

## But is it fair?

Fair and equal participation for vision impaired students in selective testing

Bo Andersen  
Educational Psychologist, QTVI  
PsyVIC, England

## Qualifying entry exams and visually impaired students

- Fair and equal participation for vision impaired students in selective testing

Project jointly funded by the Royal National Institute for the Blind (RNIB) and GL Assessments.

Educational Psychologist:

Simon Ungar  
Wandsworth,

Bo Andersen  
PsyVIC,

RNIB:

Rory Cobb,  
Sue Keil

GL Assessment:  
Louise Cooper



- Standard Achievement Tests at age 7 – 11 and 13



- Cognitive Ability Tests at age 11



- 11+ Entry and selection test At age 11

## The issue

- ▶ Schools have a system in place to select students, to
  - ▶ Ensure students are suited to study, and will complete the course (the standard of outcomes, school league tables)
  - ▶ Select students amongst a vast oversubscription
- ▶ Tests provide a standardised measure, which gives necessary normative results.
  - ▶ All students sit the exam, and it is their performance on the day that matters.

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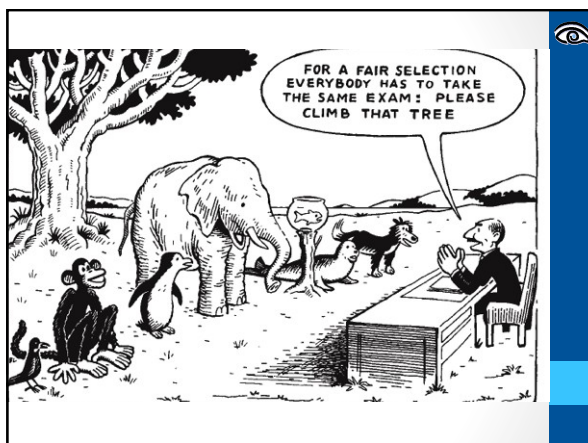
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## Schools

- 'Sensory impairment not a particular disadvantage'
- Centrally administered tests
- Low incident disability (often no personal experience)
- Adapt materials:
  - Enlarge papers
  - Print on different colour paper
  - Print answers directly on the paper
  - Additional time

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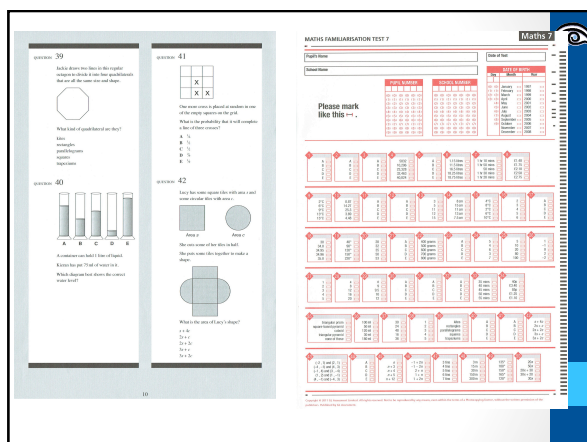
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## VI Services

- '11+ really difficult - particularly the non-verbal part, is impossible'.
- 'We tried transcribing it into Braille – that didn't really work. It left students disadvantaged'.
- 'CAT tests are awful. They are not usually enlarged'. Over pt24 really difficult.
- Question is, what is actually being tested – VI children use their short term memory to answer questions.
- 'Had to work really hard with the secondary school to accept EP assessment as a replacement to 11+'.

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## Test issues

- Schools administer the verbal part
  - Non-verbal part usually omitted
  - Picking one part of test – fair scoring?
- Using the test with people who need 24+pt becomes difficult to manage
- Tests validity: are similar skills in use for sighted and VI students?
- Braille versions very difficult
- Sighted peers more primed through SATS and school based practice
- Need for making VI students compete more equally

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## Test issues

- Tests have been designed upon this, to provide a *normative* result.
  - Normative results are widely used by the system, to group people
  - (intuitively) understandable, using comparison
- Cognitive tests *assume a homogeneity* which cannot be taken for granted
- Not diagnostic

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## RNIB / GL-A project

- Task:
  - to produce guidelines for production of verbal and non-verbal 11+ test papers for VI pupils and guidelines for test administration, including alternative assessment procedures where appropriate
- Approach:
  - Project coordinated by two RNIB staff with expertise in testing and two EPs with experience of VI
  - Advisory group consulted in one-day workshop
    - QTVIs
    - EPs
    - GL-A staff
    - RNIB staff

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## RNIB / GL-A project

- Guidelines drafted by EPs for:
  - Producers of tests
  - Potential users of tests
  - Educational Psychologists
- Based on:
  - review of existing literature on testing of VI pupils
  - Existing guidance on access to print materials
  - Views of professionals in one-day workshop

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## Looking back to move forwards

- Key questions for potential tests...
  - Can text based (i.e. verbal) tests measure the full range of skills and competences that are relevant for future academic progress?
  - Do the tests accurately measure core cognitive competencies (cf. an artefact) at all ages and across levels and types of sight loss?
  - Do the tests, when used with vision impaired children, actually predict subsequent academic achievement?




