11+ tests and pupils with vision impairment: alternative assessment guidelines and information for educational psychologists

1. Introduction

This document is part of a set of guidelines prepared by RNIB in collaboration with GL Assessment, aiming at the production of accessible versions of 11+ papers in a range of formats that are intended to be appropriate for the majority of vision-impaired pupils who read print up to a maximum size of 22 point. The purpose is to provide a single resource for decisions about the use of 11+ test papers for vision-impaired pupils, including: appropriate accessible formats for particular groups of pupils; guidance on best practice in administration of tests; and guidance on appropriate alternative procedures to be used in selection at 11 years.

The purpose of this guide is to provide educational psychologists with guidance in providing information on a vision-impaired pupil's aptitude, to form part of a 'portfolio' of evidence to inform school selection decisions. Such assessment needs to be fair, in that it provides information that is comparable with that obtained from the 11+ and identifies which special arrangements will be needed to allow a pupil to access assessment materials.

2. Purpose of the 11+ test

Testing for school selection at ten or eleven years of age ('Eleven Plus' or '11+') continues to be the norm in a number of local authorities and is increasingly used by independent schools and, more recently, academies, and school clusters and consortia. The aim of such tests is to provide, quickly and objectively, a relatively reliable and valid predictive measure of future academic potential, such that higher scores on the test should indicate the potential to succeed in a more academically challenging context (e.g. grammar school).

The speed and efficiency of administration (typically a single 2–3-hour session) and the objectivity (children sit a common test that is objectively scored, as opposed to assessment by individual teachers) are seen to outweigh any limitations.
Children who have a vision impairment (i.e. who are blind or partially sighted) have a right to the same educational opportunities as their fully sighted peers. This includes providing access to any selection procedures for accessing specific secondary schools (e.g. grammar schools). The Equality Act 2010 places a duty upon local authorities and schools not to discriminate against disabled people or pupils in their access to education. Selection for admission to a grammar school education by way of academic testing is a 'permitted form of selection' under the Equality Act 2010. Schools and local authorities have a duty to make reasonable adjustments for disabled pupils in operating a selection process. Such adjustments may include making special arrangements, including modifying the typical test procedures or providing a **different** but **equivalent** selection procedure.

We assume that blind and partially sighted children should have the right to access the typical assessment procedures (modified as appropriate) whenever possible, but this should not take precedence over the right to a fair selection process. Therefore, if there is reason to believe that a particular aptitude test (even appropriately modified) may not reliably measure a vision-impaired pupil's true learning potential then that pupil should be offered an alternative means of assessment.

Appendix 1 gives an overview of what we know about assessing the aptitude of children with vision impairment.

3. Visual difficulties experienced by children with vision impairment

The following is an attempt to categorise the range of visual difficulties that pupils with vision impairment may experience. A thorough knowledge of these issues in relation to each pupil in question serves, firstly, as a foundation for making decisions about whether the pupil can access the 11+ assessment in a modified form or if the assessment should be done through alternative methods. Secondly, it forms the basis

for the adaptations to the form and methods of the chosen assessment format.

The supporting qualified teacher of pupils with vision impairment (QTVI), usually based at the local authority sensory support service, plays an all-important role in such guidance and decision-making.

3.1 Functional implications of vision impairment

Most people classed as 'blind' have some sight – e.g. they may have peripheral vision or tunnel vision, or may find it easier to see in certain light conditions. 'Functional vision' refers to what a person can see, rather than what they can't see. The main functional effects of vision impairment include the following (learners may experience more than one of these areas of visual difficulty):

- **Poor acuity.** Acuity is the term given to the sharpness of the overall image seen by an individual. Both distance and near vision can be affected by poor acuity, but not necessarily to the same degree. Some learners may be able to see quite small print on a page but be unable to see at a distance, while for others the opposite may be true.

- **Central vision loss.** Some learners may have particular difficulty with their central vision, the area of the visual field which is used for detecting fine detail. They may be able to move around fairly freely, however, if the rest of the visual field is unaffected. These learners often have most difficulty with tasks involving reading, writing and close observation.

- **Peripheral vision loss.** This can present learners with particular difficulties in locating information on a page, although they may be able to read it quite effectively using their central vision when they have found it.

