

# UNDERSTANDING EXACT



Specialist Consultants

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Digital Literacy Assessment  
for 11 to 24 years

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Published by GL Education

1st Floor, Vantage London, Great West Road, London TW8 9AG

[www.gl-assessment.co.uk](http://www.gl-assessment.co.uk)

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Typeset by Mike Connor Design & Illustration

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7th edition, revised March 2019

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# 1 Introduction

## 1.1 What is Exact?

Exact is a suite of computerised tests designed for the assessment of literacy skills in the age range 11 to 24 years. The Exact suite comprises standardised tests of the following areas of attainment:

- Word recognition
- Reading comprehension and reading speed
- Spelling
- Typing to dictation
- Handwriting to dictation

Test administration is carried out entirely by the computer. Each test begins with spoken instructions and practice items. The total suite takes between 30–40 minutes. Full details of the tests in Exact, including guidelines on test administration, are given in Section 2. Results, based on nationally standardised norms, are available immediately. Results are given in standard score and percentile score formats within the age range 11:0–24:11, and age equivalents for the age range 6 to 18 years are also provided. Guidance on understanding results and interpreting reports are given in Sections 3 and 4.

Exact has been specifically designed to meet the need for a group of tests that assess whether examination candidates should have access arrangements, such as extra time or use of a reader or scribe in written examinations. They are particularly aimed at GCSE and A-level examinations and the requirements of the Joint Council for Qualifications (JCQ), which represents awarding bodies based in England, Wales and Northern Ireland, some of which offer qualifications to overseas centres. Assessors should note, however, that Exact does not provide ALL the evidence required by JCQ when applying for exam access arrangements. Indeed, there is no single test currently on the market that can provide all the information necessary for the full completion of JCQ Form 8, which depends on a range of specialist assessment skills as well as thorough familiarity with current JCQ regulations, and calls for information from various sources. Exact provides a substantial amount of the assessment information required for Form 8. Section 5 gives guidance on this.

Exact has a wider range of uses other than assessment for exam access arrangements. The program is also appropriate for assessing students with specific learning difficulties in secondary, further or higher education, or for teachers wishing to obtain a standardised objective assessment of literacy of groups of students within the test's age range, or of individual students within the test's age range who have specific problems (such as slow handwriting, spelling or reading comprehension).

Although individual tests from Exact may be helpful in suggesting dyslexia, or may form part of a dyslexia assessment, this group of tests is not sufficient in itself to make a diagnosis of dyslexia and is not designed for that purpose. Administrators who require a test that will identify dyslexia

should consider using LASS 11-15 (for the age range 11:0–15:11) or LADS Plus (for ages 16 and upwards). For further information see Section 3.3.

Exact has two forms of equivalent difficulty – Form A and Form B. This allows for repeated assessment if desired, although this should be carefully planned and with due consideration to the impact of possible practice effects. The two forms can be alternated over time in order to record progress, e.g. in response to intervention given to students with literacy difficulties. For further information on retesting see Section 2.9.

### 1.1.1 Rationale for the tests in Exact

There are three distinct, but interrelated, skills that are required by fluent readers: phonics, rapid word recognition and comprehension. Phonics comprises the sub-skills of grapheme-phoneme decoding (used when reading) and phoneme-grapheme encoding (used when writing). For most students, phonic skills have been mastered by the age of 11. However, to become efficient readers, as well as decoding skills students also need to acquire rapid word recognition.<sup>1</sup> Both rapid word recognition and comprehension continue to develop beyond the age of 11. We have therefore concluded that rapid word recognition and comprehension are the key skills to be assessed in secondary school students and in individuals above this level. In Exact we have designed tests for these key reading skills; we have also included measures of spelling, handwriting and typing, which are central to the requirement for students to be able to record their work and display their knowledge and abilities in examinations.

### 1.1.2 Why are the tests in Exact speeded?

All the tests in Exact are *speeded* – i.e. they are performed against time limits. There are good reasons for this. From age 11 onwards the underlying skills in reading and writing should be largely automatic so that the mental focus can mainly be on understanding what is read and on conveying clear meaning in writing. Unless individual words in text are read quickly and effortlessly, it is extremely difficult to retain morphological elements (words, phrases, sentences) in working memory so that the overall text can be understood.<sup>2</sup> Similarly, unless the mechanical production of written words (letter formation, spelling, organisation, layout) can be carried out quickly and effortlessly when writing, it is extremely difficult for the writer to retain in mind a clear idea of what they intended to get down on paper. Hence, untimed tests are likely to give a misleading impression of the capabilities of students in secondary school and beyond. In particular, when students with specific learning difficulties are placed in the situation of a timed examination, their literacy skills are likely to be much worse than would be predicted from untimed measures of those skills.<sup>3</sup>

<sup>1</sup> Nation, K. & Snowling, M.J. (2004) Beyond phonological skills: broader language skills contribute to the development of reading. *Journal of Research in Reading*, 27(4), 342-356.

