these tests are for children in this country.



# AIM AND OBJECTIVES

**Aim:** To compare the scores on the DTVP-3, DTVMI-6 and TVPS-3 obtained for mainstream learners in South Africa to those reported on USA samples

## **Objectives**


- To determine scores on the DTVP-3, DTVMI-6 and TVPS-3 for mainstream learners six to nine years
- To determine the validity of the tests for South African learners by comparing their scores to the USA norms

# METHODOLOGY

## Research design

- Cross-sectional, comparative, quantitative design

## Sample

- Learners from the West Rand area of Gauteng
  - Foundation phase learners from grade one to four from the ages of six to nine years
  - Urban, middle class background
  - N = 48; 12 Participants in each age group
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# Measurement instruments

- **Demographic questionnaire:** Designed by the researcher to obtain personal information, medical and scholastic history of the learners

## DTVMI-6

- Standardised norms for two year-olds
- Renormed in late 2009, early 2010

## DTVP-3

- Position in Space (PS), Spatial relations (SR) and Visual Motor Speed (VMS) are three subtests that were removed from the test

## TVPS-3

- Three composite scores namely; basic processes, sequential processing and complex processes

## Research procedure:

- Ethical clearance and permission for the study was obtained
- Participant's gave verbal assent
- Once parents gave informed consent participants were identified
- Arrangements were made with for suitable times for the assessments to be completed
- Assessments were administered face to face in a quiet and comfortable room at a table and chair
- Duration of the assessment was approximately 60 to 90 minutes with a 5-10 minutes break between assessments
- Order of assessments was randomised