- **Interrupted vision.** Some learners' sight is affected by irregular patches of poor vision, so that they may have to scan objects, consciously, in order to see them effectively. Complicated visual tasks may become impossible for these learners if they are able to pick up information only in disjointed fragments.

- **Low contrast sensitivity.** Some visual conditions cause particular difficulties where an object to be viewed does not stand out clearly from its background. For such learners, the clarity and contrast of print on the page may be more important than its size.

- **Adaptability to light.** Some learners find pronounced variations in light difficult to manage. They may require print on a coloured background to reduce glare. Some assessment resources may also present glare if they are on glossy paper, which is a significant issue for pupils with any degree of photophobia (light sensitivity).

- **Impaired eye movements.** Some visual difficulties arise from problems in controlling different muscle functions in the eye. Nystagmus, for example, involves a continuous involuntary movement of the eyes, usually from side to side, which creates significant focusing difficulties. Some learners may have problems with convergence (the ability to train both eyes on the same object at the same time) while others may find it hard to shift their focus from a near to a far object.

- **Colour loss.** Colour confusion on its own is not considered to be a vision impairment, but it often accompanies and compounds other visual difficulties. The extent of colour vision loss varies between individuals, but the main educational implications remain the same – difficulty in distinguishing detail in pictures, maps and diagrams. Activities which are heavily dependent upon colour coding may present significant access problems to learners with a severe colour loss.

For further information about vision impairment in children, see Bowman *et al.* (2001).

3.2 Cerebral vision impairment

Where vision impairment is rooted in the neurological processing of stimuli, i.e. where the eye itself may be healthy but issues occur in the system from the optic nerve and through the many areas of the brain involved in processing visual stimuli, consequences and effects are varied and unpredictable and may result in fluctuations in vision. In its simplest form, neurological issues will affect field of vision (e.g. tumours

and strokes destroying nerve pathways). In more complex forms, CVI may result in a range of functional effects (such as problems with face recognition, detection of movement, detection of static stimuli, and/or detecting a relevant visual image from a complex background) which are beyond the scope of these guidelines.

For further information about cerebral vision impairment, see Dutton *et al*. (2006) and Dutton and Bax (2010).

4. Understanding the role of modified test papers

Modification of exam papers is standard practice in education (e.g. for National Curriculum Tests and GCSE), and a range of guidelines are available to support this process. However, with respect to cognitive ability and aptitude tests, any modification to the standard format of the items used in the standardisation process is likely to result in a threat to the validity of the test as a norm-referenced measure. It is also acknowledged that there are limits to the extent of modification that is desirable or possible and that some pupils will benefit from alternative modes of assessment. Limiting factors may include:

- Size of materials: a trade-off will inevitably exist between the benefits of enlarging materials for pupils with low acuity and problems created by the excessive size of materials, in particular the increased memory demands placed on pupils by the need to scan to and fro across a large page to access information for a single test item.
- Non-visual access: it is judged to be impossible to provide a modified version in braille of a test designed for print users that will provide an accurate measure of a blind pupil's academic potential. This is because the way in which information is accessed by touch is so different from accessing by sight.
- Time: it may take significantly longer for a pupil with vision impairment to access a test, either in standard or modified format. This may result in fatigue (see below) and may place excessive demands on a pupil's memory (where a long time is required to access and process individual test items).

- Fatigue: pupils with vision impairment are likely to experience a higher level of fatigue in accessing any version of a test than their fully sighted peers, both with and without additional time. This may well have a negative effect on performance and could therefore affect the reliability and validity of test scores.
- Cost and efficiency: as noted in section 2, the purpose of a standardised selection test is to provide a relatively objective, valid and reliable means of assessing a pupil's learning potential (aptitude). There will be a point beyond which the cost and inefficiency of providing bespoke modified versions of test papers (including the need to provide appropriate practice and familiarisation materials) will outweigh the advantages of standardised testing, and it will become more efficient, reliable and valid to use alternative means of assessment.

For further information about modified and alternative versions of test papers and the range of pupils for whom they may be suitable, see the user guidelines. For those students whose vision impairment is so severe that they cannot access print, it is not considered appropriate to provide braille versions of 11+ test papers. For these pupils, an alternative assessment method should be used (see below for guidelines on alternative procedures), though the ITVIC and the braille version of the NARA described below could form a part of alternative assessments.