Perfetti, C.A. (1985) *Reading ability*. New York: Oxford University Press.

<sup>2</sup> Lyon, G.R. (1998) Why reading is not a natural process. *Educational Leadership*, 55(6), 14-18.

Perfetti, C.A. (1985) *Reading ability*. New York: Oxford University Press.

<sup>3</sup> Lesaux, N.K., Pearson, M.R. & Siegel, L.S. (2006) The effects of timed and untimed testing conditions on the reading comprehension performance of adults with reading disabilities. *Reading and Writing*, 19(1), 21-48.

Runyan, M.K. (1991) The effect of extra time on reading comprehension scores for University students with and without learning disabilities. *Journal of Learning Disabilities*, 24(2), 104-108.



Arguably, writing to dictation (as in the Exact handwriting to dictation test) provides a purer and more reliable measure of writing speed than free writing because it is uncontaminated by the student's ability to create ideas. Research has shown that free writing speed is influenced by the topic chosen, teacher and administrative factors, and the extent to which students want to (or have been encouraged to) produce a really good piece of writing.<sup>4</sup>

## 1.2 Exact and access arrangements

### 1.2.1 JCQ regulations on access arrangements

Exact has been designed to meet the requirements for examination access arrangements, most notably those regulated by the Joint Council for Qualifications (JCQ) for GCSE and GCE A-level examinations. Schools and colleges may apply for access arrangements in examinations for students with learning difficulties or other disabilities, which may take the form of extra time to complete written examinations, rest breaks, use of a word processor, or, provision of a reader or a scribe. Exact is already widely used by many schools and examination centres for access applications, and is accepted by JCQ, although it does not provide ALL the evidence required by JCQ when applying for exam access arrangements (there is no single test currently on the market that can provide all the information necessary for this purpose). Section 5 specifically provides advice to those assessing the need for examination access arrangements.

The JCQ publishes 'Access Arrangements and Reasonable Adjustments' (AARA) each autumn. JCQ AARA is subject to revision each year and assessors should therefore check these regulations on an annual basis. Hard copies are sent to centres in September, or the booklet may be downloaded from <https://www.jcq.org.uk/exams-office/access-arrangements-and-special-consideration/regulations-and-guidance/>.

The information in this seventh edition of the Exact manual relates to the JCQ AARA in force at the time of writing, i.e. the regulations for the period 1 September 2018 to 31 August 2019.

Patoss (the professional association of teachers of students with specific learning difficulties) publishes a guide to assessing the need for access arrangements<sup>5</sup> (for further information see [www.patoss-dyslexia.org](http://www.patoss-dyslexia.org)). As with all computer delivered group tests, Patoss recommends that when assessing for exam access purposes, Exact should be administered carefully so that individual student responses can be observed and monitored.

Communicate-ed ([www.communicate-ed.org.uk](http://www.communicate-ed.org.uk)) offers training (online and face-to-face) and resources for professionals involved with access arrangements.

<sup>4</sup> Ferrier, J., Horne, J. & Singleton, C. (2013) Factors affecting the speed of free writing. *Journal of Research in Special Educational Needs*, 13(1), 66-78.

<sup>5</sup> Jones, A. (Ed.) (2011) *Dyslexia: Assessing the need for Access Arrangements during Examinations: A Practical Guide* (4th Edition). Evesham, Worcs.: Patoss.

## 1.2.2 Cambridge Assessment – Exam access

There are two types of additional arrangements available if you are using exams from Cambridge Assessment: access arrangements; and centre-delegated access arrangements.

### *Access Arrangements*

When applying to CiE (Cambridge International Examinations) for additional arrangements for your students, you need to submit the [Access Arrangements: Preparation – Form 1](#) along with evidence to demonstrate that the student has a ‘history of need’ that justifies the application. Many of our assessments and screeners, including Exact and CAT4, can be used in this supporting evidence.

The deadlines for these applications are:

June series – 21 January

November series – 1 July

### *Centre-Delegated Access Arrangements*

For the arrangements listed below, you don’t need to apply directly to CiE, but you will need to complete the [Centre-Delegated Access Arrangements: Preparation – Form 4](#), and keep a copy on record, along with evidence from assessments such as Exact, to justify the need for the arrangements.

- extra time up to 25% (not permitted in syllabuses where time is the focus of the exam)
- reading pen
- separate invigilation
- prompter
- transcript
- word processor
- reading aloud
- supervised rest breaks
- coloured overlays
- visual aids, for example, magnifying glasses
- colour naming

You can find more information on [CiE's website](#).

## 1.2.3 Why Exact is suitable for access arrangements assessments

In exams, students are under the pressure of strict time limits, which may pose particular problems for those with difficulties in handwriting, reading or spelling. Indeed, it is for this very reason that students with these difficulties are often allowed extra time by the awarding bodies. It has already been pointed out that literacy tests that are not speeded are unlikely to reflect properly the levels of literacy competence of individuals of secondary school age or older, particularly in situations such as examinations (see Section 1.1.2).