# RESULTS AND DISCUSSION

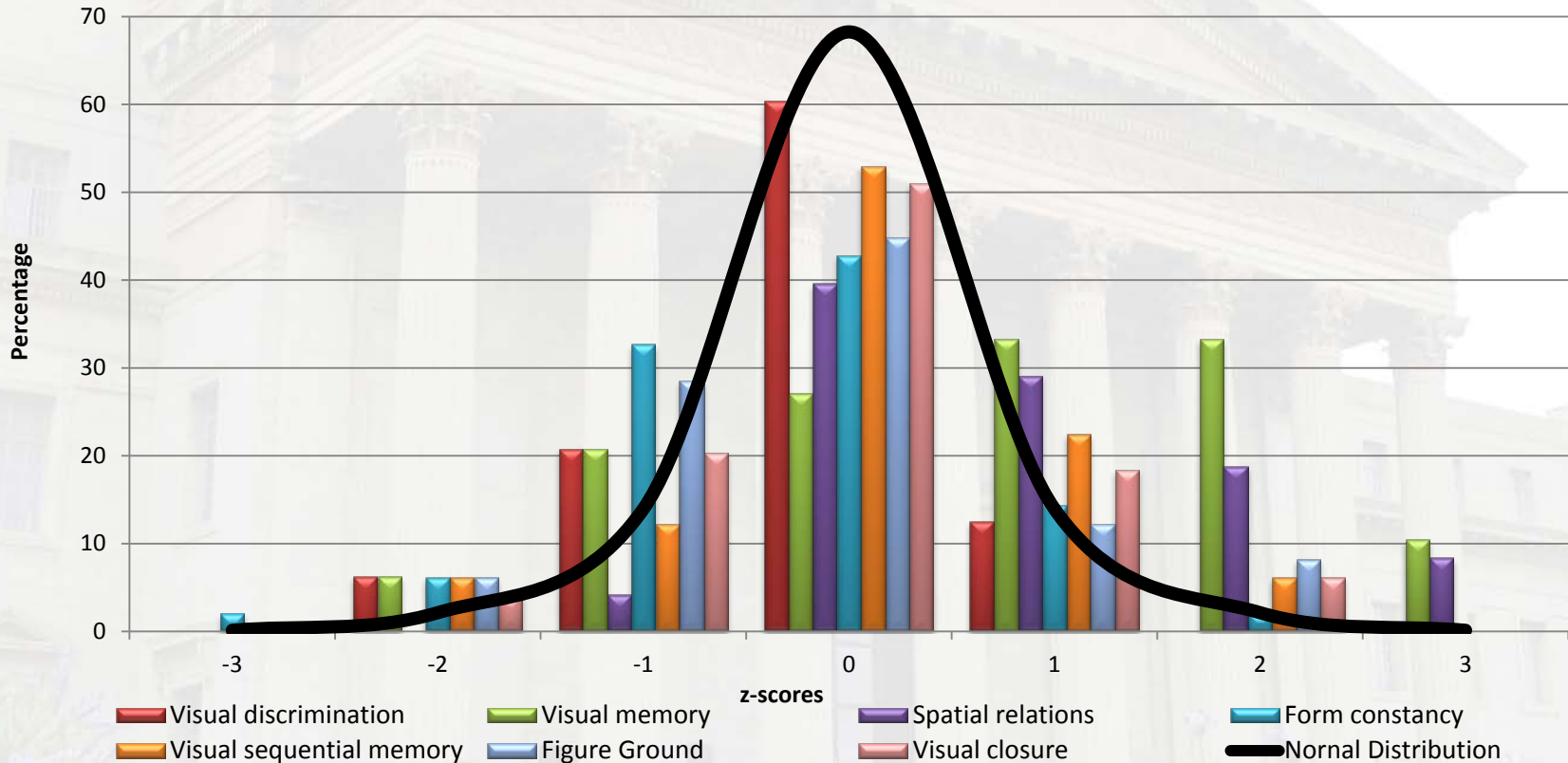
## TVPS-3

Higher scores on the spatial relations subtest (13.10) and lower mean scale scores on the visual discrimination (8.81) and form constancy (8.81).

	<u>Mainstream: Group</u> (n=48)	<u>TVPS-3: USA based norms</u> (n=2,008)
<b>Variable</b>	Mean Scale Score (SD)	Mean Scale Score (SD)
<b>Visual discrimination</b>	8.81 (2.80)	10 (3)
<b>Visual memory</b>	10.79 (4.27)	10 (3)
<b>Spatial relations</b>	13.10 (3.43)	10 (3)
<b>Form constancy</b>	8.81 (3.49)	10 (3)
<b>Visual sequential memory</b>	10.79 (3.51)	10 (3)
<b>Figure Ground</b>	9.58 (3.63)	10 (3)
<b>Visual closure</b>	10.02 (3.32)	10 (3)
<b>General Composite Score</b>	100.31 (10.42)	100 (15)