5. Existing assessment materials and issues

To ensure equality when supplementing or replacing 11+ with an assessment by an educational psychologist, the issues of **fairness** and **objectivity,** while ensuring **accessibility** and **adaptation** to the visual needs of the individual, become paramount.

Existing assessment material, as used by educational psychologists or other specialist professionals, varies considerably in its accessibility and suitability for adaptation. If the material is to be accessed through pupils' own equipment, it often needs to be possible to handle and write directly in workbooks etc. It will be necessary to be mindful of – and sometimes adapt some assessment material to suit – the pupil's particular needs.

Being some of the most widely used assessments, the Wechsler Intelligence Scales for Children (WISC) and the British Ability Scales (BAS) are available to most practitioners.

An assessment by an educational psychologist is not (and should not be) limited to the cognitive and achievement tests. However, below are guidance notes for practitioners and professionals specifically in relation to the completion of these tests.

5.1 General considerations

The 11+ assessment consists of up to 5 subject areas:

Verbal reasoning
Non-verbal reasoning
Spatial reasoning
English
Maths

When assessing a pupil with a WISC-IV^{UK} or a BAS3$_{UK}$ and a WIAT-II^{UK}, providing a profile comparable to that of the 11+ will include the following subtests, where judged appropriate in relation to the pupil's visual functioning:

WISC	WIAT
Verbal comprehension Similarities Vocabulary Comprehension Word reasoning Perceptual reasoning Block design Picture concepts Matrices Arithmetic	Word reading Reading comprehension Numerical operation Mathematical reasoning Spelling Listening comprehension Written expression
BAS	**ITVIC**
Core scales Word definitions Pattern construction Matrices Verbal similarities Quantitative reasoning Achievement scales Number skills Spelling Word reading	(in addition to the verbal comprehension part of the WISC) Figural analogies Block design

Some subtests overlap (word reading, arithmetic and spelling occur in BAS and WIAT-II^{UK}).

Verbal subtests

The verbal comprehension index and working memory indices of the tests can be administered directly to vision-impaired pupils, as they require no vision or physical interaction. Please refer to research outlined in Appendix 1 with regard to using verbal subtests as indicators of aptitude.

Non-verbal subtests

The perceptual reasoning and processing speed scales involve visual stimuli which require identification and categorisation through writing or manipulating small objects. As with the 11+ assessments, decisions to administer these assessments need to be based on thorough

considerations and awareness of a pupil's visual functions, such as visual acuity, visual field and light/colour requirements. In some cases it is likely that the decision should be taken not to go ahead with the non-verbal part as this is an assessment designed with the seeing population in mind. In such cases, the verbal subtests, in conjunction with additional information from the pupils' daily function and needs (see elsewhere in the guidance) may be included in the assessment. As noted in section 3, advice and guidance should be sought from a qualified teacher of pupils with vision impairment (QTVI) as required.

Time limits

Cognitive assessments usually include guidelines of allowing 20 seconds for a verbal comprehension answer, and 30 seconds to attempt a non-verbal item. Such rules should not be strictly adhered to when assessing vision-impaired pupils, due to the extra time necessary for additional compensatory processes, though it may be appropriate to comment on processing time when reporting results. Professional judgement as to the likelihood of the student being able to answer should be applied.

Use of CCTV and handheld magnifiers

Magnification devices such as handheld magnifiers and CCTV represent many pupils' daily working tools. Where a pupil is used to accessing and navigating printed information in this way, it may be appropriate for them to use a device to access some of the test materials. However, two key factors need to be taken into consideration when making decisions on appropriateness, which are similar for both kinds of device.

Firstly, use of magnification should be avoided in situations where only part of a test item can be viewed at one time, for example where only one or two cells of a matrix pattern or only part of a block design pattern can be fitted onto the CCTV screen or seen through the magnifier lens. In this situation, students cannot readily compare parts with whole patterns at a single glance and therefore scores obtained are more likely to reflect basic visual processing capacity and/or memory, rather than higher-level thinking. This is more likely to affect the use of handheld magnifiers than CCTV.

Secondly, students may find it difficult to orientate themselves on a page when only viewing a small part of it at a time, particularly if they are

required to shift their attention around a page; for instance, to compare a matrix pattern with the possible answers, or if they have to examine an item and write and answer elsewhere on the page.

