# Assessing the ability of blind and partially sighted people: are psychometric tests fair?

## 1. Introduction

Psychometric or standardised tests are assessments that measure knowledge, abilities, attitudes and personality traits. They are used in education and recruitment and can consist of written, online or oral tests. Blind and partially sighted individuals are potentially disadvantaged by the use of these tests.

RNIB is often approached by teachers and parents concerned about the use of standardised/psychometric testing in education and whether these tests can be suitably adapted or are relevant to blind and partially sighted children. This led to the initial question "what do we know about the use of psychometric testing with blind and partially sighted people?"

RNIB's Centre for Accessible Information (CAI) conducted this literature review to establish what relevant literature and research is available on how psychometric tests can be adapted and are used with people with sight loss. The scope of the project included standardised tests in both education and employment. The literature review was conducted between November 2011 and January 2012

## 2. Method

Following an initial scan of literature related to psychometric testing for blind and partially sighted people, the author focused the literature review across three themes:

1. Psychometric tests developed for sighted people and used with blind and partially sighted people. Within this the author considered why these tests are used, the adaptations that are made to the tests, and the issues faced by blind and partially sighted users when accessing these tests.
2. Psychometric tests developed for and standardised on blind and partially sighted people, including the strengths and weaknesses of certain tests and their usage.
3. The use of technology and computerised tests as a way of making tests accessible to all.

## 3. Key findings from the research

### 3.1 Psychometric tests developed for sighted people and used with blind and partially sighted people

* Tests developed for sighted individuals are not always appropriate to use with blind and partially sighted people. Non-verbal tests are most problematic as they often use pictures and images which are inaccessible to blind and partially sighted people. While non-verbal aspects of tests are often inaccessible, verbal aspects of tests, such as the Wechsler Adult Intelligence Scale (WAIS-III), can often be successfully used with blind and partially sighted people.
* Blind and partially sighted people are often given a time extension when taking tests because on average they read at a slower rate than sighted people. However, the difference in reading speed will vary from person to person, depending on sight condition, format of text and experience of reading in given format. Therefore standard time extensions for tests are not appropriate, and may give some individuals an advantage and others a disadvantage depending on their sight problem.
* It is debatable whether blind and partially sighted people's level of reading comprehension is on average lower than that of sighted people. Some research suggests comprehension is at a comparable level, other research suggests blind and partially sighted people have reduced comprehension due to their sight loss. The gap in reading comprehension between blind and partially sighted people and sighted people is likely to be greater for children than for adults. As speed and comprehension are linked, timed tests can mean a blind or partially sighted person may need to sacrifice some comprehension in order to complete the task more quickly.
* Psychometric tests are often used to test innate ability, but the skills being assessed for a blind or partially sighted person may differ from the skills being assessed for a sighted person. For example, sighted people can use visual cues when looking for patterns, but blind or partially sighted people may need to rely on short term memory in order to answer the same question.
* Scores on psychometric tests are often used in recruitment and selection for employment, school, college or university places. Due to the problems faced by blind and partially sighted people when completing these tests they may be disadvantaged in selection processes that use psychometric tests. Tests taken under non-standard conditions (i.e. where extra time to complete the test has been given) are not always deemed to be comparable by test providers as scores cannot be validated. This can also cause problems if tests are being used in a selection process.

### 3.2 Psychometric tests developed for and standardised on blind and partially sighted people

* A range of psychometric tests have been developed for blind and partially sighted people, but few of these tests were developed in the UK. The Williams Intelligence Test for VI Children is one of the few tests to have been developed in the UK. Although still useful, it is over 50 years old and a new standardised test, that takes account of developments in the concept of cognition and intelligence, is now needed.
* The low incidence of blindness, particularly among children, and the geographical spread mean accessing a large sample for standardisation can be difficult. Many of the assessments developed for blind and partially sighted people were tested with small samples. There is also little reported evidence on how widely the various tests developed for blind and partially sighted people are used, and the preferred tests within education settings in the UK or other countries.
* Tests developed for blind and partially sighted people are most useful on an individual basis to assess a person's academic progress or understand learning needs. However, due to a lack of validation they are not useful for comparing performance against others.

### 3.3 The use of technology and computerised tests

* The advancements in the use of technology (such as computers and tablet devices) in administering tests could potentially provide more accessible options for blind and partially sighted candidates. An individual's access technology could potentially be used so that they are able to complete the test in their desired format.
* It is possible that tactile images could be combined with a tablet device (such as the iPad) to make questions containing images accessible. One study found that using a Talking Tactile Tablet blind and partially sighted students were able to access graphical questions from a maths tests. In the future non-verbal tests could potentially be accessed in this way.
* The use of technology to administer and complete tests is more likely in employment recruitment than in education settings, due to the potential issues of cost and logistics of large numbers of people completing tests simultaneously.

## 4. Conclusions

* A range of literature and research exists on the subject of psychometric testing for blind and partially sighted people.
* It is clear that there are issues associated with blind and partially sighted people taking psychometric tests developed for sighted people, and that there is no obvious solution to many of the issues identified.
* Tests developed for blind and partially sighted people are useful in assessing a person's academic progress or understand learning needs, but are less useful in comparing performance or innate ability with peers.
* Technological advances could potentially make certain aspects of psychometric tests accessible, but there are potential issues including cost and logistic problems associated with large scale administration.

## 5. Further information

* To download the full research report visit: (To be added)
* For more information please email [research@rnib.org.uk](mailto:research@rnib.org.uk)

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### About RNIB’s research

RNIB is a leading source of information on sight loss and the issues affecting blind and partially sighted people. Our Research and Knowledge Hub contains key information and statistics about blind and partially sighted people including our Sight Loss Data Tool, which provides information about sight loss at a local level throughout the UK. You’ll also find research reports on a range of topics including employment, education, technology, accessibility and more. Visit our Knowledge and Research Hub at: **rnib.org.uk/research**