Consequently, all the tests in Exact include an element of time pressure in order to recreate that feature of exam conditions. Thus, in the spelling test there is ample time for students to type each word and correct a simple mistake but not enough time for them to try out a variety of different spellings. In the comprehension test, because dyslexic pupils may have to read and re-read questions a number of times in order to fully understand them, we have not only set a time limit on the whole test but have also included a measure of reading comprehension speed, relating to the time taken for the questions to be understood.

The Exact word recognition test can give an indication of slow reading of single words, but because it is timed it cannot currently be used as evidence for a reader because the JCQ AARA currently specifies an *untimed* test of single word reading accuracy for a reader application (see below). A student who can read single words in the absence of time pressure but who struggles to do so when under time pressure might benefit more from extra time than from a reader.

The Exact spelling test is suitable for an application for a scribe, word processor with spell check enabled, or speech recognition technology, all of which are permitted when a candidate has permission to use a scribe. The JCQ AARA states that there must be “a spelling accuracy score in the below average range” (JCQ AARA 2018-19, Section 7.5.11). The JCQ does not specify that the spelling test should be either timed or untimed, therefore either will be suitable under current regulations. When providing a below average spelling score as evidence for a scribe, the assessor must also be able to show that spellings are unrecognisable.

Some candidates may be quite proficient readers or writers but need extra time to demonstrate their proficiency. Since all the tests in Exact are speeded, comparing the scores with other tests might be useful. For example, where a candidate scores within the average range on the WRAT5 single word reading test, but achieves a much lower score on the Exact word recognition test, the assessor might consider whether this could be evidence that the candidate is disadvantaged when under time pressure. The same would apply when comparing results of the WRAT5 spelling test with those of the Exact spelling test.

#### **1.2.4 Limitations regarding access arrangements assessments**

Administrators wishing to use Exact when assessing eligibility for access arrangements should note that, under current JCQ regulations, the Exact word recognition test is not acceptable as a measure of reading accuracy when applying for a *reader* because it is a *timed* test of single word reading (similar to TOWRE 2). Section 7.5.10 of the JCQ AARA 2018-19 specifies an *untimed* test of reading accuracy. It will therefore be necessary to supplement Exact results with the results of a suitable standardised *untimed* reading accuracy test, e.g. WRAT5. Nevertheless, validation studies (see Section 1.4) have confirmed that the Exact word recognition test is an excellent test of single word reading, with scores very consistently located between those of WRAT4 and TOWRE. This test is therefore useful to help ‘paint a picture’ of a student’s disabilities as advocated by JCQ when applying for *extra time up to 25%* (JCQ AARA 2018-19, Sections 5.2.2 and 7.6.1).

The writing tests in Exact take the form of timed writing (both handwriting and typing) to dictation. A poor score in the handwriting test is clear evidence of slow writing speed, while a satisfactory score in the typing test provides evidence of adequate typing skills such that

the student would be capable of using a word processor in examinations. A below average handwriting to dictation standard score can be used as evidence for 25% extra time. This might indicate that the physical act of writing is slow for a candidate. Qualitative analysis of the handwriting itself might also provide evidence of illegible writing. The writing to dictation cannot, however, provide evidence of underlying processing issues when considering what to write, or organising thoughts into coherent writing. For this an assessment of 'free writing' will be required, and assessors should have such an assessment in their battery of tests and assessments (for further information on assessing free writing consult the Patoss website: [www.patoss-dyslexia.org](http://www.patoss-dyslexia.org) or the Patoss guide *Assessing the need for Access Arrangements during Examinations: A Practical Guide*). The Exact dictation tests are useful in showing those students for whom a keyboard may be more appropriate than a scribe. This is particularly relevant to students wishing to go to university, where fluency on a keyboard is important and scribes are not readily available.

### 1.2.5 Assessment of processing speed

Section 5.2.2 of the JCQ AARA 2018-19 specifies provisions regarding speed of working in relation to eligibility for exam access arrangements, such that below average performance (i.e. standard scores below 85) on "cognitive processing measures which have a substantial and long term adverse effect on speed of working" are valid evidence for provision of exam access arrangements. Section 7.5.12 goes on to state that "Cognitive processing assessments would include, for example, investigations of short-term/working memory, phonological processing (e.g. phonological awareness, phonological memory and/or rapid naming), visual processing, sequencing problems, organisational problems, visual/motor co-ordination difficulties or other measures as determined appropriate for the individual by a specialist assessor."

Exact is a suite of literacy tests and does not contain any cognitive tests. However, another product, Recall, assesses working memory and processing speed in the age range 7:0 to 16:11. Results from these tests are acceptable measures of cognitive processing when applying for exam access arrangements, provided the student is not older than the test ceiling of 16 years 11 months. For further information on Recall, visit the GL website.