If a handheld magnifier is used, careful considerations have to be given to lighting conditions (seek advice from the QTVI if in doubt).

When using CCTV, it is advisable to use a pointer such as a long pencil or similar, instead of hands and fingers, to indicate objects to avoid obscuring the pupil's view.

Digitised versions of print

The use of digital versions of the texts (for example word reading, reading comprehension) is generally allowed by publishers. Digitised versions should be obtained from publishers. The digitised version can be used for direct screen access if this is visually easier for the pupil. It allows rearrangement of the text (columns of single words), avoids scanning, is often perceived as easier to access, and for adaptation of print size, print and background colour etc. It is also possible to make the arrangements of the text on the computer and then print them out for the pupil to read.

When print is accessed directly on the screen and spelling etc. is done through the computer, spell- and grammar checkers must naturally be switched off.

If a reader, or automatic screen reader, is necessary to present the items in the test, the assessment changes significantly. Hearing the text is much more demanding on the pupil's verbal memory. Results should be interpreted with caution, and comments on the pupil's needs and use of a reader should be included in the report.

Lighting

Lighting is of major importance and concern to vision-impaired pupils. Plenty of natural, indirect sunlight is optimal for most pupils. If artificial light is required, it needs to be bright, but glare-free. Daylight bulbs are best. Most vision-impaired pupils have a very short working distance, and lamps need to be near (table lamps are best) and adjustable so that they can be positioned in such a way that light is not blocked by body or apparatus.

The following is an attempt at making explicit issues and factors of particular assessments and subtests. All factors should be considered carefully in relation to the pupil in question, and where there are any doubts with regard to suitability, issues should be discussed with the supporting QTVI.

5.2 Wechsler Intelligence Scales for Children (WISC)

The WISC assess mental abilities in the four areas of verbal comprehension, perceptual reasoning, working memory, and processing speed. Separate composite scores in each area, and a full-scale score (IQ) are provided. The table above specifies the subtests which correspond with the areas tested in the 11+. However, practitioners will be aware that both tests carry their own administration and scoring requirements to obtain composite scores.

Block design

This subtest may be administered using the original resource, paying attention to lighting conditions and working distance.

If any magnification is needed, it is advisable to avoid the subtest. The task is unsuitable for handheld magnifiers due to the need for the pupil to perceive relationships between parts and the whole of a form and to compare and match a target pattern with the model they are required to construct.

Time should be recorded, but usual time limits should not be observed. The decision to discontinue each item should be made either when the pupil stops or it becomes very obvious that the item is too hard (see general guidance in 6.1 above).

Picture concepts

This subtest may be administered using the original resource, paying attention to lighting conditions and working distance.

The task is unsuitable for most handheld magnifiers, as most pictures do not fit into the viewer in their entirety. The pictures used are symbolic representations, and the object of the subtest is *not* the visual skills of identification of the pictures. It is appropriate for the student to go

through each picture and name them, giving the assessor the opportunity to correct any mistakes and misunderstandings.

Matrix reasoning

This subtest may be administered using the original resource, paying attention to lighting conditions and working distance.

The task is unsuitable for most handheld magnifiers, as matrices do not fit into the viewer in their entirety. It is very difficult to achieve the necessary overview, and some scanning is involved.

The items in the subtest become very visually complex. Reiterating the comments above, it is not the pupils' visual skills that are being assessed, and considerations should be given as to how far the subtest remains valid. If possible, confer with QTVI and other professionals who know the pupil in some detail.

Picture completion

Picture completion makes use of large, complex pictures that are difficult to magnify. The subtest involves gaining a visual overview and scanning for detail. Though it is possible to allow picture completion to form part of the perceptual reasoning profile (see the WISC manual), it is advisable to avoid the subtest with vision-impaired students.

Coding

Coding is presented in 20 point print size (non-bold). It involves scanning in two dimensions across the A4 page.

Handheld magnifiers are unsuitable for the task because of the writing involved. CCTV is not advisable, because of the writing and scanning involved.

The task is timed, and the 120 seconds allowed need to be adhered to to keep the subtest valid. Coding forms an important part of the pupil's speed-of-processing profile. Reporting should include both the time aspect (how many points are scored) and the proportion of errors, and other qualitative observations with regard to the pupil's functioning.
The test provides a score which is comparable with those provided for sighted pupils. However, the reliability and validity of the assessment

when used with vision-impaired pupils has been questioned (see Appendix 1).