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## Use of verbal scales of existing tests

- Common practice
  - Miller & Skillman (2003)
    - Interviewed staff at state schools in USA
    - Of all instances of test administration:
      - 45% were verbal scales of WISC
      - 9% were performance scales of WISC
      - 14% were specifically designed tests for blind/VI




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## Use of verbal scales of existing tests

- Tillman (1967)
  - Sighted children performed better than VI on Comprehension and Similarities
  - Differences seemed to be accounted for by some items whose content is visually biased
  - VI superior to sighted on Digit Span task
- Wyver & Markham (1999)
  - Specific items on verbal scales account for differences between VI and sighted
  - Visually-based items in Comprehension task are significantly more difficult for VI children than for sighted




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## Adapted verbal scales

- Perkins Binet (1980)
  - Items from verbal scales of Stanford Binet selected as being appropriate in content for blind/VI population
- Williams Intelligence Test for Children with Defective Vision (1956)
  - Based on (mainly) verbal items of previous existing tests for sighted children
- Both better than use of unmodified verbal scales, but nevertheless depend on use of verbal scales as a proxy for performance, which is lacks empirically and theoretically validity

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## Performance Scales

- Single function tests
  - Ohwaki Kohs Tactile Block Design
    - Complex block design using fabric-covered blocks
  - Tactile Progressive Matrices
- Blind Learning Aptitude Test (BLAT)
  - Tactile non-verbal reasoning items:
    - Odd one out
    - Match to sample
    - Series completion
    - Matrices

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## Performance Scales

- ITVIC
  - Includes some non-verbal items
    - Exclusion
    - Perception of figures (match to sample)
    - Figural analogies
    - Block design
    - Rectangle puzzles
    - Map and floor plan questions

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## Performance Scales

### • BUT:

- Blind and SVI children tend to have difficulty accessing tasks with spatial/figural content (even in tactile form)
  - Generally less experience of pictures etc. than sighted, and less experience of using them.
  - Difficulty organising and processing spatial information (integrating info in a framework; forming gestalts etc.) (Ungar et al., 1995)
  - Difficulty acquiring strategies for exploring and extracting information from tactile displays (e.g. Ungar et al. 1997, Ungar, 2000)
  - Poor performance on such tasks may be due to difficulties accessing and organising the information, rather than with reasoning *per se*.

- Rich & Anderson (1965) Tactile Progressive Matrices

- Only older children (>9yrs) of average or greater (verbal) IQ could approach the task in an appropriate way

### • Time

- Blind/VI tend to need more time to complete tests
- May result in fatigue affecting performance

## Comparing blind/VI with sighted peers

“... it is virtually impossible to administer a common test to the two groups to provide information that is equally meaningful for both”

Warren, 1984

## Predicting achievement

“It is often the goal of the examiner to assess the ability of the blind child to function in the environment of the sighted. While this point is well taken, it should not be used as support for the notion that the blind child should have his IQ score interpreted with respect to norms for sighted children. The use of sighted norms will not allow adequate prediction of the blind child's success if that child's IQ is not a valid estimate of his potential.”

Warren, 1984

## Predicting achievement

“A test should not be used for prediction in situations where it has not been demonstrated to have good predictive validity. Further, the fact that predictive validity for a particular IQ test for sighted children’s success in a situation such as a schoolwork has been established, is not sufficient grounds on which to base use of the test for the prediction of blind children’s success in that situation.”

Warren, 1984

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## Predicting achievement

- Issues in prediction of achievement:
  - Blind/VI tend to develop differently from sighted, even if they may reach the same end point
    - Use of Tactile Test of Basic Concepts shows progressive lag relative to sighted peers from kindergarten through early school years
    - Evidence that gaps in intellectual development tend to close in adolescence (more reliance on abstract, verbal concepts)
  - SO: predictive validity must be established separately from sighted norms.
- Predictive validity of ITVIC
  - Correlation with literacy achievement for ‘Reasoning’ and ‘Verbal’ items, but not for spatial items.

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## Use of verbal scales of existing tests

- Highly questionable approach
  - Rationale is that verbal scores tend to correlate with general IQ scores, in sighted population
  - BUT:
    - verbal and non-verbal scales are specifically designed to test different things and have differential cognitive and neurological basis - broad areas of cognitive functioning would be missed.
    - Verbal scales are not standardised for blind/VI population
    - No empirical link between test scores and subsequent attainment for blind/VI (lack of predictive validity)
    - Some items may rely on visual experience more than others (i.e. bias against blind/VI)
    - ‘Verbalisms’ might mask poor conceptual understanding.