# TVPS-3



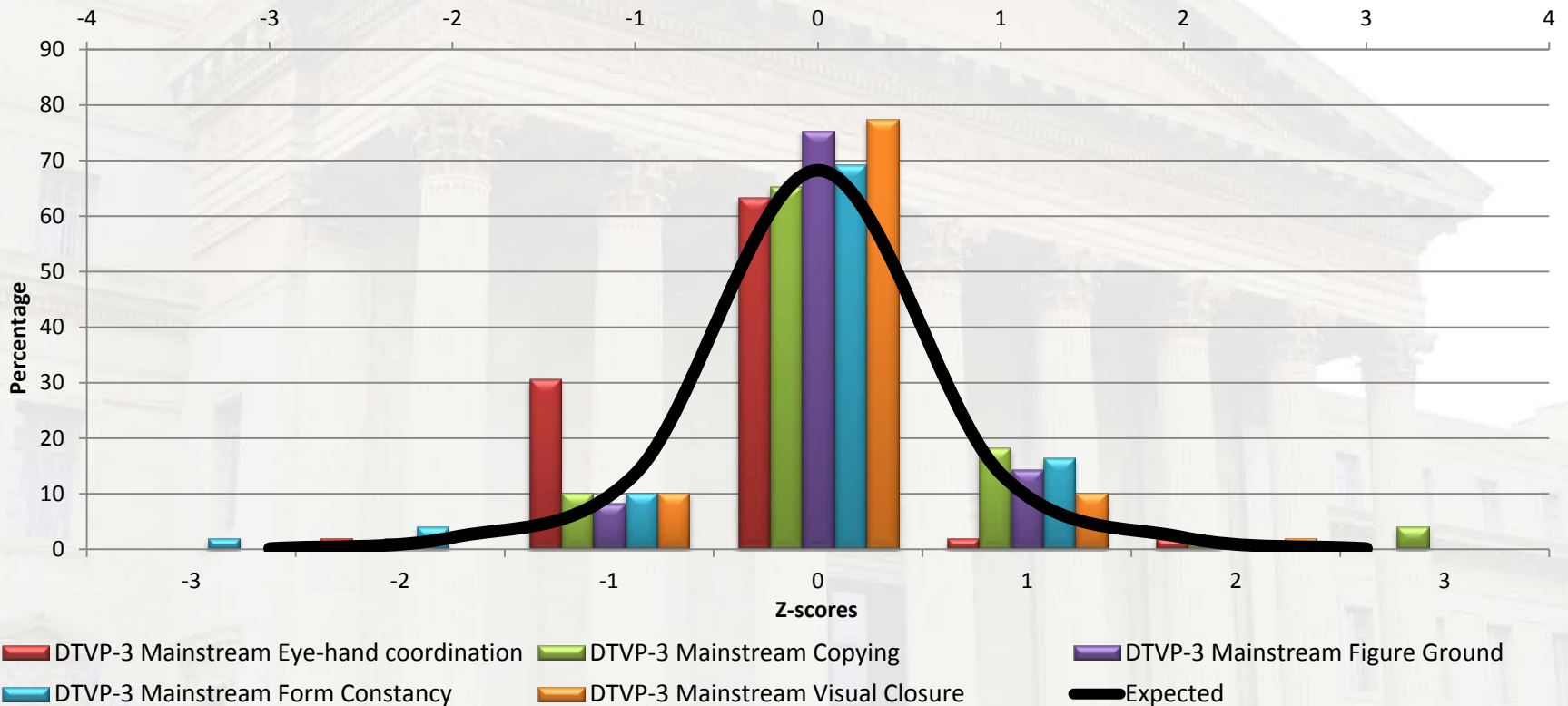
➤ Scores obtained by South African mainstream participants fell within the normal distribution.

## DTVP-3

Two subtests were found to differ from that of the American norms namely; eye-hand coordination (8.68) and copying (11.12).

	<u>Mainstream: Group</u> <u>(n=48)</u>	<u>DTVP-3: USA based</u> <u>norms.</u> <u>(n=1,035)</u>
Variable	Mean Scale Score (SD)	Mean Scale Score (SD)
DTVP-3 Eye-hand co-ordination	8.68 (2.26)	10 (3)
DTVP-3 Copying	11.12 (2.61)	10 (3)
DTVP-3 Figure ground	10.20 (2.05)	10 (3)
DTVP-3 Visual closure	9.72 (2.45)	10 (3)
DTVP-3 Form constancy	10.25 (2.05)	10 (3)
DTVP-3 Visual-Motor integration composite	99.43 (11.80)	10 (3)
DTVP-3 Motor reduced composite	100.35 (9.53)	10 (3)
DTVP-3 General visual perceptual composite	99.89 (9.35)	100 (15)