Symbol Search

Symbol Search is also presented in 20 point print size (non-bold). It involves mainly scanning from left to right, across lines of approximately half of the A4 page (portrait orientation).

As the primary purpose of the task is visual scanning and identification, it would presumably be valid if the pupil made a verbal response that was recorded by the assessor. In such a case, a handheld magnifying device would be suitable. CCTV can be attempted (see notes above).

This task is also timed, and the 120 seconds allowed needs to be adhered to to keep the subtest's validity. As with coding, valuable qualitative observations and comments may be made.

Cancellation

Cancellation presents small, detailed pictures, which for many VI pupils are better suited for magnification. It involves mainly scanning from left to right, across lines of two A4 pages (portrait orientation).

As in coding, most handheld magnifiers are less suitable for the task, if completed in the intended method (drawing lines through target objects). CCTV can be attempted.

This task is also timed, and the 45 seconds allowed needs to be adhered to to keep the subtest's validity.

5.3 British Ability Scales

In the British Ability Scales, 3rd edition UK ($BAS3_{UK}$) the stimulus resources are generally presented in larger units (pictures, shapes and print), making it more accessible for vision-impaired students, in its original form.

The BAS may be viewed as a more flexible method of assessment. It does not have the same requirements as the WISC, with regard to achieving composite scores, so subtests can be more freely selected to suit the individual.

Core scales

Word definitions, verbal similarities and recall of digits, forwards and backwards, are entirely orally presented subtests and can be administered as prescribed in the test manual.

Recognition of designs

The subtest is not part of the items that correspond to the 11+ test, and is included for completeness of this guide.

The subtest is unsuitable for vision-impaired students.

Pattern construction

Stimulus booklet presents representations of black and yellow bricks in actual size of the bricks. The subtest is assessing pupil's visual and perceptual organisation skills. However, items become so complex that, in reality, the challenges to the vision-impaired pupil's use of residual vision will render the subtest invalid, and items beyond 26 should be avoided.

The alternative procedure is an untimed administration procedure that is separately standardised. This procedure is likely to be more suitable for vision-impaired pupils.

Matrices

Items are presented through a block of nine 2.5cm^2 black and white squares. Symbol shapes inside each square are 1.5 cm^2. Subtest should be attempted in its original form, or with the pupil's preferred magnification, paying attention to lighting conditions and working distance.

The items in the subtest become very visually complex. Reiterating the comments above, it is not the pupil's visual skills that are being assessed, and considerations should be given as to how far the subtest remains valid.

Quantitative Reasoning A

Work booklets with black and white symbols presented in 5cm^2 squares.

A lot of scanning is involved, and the subtest needs to be presented in its original form.

Quantitative Reasoning B

Subtest presents three back and white rectangles with sets of two numbers, point size 48. Very regularly structured scanning is involved. The subtest can be attempted directly. If further magnification is needed, the subtest should be deemed unsuitable because of the amount of scanning required.

Number skills

Items 1–22. Presents a mixture of verbal items and numbers in print size 26 (non-bold) to be read. The subtest can be attempted directly, or with use of students' own magnification. The illustrations to the verbal part of the questions do not provide quantitative information essential for solving the problems and are therefore not essential for completion.

Items 23–51. Number skills worksheet is presented in the numerical form in point size 26 (fraction number size 14) non-bold. The subtest needs to be presented verbally, because the narrative maths problems are presented in point size 12. The layout of the worksheet is potentially confusing for a vision-impaired pupil, and an excessive amount of scanning is required.

The items could be converted to digital format so that they can be presented in lines, with a regular font and size. The narratives should be read out, to avoid unnecessary focus on visual aspects of the test.

Spelling

Worksheet presents faint lined boxes to write in, numbered in point size 12. The boxes allow writing in size 30. The subtest should be completed with the pupil's own equipment and writing materials, including word processor.

Word reading

Presented through columns of words (intended to be read in rows), from point size 26 to 20, bold. The subtest should be converted to digital format, so it can either be presented in the pupil's preferred print format

or digitally on a screen. Arranging words in columns with one word per column reduces the need for scanning significantly.