### 1.2.6 Who can administer Exact?

It depends on the purpose of the assessment. When used for the purposes of general assessment, almost any competent adult can administer Exact with minimal training and by following guidance in the manual. So, it does not have to be a teacher who administers the tests - it could be a teaching assistant, for example. However, interpreting results from Exact requires professional educational skills and so should be left to a qualified teacher. For this reason, Exact is only available for purchase by schools, qualified teachers, other educational institutions and some other professionals connected with education (e.g. speech therapists or careers guidance advisors).

When used for the purposes of assessing eligibility for exam access arrangements, JCQ AARA specifies that the assessment must be carried out by a suitably qualified person, who could be an HCPC registered psychologist, a specialist assessor with an Assessment Practising Certificate or

an access arrangements assessor who has successfully completed a postgraduate course at or equivalent to Level 7, including at least 100 hours relating to individual specialist assessment. The head of centre must satisfy themselves that this person is competent to carry out such assessments (JCQ AARA 2018-19, Section 7.3). This person then takes responsibility for selecting appropriate tests, interpreting the results and making the recommendations for access arrangements.

These requirements apply whichever tests are used, whether Exact or any others.

### 1.3 Standardisation and norms

Technically, 'standardisation' is the process used in psychometric test development to create *norms* so that the performance of students of different ages can be represented by means of scores that are independent of age. However, the term 'standardised' is sometimes used in a non-technical sense to refer to the *consistent administration* of a test – i.e. test instructions and methods of administration are the same for all who take the test. Because this non-technical usage can be misleading (e.g. users may assume that a test has standardised norms when in fact it hasn't), we only use the terms 'standardisation' or 'standardised' in strict accordance with technical psychometric usage.

The most common normative scores are standard scores and percentile scores. Standard scores have a mean (average) of 100 and a standard deviation<sup>6</sup> of 15. Percentile scores place individuals on a 'ladder' of attainment from 1 to 100 compared with the population of that age; e.g. a percentile score of 70 means that 70% of people would have lower raw scores and 30% would have higher raw scores. (For further information about standard scores and percentile scores see Section 3.2).

The standardisation sample for Exact comprised 1,171 students aged from 11:0–18:11. The students were drawn from 17 schools across the UK, selected to give a representative spread of types of school and socio-economic profiles. The basic results are shown in Table 1. Exact test results for the standardisation sample.

It can be seen in Table 1. Exact test results for the standardisation sample, that Forms A and B are very similar in all tests except reading comprehension, where Form A has a slightly higher mean score and thus would appear to be slightly easier than Form B. However, this difference is taken into account in the norms, so the two forms are still psychometrically equivalent.

All raw data, except those for the word recognition test, approximated to normal distributions (symmetrical bell-shaped curves), with skewness (the degree of asymmetry of the distribution) and kurtosis (the degree of flatness and peakedness of the distribution) below the critical threshold of 1.0. The distributions of raw scores for the word recognition test were negatively skewed – i.e. scores were found to bunch towards the upper end of the scale. For this particular test, therefore, the raw score was transformed to give the normal distribution that is necessary for satisfactory generation of standard scores. This statistical transformation, which took into account the speed of response, had minimal effect on the scores of students with a raw score below the mean but, as intended, had a somewhat greater effect on scores above the mean. For students who have

<sup>6</sup> The standard deviation is the most common statistic for expressing variability in a set of scores and is calculated as the average amount by which the scores in the set deviate from the mean.

below average word recognition, over 70% of the variance in transformed score is predicted by raw score – i.e. for these students the standard score produced by this test is largely a function of their reading accuracy rather than speed. For students whose word recognition is highly skilled, however, differences are largely a function of speed rather than accuracy.

Table 1. Exact test results for the standardisation sample

Test	Form A		Form B	
	Mean	SD	Mean	SD
Word recognition (total number correct)	52.17	8.81	52.09	8.19
Word recognition (transformed score)	24.57	6.12	25.28	6.46
Reading comprehension (total number correct)	24.40	5.79	22.10	5.85
Reading comprehension speed (wpm)	79.61	28.87	72.32	31.90
Spelling (total number correct)	34.40	9.30	36.03	8.37
Typing speed (wpm)	21.25	7.51	22.37	6.85
Handwriting speed (wpm)	20.88	5.18	21.29	4.02

*SD*= standard deviation.

Normative results in standard score and percentile score form are incorporated into the Exact program. The norms are provided in 3-month age bands from 11:0 to 18:11 and in 12-month age bands from 19:0 to 24:11. Standard scores and percentile scores for the age range 19:0 to 24:11 were calculated by extrapolation. Age equivalents were calculated for the age range 6:0 to 18:11 (over this age, age equivalents become meaningless). Age equivalents in the 6:0 to 10:11 range were calculated by extrapolation.