# DTVP-3



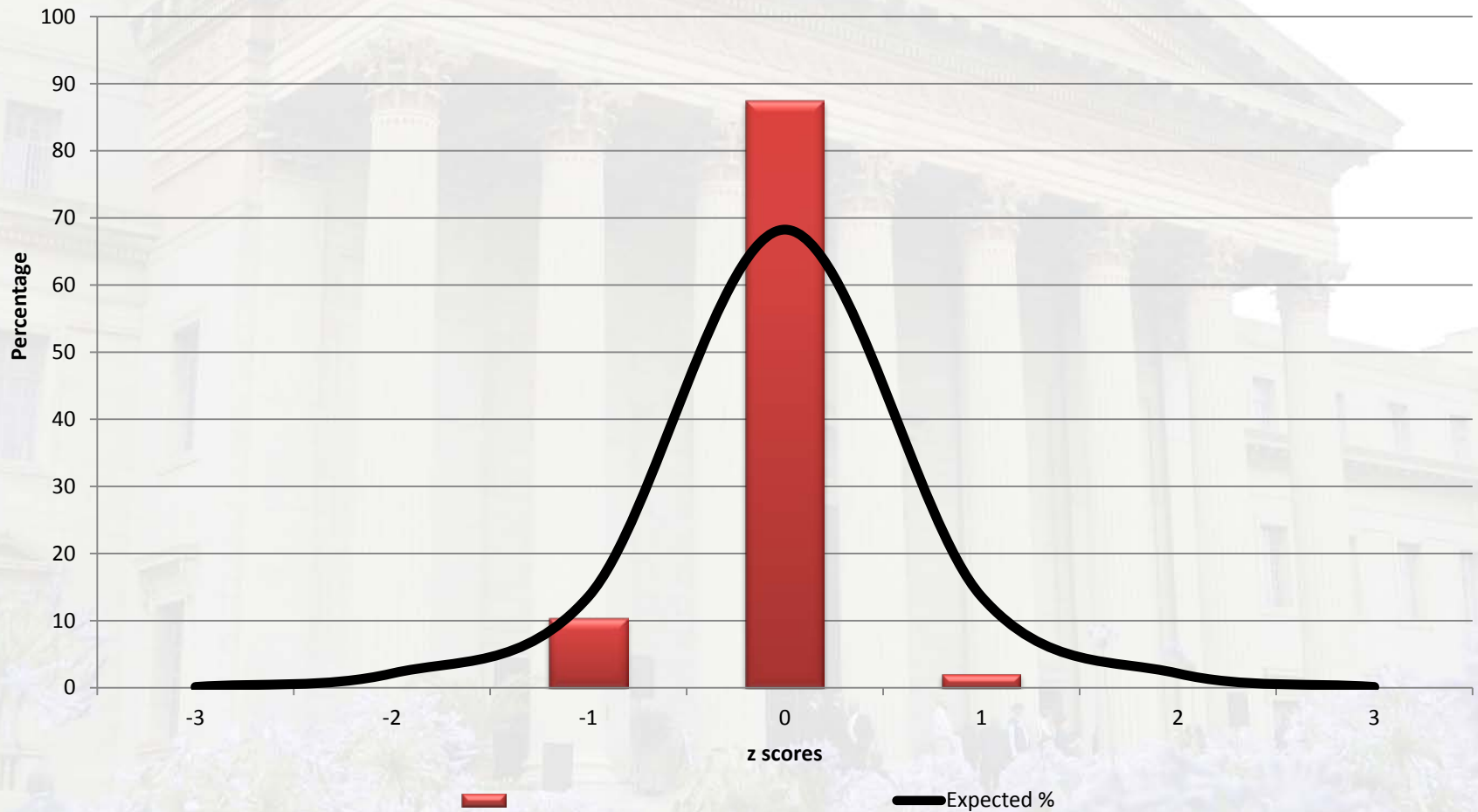
The scores obtained by South African participants were much as expected with the majority of scores falling to the normal distribution.

# DTVMI-6

Findings indicated that the visual-motor integration skills of the South African mainstream sample were comparable to the American based norms.

	<u>Mainstream: Group</u> <u>(n=48)</u>	<u>DTVMI: USA based</u> <u>norms.</u> <u>(n=1,737)</u>
<b>Variable</b>	Mean Scale Score (SD)	Mean Scale Score (SD)
<b>VMI</b>	9.47 (1.70)	10 (3)

# DTVMI-6



# CONCLUSION:

- The results support the use of the American TVPS-3, DTVP-3 and DTVMI-6 norms with South African mainstream learners aged six to nine years of age of an urban, middle class background.
- Therapists should take note that South African participants scored differently on the spatial relations, visual discrimination and form constancy subtests of the TVPS-3 and the EHC and copying subtests of the DTVP-3.



- The TVPS-3 must be used with an assessment evaluating VMI skills.
- The visual closure subtest on the DTVP-3 has been greatly improved and hence South African participants obtained scores within the average distribution.
- Therapists wanting to use the DTVP-3 should be aware that there is no subtest evaluating spatial perception.



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# Thank you

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