Diagnostic scales

Of the diagnostic scales, only recall of digits, forwards and backwards, is suitable to administer to vision-impaired students. These should be administered according to the test manual.

5.4 Intelligence Test for Visually Impaired children – ITVIC

The ITVIC is a complete cognitive assessment tool that has been standardised with blind and partially sighted children in the Netherlands. It builds on the same principles as the WISC. In fact, it is an extension of the WISC, making direct use of some of the verbal parts, and replacing the perceptual reasoning subtests with tactile versions.

The ITVIC is an attempt to present the WISC to people with no sight. In doing so, it builds on the assumption that the subtests validly assess the same underlying skills as generally accepted with the fully sighted population, which has been called into question (as mentioned elsewhere in the guidelines). A few new subtests are added, to assess tactile skills like shape perception and spatial orientation. The ITVIC is standardised for people without sight, or with little light perception, and makes no use of colours. Produced in Holland, by the Bartimeus Centre, the ITVIC is not widely available in England.

The subtests of the ITVIC are:

- Perception of line figures
- Digit span
- Analogies: geometric figures – very similar to WISC Matrix Reasoning
- Learning names – remember names of figures (two trials)
- Block design – very similar to the WISC block design
- Fluency of idea production
  Name things that you can … (drink, put in your pocket, buy)
- Exclusion: geometric line figures – odd-one-out questions
- Map – spatial consistency
- Verbal comprehension – use of relational words

- House plan – spatial consistency
- Verbal analogies – similar to WISC similarities

In addition to the verbal part of the WISC, the two perceptual/spatial subtests of figural analogies and block design provides a profile which is comparable with the 11+.

5.5 Wechsler Individual Achievement Test

Wechsler Individual Achievement Test, 2nd UK edition (WIAT-II^{UK}), assesses achievement levels within literacy and numeracy. Being part of the Wechsler battery of tests, the WIAT offers the measure of predicted scores (based on the WISC results), which can be used to statistically measure the general or specific nature of any difficulties. As mentioned elsewhere in the guide, such comparisons and predictions are not standardised on the vision-impaired population. They build on an assumed homogeneity of the population which may not be generalisable to the vision-impaired population and should therefore be avoided (see Appendix 1).

The use of digital versions of the texts (word reading, reading comprehension) is generally allowed by publishers. Digitised versions should be obtained from publishers (see general comments in 5.1).

Word Reading

Word Reading is presented at point size 20 (non-bold). It is well-suited for handheld magnifiers, CCTV or digitised.

Numerical operations

Items in the numerical operations booklet vary in size. The first page (age 5–6) is in sizes 36 and 40. Sections B, C and some of D (age 7–14) are in size 24, and the remainder of the items are in size 14 (all non-bold).

Handheld magnifiers are useable for many (see 6.1). Pupils can write with their own preferred pens (black felt tip or similar).

For fairness and equality, the test needs to be presented in writing, as the maths becomes increasingly complicated. Pupils will demonstrate their ability to read and interpret correctly, and they will have the

opportunity to make use of written calculations. However, end-results can be scribed without interfering with validity and reliability.

Reading comprehension

The reading comprehension subtest is presented in a spiral-bound, hardboard booklet, in a colourful, poster-like layout. The print is initially big (size 36 non-bold), but it diminishes to size 12 in a very narrow, decorative writing (Times New Roman or similar). It may be feasible with some students to use CCTV, but it is strongly recommended to use a digital version of the texts (see 5.1).

For administration of the subtest, follow the test manual.

Spelling

The response paper provided for the spelling subtest enables the student to write directly onto the paper, in point size up to 36. However, the lines are thin and feint, and they are not spaced out well for direct work.

The pupil may have paper with bold lines to work from, or they may prefer to work directly onto a computer (see 5.1). Both options are permissible.

Mathematical reasoning

The mathematical reasoning subtest is presented through a series of colourful pictures, varying in complexity and detail. Each picture has a quantitative question attached.

The subtest is not suitable to use with vision-impaired pupils in its current form.

Listening comprehension

The listening comprehension subtest is likewise presented through sets of four colourful pictures, varying in complexity and detail. The one picture in the set of four, which matches a read-out sentence, needs to be identified.

The subtest is not suitable to use with vision-impaired pupils in its current form.