## 1.4 Validity of Exact

Validation of a psychological or educational test is not the same thing as the psychometric standardisation of a test, nor should it be confused with the *reliability* of a test. ‘Reliability’ generally refers to the extent to which a test can be expected to give the same results when administered on different occasions or by a different administrator, or the extent to which the components of a test give consistent results (see Section 1.6). ‘Validity’ is a measure of the extent to which the test measures what it is supposed to measure (e.g. reading or spelling ability). Validity is usually established by comparing the test with some independent criterion or with a recognised test of the same ability. Inevitably, this raises the thorny issue of what is the ‘gold standard’ – i.e. which is the ‘best’ measure of any given ability against which all others should be compared? Professional opinions differ as to the merits of various tests, and consequently there are no generally agreed ‘gold standards’ for assessing reading, spelling and writing. Hence, the conventional method of establishing test validity is to show that a new test produces results that agree reasonably closely with well-established test(s) of the same ability.

### 1.4.1 Construct validity tests and results

In validating Exact, the following established tests were selected for comparison: TOWRE (Test of Word Recognition Efficiency) – a speeded test of recognition of real words and nonwords; WRAT4 (Wide Range Ability Tests) Reading and Spelling – untimed measures of single word reading and spelling accuracy; the Edinburgh Reading Test – a measure of reading comprehension ability; and the Hedderly Sentence Completion Test – a test of handwriting speed. Note that WRAT4 and TOWRE have US norms but are nevertheless widely used in assessments for exam access in the UK.

Exact has undergone separate studies with different samples for the validation studies and the standardisation study. An independent validation study of Exact was carried out in 2010-11 by Dr Joanna Horne of the Psychology Department, University of Hull, in four different schools in different parts of Britain and involved a total of 103 students. The results showed that all the tests in Exact correlate significantly ( $p < 0.01$ ) with equivalent conventional (pen and paper or individually administered) tests that are in regular use for exam access assessments, clearly evidencing the validity of the tests in Exact. The results are shown in Table 2. Construct validity results for the tests in Exact\*.

Table 2. Construct validity results for the tests in Exact\*

Exact test	Comparison test(s) and correlation values			
Word recognition	TOWRE Single Word Reading Efficiency <b>r=0.80</b>	TOWRE Phonemic Decoding Efficiency <b>r=0.84</b>	WRAT4 Reading <b>r=0.70</b>	Edinburgh Reading Test <b>r=0.74</b>
Reading comprehension	Edinburgh Reading Test <b>r=0.73</b>	WRAT4 Reading <b>r=0.56</b>	TOWRE Single Word Reading Efficiency <b>r=0.51</b>	TOWRE Phonemic Decoding Efficiency <b>r=0.52</b>
Reading speed	Edinburgh Reading Test <b>r=0.70</b>	Exact reading comprehension <b>r=0.54</b>	TOWRE Single Word Reading Efficiency <b>r=0.57</b>	TOWRE Phonemic Decoding Efficiency <b>r=0.51</b>
Spelling	WRAT4 Spelling <b>r=0.91</b>	WRAT4 Reading <b>r=0.70</b>	TOWRE Single Word Reading Efficiency <b>r=0.76</b>	TOWRE Phonemic Decoding Efficiency <b>r=0.87</b>
Handwriting speed	Hedderly Sentence Completion Test <b>r=0.54</b>	Exact typing speed <b>r=0.48</b>		

\* All correlations are significant at the  $p < 0.01$  level.

It should be noted that the differential correlations shown in the table follow a logical pattern. The Exact word recognition test correlated more highly with the TOWRE tests than with WRAT4 Reading. This is because the TOWRE tests are speeded tests (like Exact word recognition), while WRAT4 Reading is an untimed test. Exact reading comprehension (a timed test) correlates more highly with the Edinburgh Reading Test (a test of comprehension) than it does with the measures of phonic skills and individual word recognition. Correspondingly, the Exact reading speed measure also correlates more highly with the Edinburgh Reading Test (a timed test) than with the Exact reading comprehension score, showing that reading speed and reading comprehension have been separated out more in Exact, whereas the Edinburgh Reading Test conflates the two measures. Exact spelling shows a very high correlation with WRAT4 Spelling – higher than with the various reading measures. (Note that, as might be expected, reading and spelling skills tend to be significantly related: the correlation between WRAT4 Reading and WRAT4 Spelling, for example, was found to be 0.70, the same value as between Exact spelling and WRAT4 Reading).

To give some idea of expected levels of correlation, the correlation values between WRAT4 Reading and the other comparison tests were as follows: TOWRE SWE 0.64; TOWRE PDE 0.77; Edinburgh RT 0.67. These values are, in fact, lower than the corresponding values for Exact word recognition, suggesting that Exact word recognition has somewhat better concurrent validity than WRAT4 Reading.

#### 1.4.2 Validation of the exact typing to dictation test

Exact Handwriting Speed is significantly correlated with the Hedderly Sentence Completion Test (a commonly used measure of writing speed). Since there are no comparable tests of typing speed, no validation figures are given for this component of Exact. However, an independent study of the writing and typing to dictation tests in Exact has been published, and this provides support for the validity of this test <sup>7</sup>. This paper reports on two studies using computer-based dictation tasks for measuring speed of typing and handwriting.