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## Summary

- Current practice is relatively ad-hoc
  - Informal enlargement (e.g. photocopying onto A3)
  - Decisions about inclusion/exclusion not based on evidence
  - Decisions based on parts of test (e.g. verbal scores only)
- Some good practice

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## Summary

- Existing practice tends to be ad hoc
- Project brought together:
  - Existing research
  - Professional experience and expertise
  - Perspective of commercial producer
- Guidelines written on production of key standard versions of test papers
- Guidelines written on best practice for potential test users
- Guidelines for Educational Psychologists in compiling alternative assessment

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## Key outcomes

- Production guidelines
  - Standard version of all tests to be produced in accordance with existing Clear Print guidelines
  - Standard version on A4 paper in 12 point
  - Enlarged version of all tests to be produced as standard in B4 paper size in 14 point
  - Modified version of verbal paper in 20 point on A4 paper
  - Enlarged modified version of verbal paper in 22 point on B4 paper
- Nonverbal paper unsuitable for any pupils who
  - Typically reads text at greater than 14 point
  - Cannot easily perceive detail in non-verbal items in 14 point version of paper

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## Key outcomes

- User guidelines
  - Standard versions of papers available from GL-Assessment
  - All VI pupils should be assessed by QTVI to determine accessibility of available versions of papers
  - For pupils who cannot access nonverbal paper, verbal paper may be taken (if accessible) but scores should not form sole basis for selection
  - For all pupils who cannot access nonverbal paper, alternative selection procedures should be used
    - EP assessment
    - Portfolio of work
    - Scores from verbal paper

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## Case study: Kent

- Selection panel makes judgements about all pupils who cannot access 11+
- QTVI makes application for special consideration
- Panel makes initial decision whether or not to give pupil special consideration
- Information gathered by QTVI, school and other professionals forms portfolio of evidence of pupils potential to learn
- Panel makes selection decisions

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## Key outcomes

- EP guidelines
  - Practical guide for professionals with little or no experience in VI
  - Completing the profile comparable to 11+
  - Using what is out there
  - Guidelines for decision making
    - Deciding on suitability of tests and items
    - Contacting other professionals

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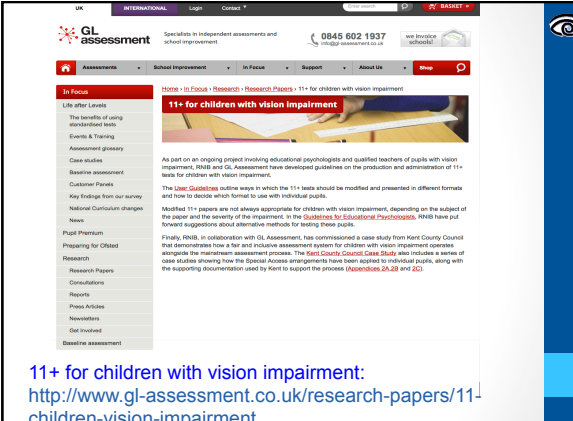
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The screenshot shows the GL Assessment website. The header includes the GL Assessment logo, contact information (0845 602 1937), and a navigation menu. The main content area features a red banner for the '11+ for children with vision impairment' research paper. Below the banner, there is a detailed description of the paper's purpose and findings. A sidebar on the left lists various resources available on the website.

**11+ for children with vision impairment:**  
<http://www.gl-assessment.co.uk/research-papers/11-children-vision-impairment>

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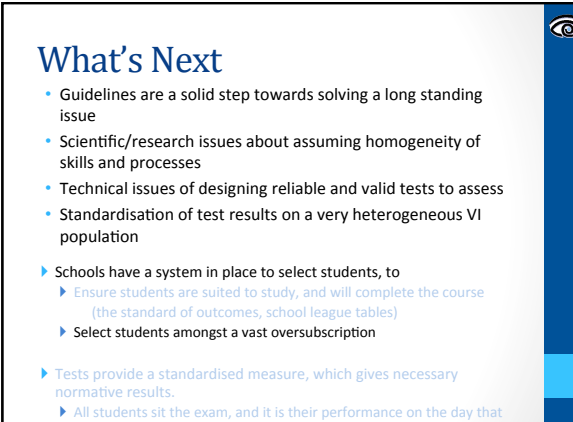
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The slide is titled 'What's Next' and lists several key points regarding the guidelines for the 11+ exam. The points are organized into a bulleted list, with some items further detailed using sub-bullets.

### What's Next

- Guidelines are a solid step towards solving a long standing issue
- Scientific/research issues about assuming homogeneity of skills and processes
- Technical issues of designing reliable and valid tests to assess
- Standardisation of test results on a very heterogeneous VI population
- ▶ Schools have a system in place to select students, to
  - ▶ Ensure students are suited to study, and will complete the course (the standard of outcomes, school league tables)
  - ▶ Select students amongst a vast oversubscription
- ▶ Tests provide a standardised measure, which gives necessary normative results.
  - ▶ All students sit the exam, and it is their performance on the day that matters.

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