5.6 Neale Analysis of Reading Ability – NARA

For braille readers, the Neal Analysis of Reading Ability (NARA) – Revised 1997 edition (Greaney *et al*., 1998) – is available in a braille version, which consists of the same texts as the sighted version, plus a series of optional additional diagnostic tests.

The test recording forms are entirely in print. The text is presented such that the contracted parts of the text are made clear, so it is – in theory – possible for an assessor to administer the test with no knowledge of braille. However, braille reading is an activity entirely different from print reading, and if the assessor has no knowledge of braille, it is strongly advised not to administer the assessment without the presence of a QTVI, or a braille-reading member of staff, who has detailed knowledge of the pupil's braille skills.

6. Collecting additional information

Where it is considered inappropriate for a pupil to sit the 11+, and you as an educational psychologist or other professional have been requested to be part of the assessment process, the educational establishments will naturally look to you for information about the pupil's ability that they would normally obtain from the 11+.

In many cases, such questions go beyond what any of the individual tests listed above can answer. To achieve a fair and complete assessment, it will also be necessary to include information from the pupil's daily work and functioning in school.

In the primary school setting, it is relatively simple to collect information from all the members of staff who come in contact with the pupil. There are often end-of-year reports which will provide a profile, and national curriculum levels provide complementary figures to the assessment, as they describe the student 'in situ', over the longer term. The experiences and guidance from the case study that accompanies these guidelines: 'Reasonable Adjustments to Kent's Secondary Selection Tests for Pupils with Vision Impairments' provide more detailed information. It is especially worth noting the timeframe involved. It is suggested that the

process of collecting such information needs to be planned at least a year in advance.

Issues to look out for are:

- The degree and nature of individual differentiation of the curriculum. Is the vision-impaired student simply being asked to complete fewer items of a set of questions, because of the time aspect of completing work? Are tasks being changed radically in nature and level, in order that the student understands, and is able to complete work?
- The level of support the pupil is receiving. Support ranges in nature from the 'hands off' adaptation of material to enable the student to work independently, to a teaching assistant (TA) sitting next to the student, finding resources and guiding hands.

While there are no hard-and-fast rules about such aspects, achievement and levels of independence and support need to be correlated and considered.

In this area, as with comparison of cognitive and academic abilities, the danger is to assume a greater comparability and homogeneity in the population than is warranted. Difficulties with independent performance and competitiveness in the fully sighted population are often attributed to lack of confidence or organisational skills. For a child with a severe vision impairment, independence skills need to be taught explicitly as they may not be acquired through incidental learning. Any relationship between these skills and underlying cognitive ability cannot therefore be assumed.

The level and nature of the vision-impaired pupil's support and daily functioning in the education system up this point provide strong pointers to how they should be supported in the future, and indicate aims and objectives for the school and the student to work towards.

7. Conclusion

The intentions of this guide have been to enable professionals to provide an alternative to the 11+ assessments through the assessment tools widely available in the local authorities. The theoretical issues of validity

and reliability, and the practical aspects (in terms of necessary adaptations) of administering such assessments to vision-impaired pupils, quickly make it clear that these forms of assessment are by no means directly comparable and replaceable (see Appendix 1). Consequently, the assessment carried out using these guidelines needs to serve the multiple purposes of providing answers about the pupil, comparable to those achieved through the 11+ test, describing and making schools aware of the pupil's additional needs, and, though making up for the lack of understanding of test comparability between sighted and vision-impaired people is not entirely possible, at least acknowledging this incoherence, and commenting as fully as possible on any known issues and areas of which the school needs to be aware.

Appendix 1: What do we know about the assessment of aptitude in children with visual impairments?

The problem of assessment of blind and partially sighted children and adults has been discussed almost since the first development of intelligence testing. Over the decades, a number of approaches have been proposed, developed and evaluated.

Using verbal parts of existing tests

The simplest, and still by far the most common, approach has been to administer only the verbal parts of existing IQ and aptitude tests. A wide range of criticisms has been raised against this approach.

One strong early criticism was the lack of norms for the blind and partially sighted population, which significantly reduces the validity of applying these tests to this group. This has since been addressed by the development of norms for some existing tests, and the development of bespoke tests for vision-impaired pupils. It remains the case that tests that have not been normed with a vision-impaired population should be interpreted with caution when applied to this group.