In the first study, 952 students, aged 11-17 years, attending 19 different secondary schools, hand wrote and typed passages dictated by a computer. For both handwriting and typing, a very high correlation was found between speed calculated by the computer and that calculated by a human assessor, establishing that computerised calculation is a reliable, as well as convenient and timesaving method of establishing writing speed. There were greater age-related gains in speed of typing compared with handwriting, and greater variation in typing skill than handwriting skill. However, almost half of students with slow handwriting (below standard score 85) were found to have average or better typing speeds.

In the second study, 55 students aged 13-14 were administered these tasks together with the Hedderly Sentence Completion Test of handwriting speed. Despite the clear differences between the two test formats, a reasonable level of agreement was found between them. Almost one-third of students with slow handwriting in the computer-based task had not previously been identified as having support needs but would potentially be disadvantaged in written examinations. By eliminating the ‘thinking’ time involved in free writing, computerised dictation tasks give ‘purer’ measures, which can reveal physical handwriting and/or typing problems. They also simulate

<sup>7</sup> Horne, J., Ferrier, J., Singleton, C. & Read, C. (2011) Computerised assessment of handwriting and typing speed. *Educational and Child Psychology*, 28(2), 52-66.



examination requirements more closely than mechanical repetitive tests of writing speed, and should be particularly helpful in establishing whether students need access arrangements in examinations.

## 1.5 Reliability of Exact

'Reliability' generally refers to the extent to which a test can be expected to give the same results when administered on a different occasion (test-retest reliability) or by a different administrator (inter-rater reliability), or to which the components of a test give consistent results (internal consistency). Note that this is not the same as the validity of the test (see Section 1.4).

Table 3. Reliability coefficients (Cronbach's alpha) for the tests in Exact shows the coefficients of reliability for each of the Exact tests, calculated using Cronbach's alpha statistic, which is a measure of the internal test consistency. Note that the reliability coefficients shown in the table are all high (around 0.9) except for the reading comprehension test, where the reliabilities are nearer 0.8. This is because reading comprehension scores are based on a relatively small number of test items. These results show that all the tests in Exact have satisfactory reliability.

Although test-retest reliability is frequently quoted in test manuals, this measure is problematic because students are likely to remember items and answers from the previous assessment, which results in confounding memory factors. However, since Exact comprises two parallel forms, these can be compared in a test-retest situation, which is arguably a more satisfactory method of checking the test reliability since the test content is different in the two forms. To achieve this, Exact reading comprehension and spelling test data were collected from a total of 373 students aged 11-16 attending a large secondary academy in South London. The test-retest correlation coefficients over a period of six months were: spelling 0.757, reading comprehension accuracy 0.614, reading comprehension speed 0.511, these results all being statistically significant at  $p < 0.001$ . (Word recognition and writing/typing to dictation were not tested in this project.) Given the nature of the reading comprehension test, with five increasingly lengthy and complex texts of different genres and on different topics, together with progressively challenging questions, this result clearly demonstrates satisfactory psychometric and educational integrity of the assessment methods.

Table 3. Reliability coefficients (Cronbach's alpha) for the tests in Exact

Test	Reliability
Word recognition overall score	0.93
Word recognition regular words score	0.97
Word recognition irregular words score	0.96
Reading comprehension accuracy form A	0.81
Reading comprehension accuracy form B	0.80
Reading comprehension speed form A	0.84
Reading comprehension speed form B	0.83
Spelling overall score	0.91
Spelling regular words score	0.94
Spelling irregular words score	0.88
Typing speed	0.93
Handwriting speed	0.93

## 1.6 Online version of Exact: Equivalence study

The current version of Exact runs online, rather than from a CD. There have also been some updates to the illustrations, audio and animations. A study was carried out between September and December 2018 to evaluate the equivalence of the old and new versions.

A total of 146 students from six schools (n=5)/colleges (n=1) in the UK completed both the old (CD) and new (online) versions of Exact, with an interval of four to six weeks between test sessions. Each school/college collected data on just one form of the test (Form A or Form B - these were randomly allocated to schools), and test order (either the old or new version being delivered first) was randomly allocated to account for order effects. Students were selected based on their birth day of month (with each school randomly allocated a day of the month) to avoid any selection bias within the student sample.

Pupil population data for the school sample (based on the 2016/17 figures, which were the latest available at the time of the study) were compared to the national averages (for state-funded secondary schools, not including special schools, where available; for FSM and absence, the national figures include special schools as these are the only figures available). The school sample was found to be not significantly different from the national average on any of the pupil population measures: number on roll ( $t=0.36$ ,  $df=4$ ,  $p>0.05$ , NS); percentage of female students ( $t=0.29$ ,  $df=4$ ,  $p>0.05$ , NS); percentage of students eligible for free school meals at any time during the past six years ( $t=1.37$ ,  $df=4$ ,  $p>0.05$ , NS); percentage of pupils whose first language is not English ( $t=1.99$ ,  $df=4$ ,  $p>0.05$ , NS); percentage of pupils with a statement/EHCP ( $t=0.05$ ,  $df=4$ ,  $p>0.05$ , NS); and overall absence ( $t=0.41$ ,  $df=4$ ,  $p>0.05$ , NS).