A second criticism arose from the finding that blind and severely vision-impaired people tended to perform more poorly than sighted people on some verbal items that depend on an understanding of visual concepts.

One outcome of such criticisms was the development of specifically designed tests which were normed on a vision-impaired sample, and which were typically drawn from a subset of verbal items from existing tests that did not require and understanding of visual concepts (e.g. the Hayes-Binet test).

A third criticism is that vision-impaired people who have been brought up in a linguistically rich home and school environment may acquire the capacity to use verbal concepts appropriately although they may lack experience and full understanding of the concrete object or events referred to (e.g. things like fire, which are difficult if not impossible for a blind person to experience directly). This suggests that any purely verbal test may actually overestimate the understanding of some blind and partially sighted people. Conversely, however, such tests may underestimate the learning potential of children who have experienced less rich (or even impoverished) early language environments.

Finally, evidence indicates that verbal and non-verbal tasks correlate with different aspects of school attainment, and that they have different neurological bases. Significantly, research has shown that the validity of combined verbal and non-verbal (tactile) tests to predict academic attainment of blind children is greater than either type of test on its own (Rich and Anderson, 1965).

Non-verbal tests designed for vision-impaired people

A number of non-verbal tests designed for blind and partially sighted people have been developed. Because of the need to exclude verbal content, these have generally consisted of figural items presented in a tactile form, such as reasoning problems consisting of raised-line shapes or blocks with different textured surfaces. Some of these have been designed as standalone non-verbal tests intended to be administered alongside existing verbal tests, and others have been developed as part of a complete cognitive testing system.

As is the case for fully sighted children, the use of combined verbal and non-verbal tests increases validity (in terms of correlation with measures of academic attainment). However, this approach has also received criticism. Firstly, due to the relatively small size of the vision-impaired population, samples used to establish norms have been relatively small,

which limits their reliability in practice. Secondly, this is compounded by the extreme heterogeneity of the population, with large differences in level of vision, aetiology and nature of impairment, all of which can impact differentially on cognitive development.

Third, it has been suggested that the construct validity of tactile non-verbal tests (the extent to which a test actually measures what it is meant to measure) is limited, particularly for certain groups. Specifically, concerns have been raised that younger children and those who have had less experience with tactile images may find it difficult to access the test items, so that the tests actually end up measuring differences in basic tactile perception skills (e.g. strategies for identifying tactile shapes and for relating different parts of a figure to each other). This appears to be particularly relevant for children under 10 years of age and for those whose verbal IQ scores are relatively low.

Finally, tactile tests are by their very nature bulky, cumbersome and relatively expensive to produce and distribute. They often require highly specialist skills to administer and interpret properly. As a result, very few are available and they have been relatively little used. (In a survey of teachers of the visually impaired in the USA in 2003, it was found that only 14% of all assessments of vision-impaired children were carried out using any kind of specialist test (including verbal-only tests). In contrast, 45% of assessments used only the verbal sections of tests standardised on a fully sighted population.)

General issues of construct and predictive validity

Also, just because a test appears to be similar to one designed for sighted children, it does not mean that it is measuring the same thing when used with vision-impaired people; for instance, the increased reliance on memory or on tactile perceptual skills may mean that any differences in scores found between children are due to differences in these factors rather than in the skills the test is intended to measure (e.g. logical reasoning skills).

Although specialist tests for vision-impaired pupils have generally been found to correlate well with scores on existing non-specialist tests, very little research has been done on the capacity of these tests actually to predict subsequent academic performance (although some studies have

demonstrated correlations with current academic performance). Since the primary function of 11+ tests is to provide a measure of learning potential, it is not obvious that any existing test can serve the same function in relation to blind and partially sighted students.

Conclusion

Although work is still ongoing to develop tests that are appropriate for blind and partially sighted students, there are currently significant limitations in our understanding of what exactly these are measuring both in relation to sighted performance on the same or equivalent tests, and in terms of the performance of different groups of vision-impaired children (e.g. different age groups, those with different aetiologies and those with different degrees and/or types of impairment). Therefore, although such tests may be useful as part of a broader assessment, and when used by a professional trained to interpret test scores (e.g. psychologist), it is difficult to be confident that the scores obtained on any given test will provide meaningful information about a child's aptitude in a rage of areas.

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