Of the 146 students in the sample, 8.2% were eligible (at the start of the study) for free school meals. Twenty students in the sample (13.7%) were recorded as having a special education need/disability (SEND). In half of these cases, the specific type of SEND was not reported (6.8%) but, where it was stated, these included Specific Learning Difficulties (SpLD: 2.7%), Speech, Language

and Communication Needs (SLCN: 2.7%) and Moderate Learning Difficulties (MLD: 1.4%). The majority of the sample (91.1%) were White, 6.8% were Asian and 2.1% were Black. With regard to language, 8.9% of the sample's first language was not English.

The resulting correlations between the old and new versions of Exact are given in Table 4 (note that 'n' varies between subtests as not all students completed both versions of each subtest). For all subtests, the correlations meet the required standard of 0.70, to adequately demonstrate equivalence (according to the European Federation of Psychologists' Associations' test review model). In all cases, the correlations are very highly significant ( $p < 0.001$ ).

Table 4. Correlations between old (CD) and new (online) versions of Exact

Exact subtest	Correlation
Word recognition <sup>b</sup>	$r_s = .742, p < 0.001; n = 136$
Reading comprehension - Accuracy <sup>a</sup>	$r = .732, p < 0.001; n = 102$ <sup>c</sup>
Reading comprehension - Speed <sup>a</sup>	$r = .734, p < 0.001; n = 102$ <sup>c</sup>
Spelling <sup>b</sup>	$r_s = .886, p < 0.001; n = 138$
Typing to dictation <sup>b</sup>	$r_s = .726, p < 0.001; n = 119$
Handwriting to dictation <sup>b</sup>	$r_s = .761, p < 0.001; n = 113$

<sup>a</sup> Data meet the assumptions required for parametric testing; correlational analysis utilises Pearson's 'r'.

<sup>b</sup> Data don't meet the assumptions required for parametric testing; correlational analysis utilises Spearman's 'rho'.

<sup>c</sup> Exact reading comprehension results include an indication of whether the student may have rushed the test. In cases where retest was definitely required or recommended, and this was supported by clear differences between the student's speed and accuracy scores, their reading comprehension data were not included in the correlational analysis.

## 1.7 Advantages of computerised tests

One of the great advantages of a well-designed computer-based test is that it does not require any special expertise on the part of the administrator. This applies to all the tests in Exact, which can be administered by any competent adult (see Section 1.2.6). Provided headphones are used, they can also be administered and undertaken in a room where other activities are taking place, and no special directions to the students are required other than to tell the student(s) which of the tests should be attempted, along with an explanation of the importance of moving through the tests quickly and of thinking carefully about responses (see Section 2.6.3).

Computers also provide more precise measurement, especially when complex cognitive skills are being assessed. Tests are administered in an entirely consistent manner for all persons taking the test, which enhances reliability of measurement. Timings and presentation speeds can be controlled precisely. The subjective judgment of the administrator does not affect the test outcome as it can in conventional tests. Exact is largely self-administered and results are available immediately; both of these factors help to reduce administrative load and avoid time delays.

There is good evidence that most students prefer computer-based tests to conventional tests (whether paper-based group tests or administered 1:1 by a teacher). This is particularly the case for students with below average literacy skills, who are more likely to feel intimidated by assessments and be embarrassed by their performance. Computer-based tests have generally

been found to be less threatening and less stressful, which helps to ensure more reliable results.<sup>8</sup> There is also evidence that there is less gender bias in computer-based tests than in conventional tests, so there are good reasons to regard computer-based tests as fairer, as well as being more consistent and objective, than conventional tests.<sup>9</sup>

## 1.8 Accessing Exact through Testwise

In order to access Exact through the Testwise platform, please follow this link: <https://support.gla-assessment.co.uk/testwise/>

This will guide you through:

- Student management
- Sitting creation
- Taking the test
- Generating reports

<sup>8</sup> Singleton, C.H. (2001) Computer-based assessment in education. *Educational and Child Psychology*, 18, 58-74.  
BDA (2005) *Practical solutions to identifying dyslexia in juvenile offenders: Report of a joint project of the British Dyslexia Association and HM Young Offender Institution Wetherby, 2004-5*. Reading: British Dyslexia Association.

<sup>9</sup> Horne, J.K. (2007) Gender differences in computerised and conventional educational tests. *Journal of Computer Assisted Learning*, 23, 47-55.

# 2 Details of each test

## 2.1 Word recognition

Word recognition is a speeded test of the ability to recognise individual real words out of context (see Section 1.1.2 for explanation of speeded tests). It depends on fluent and efficient reading accuracy. In each item the student is presented with six real words shown on a circular location space in the centre of the screen (a circular location space is used, rather than random locations across the screen, to minimise any possibility of the results being adversely affected by visual tracking, fine motor skills and/or eye-hand coordination difficulties). One of those words (the 'target') is spoken by the computer, and the task is to identify the target word by clicking on it using the computer mouse as quickly as possible. (It is essential that students doing this test on a laptop use a mouse rather than a touchpad, because use of the latter creates an unacceptable delay in response times.) A total of five seconds is allowed for a response, with an audible prompt being given after three seconds. The remaining five words (the 'distractors') were selected in order to maximise lexical and phonological similarity with the target word, e.g.:

*Target word: century*

*Distractors: centre, sanctuary, centrally, scented, central*

Each of the two forms of the word recognition test comprises a total of 60 items, with equal numbers of regular and irregular target words. Difficulty – in terms of the frequency of the target words in written English – has been balanced across the two forms. The test begins with two practice items.

Because the distribution of raw scores for this test tends to be negatively skewed – i.e. scores tend to bunch towards the upper end of the scale – the raw score has been transformed to give the normal (bell-shaped) distribution that is required for generating standard scores. This transformation takes into account the speed of response, and has minimal effect on the scores of students with a raw score below the mean, but a somewhat greater effect on scores above the mean. For students who have below average word recognition, over 70% of the variance in transformed score is predicted by raw score – i.e. for these students the standard score produced by this test is largely a function of their reading accuracy rather than speed. For students whose word recognition is highly skilled, however, differences are largely a function of speed rather than accuracy.

Results are provided for overall words (see Section 3.1.1), and for regular words and irregular words (see Section 3.1.4). In practice, students do not use a phonetic approach when recognising words at speed, and their scores are usually very similar for both phonetically regular and irregular words. The standard scores in this test correlate well with spelling ability, and a standard score below 85 is a useful pointer to literacy problems such as dyslexia.

## 2.2 Reading comprehension

Each of the two forms of the reading comprehension test comprises five passages of increasing length and difficulty. Each passage is accompanied by a number of multiple-choice questions that demand good literal and inferential reading comprehension skills. The characteristics of each passage are shown in Table 4. Passages in the reading comprehension test.

Table 4. Passages in the reading comprehension test

Item no.	Type of passage	No. of questions	Form A		Form B	
			Title	Length	Title	Length
1	Recipe	5	Mrs Beeton's Biscuit Recipe	68 words	Coffee, Iced (Mrs Beeton)	90 words
2	Advert	10	New Homes for Sale	81 words	Sleepee-byes Beds	86 words
3	Short story	10	<i>Computer Games</i>	144 words	<i>A Giant Meal</i>	206 words
4	Factual report	10	Drama at Sea	182 words	Plane Crash	197 words
5	Excerpt from classical literature	10	<i>Barchester Towers</i> (Anthony Trollope, 1857)	240 words	<i>Nostramo</i> (Joseph Conrad, 1904)	221 words

Each passage is still available when the questions are shown. This is to avoid students having to remember the text, which would confound reading comprehension with memory ability. Each question has three possible answers: 'Yes', 'No', or 'Can't tell', the last of these being appropriate when the answer cannot be determined or inferred from the information given in the passage.

Note that 'Can't tell' is not equivalent to 'Don't know', which would indicate the student's inability to deduce the answer, rather than the inherent indeterminacy of the answer; this is explained in the practice phase of the test.

The test begins with a practice item, after which students are allowed a maximum of 10 minutes for the whole test, with no restrictions on the proportions of time spent on the five passages.

A 'progress bar' is visible throughout the duration of the test, so that students can see how long they have left to complete the test. Students are permitted to return to a previous passage if they wish.

Students should be encouraged to work swiftly but conscientiously, and to make a fair attempt at each question. The overall score is designed to reflect careful reading and considered understanding, so students who adopt the tactic of moving on if they cannot immediately determine the answer to a particular question are likely to score rather poorly. Students need to appreciate that they have to think about the questions (as in an examination). Some students may be inclined to automatically click 'Can't tell' if they are unable immediately to find the answer to a question within the passage. Students should be made aware that the answer can often be deduced or worked out from the information given in the passage, and that the 'Can't tell' option

should only be selected when there is insufficient information given in the passage to enable the answer to be deduced.

Students should also be made aware that although the reading comprehension test only lasts 10 minutes, they are not expected to finish it in that time and they should take enough time to get the earlier (easier) questions right. The later passages are quite difficult – the last passage, in particular, will be a significant challenge for students at higher education level – so it is much easier to amass points for answers in the early passages, and students should not rush these.

Results for reading comprehension accuracy and reading comprehension speed are given (see Section 3.1.1). The reading comprehension accuracy score is the total number of correct answers given. The program calculates reading comprehension speed by dividing the estimated number of words read in each of the five passages (including the questions) by the time taken to read each passage and answer the associated questions. ‘Dubious’ or ‘aberrant’ cases – i.e. students who simply select answers at random without reading or giving proper consideration to the passages – are flagged up by the program as statistical ‘outliers’, and drawn to the attention of the administrator. These cases tend to have suspiciously high reading comprehension *speed* but low reading comprehension *accuracy* (see Section 3.1.2 for further explanation of this).

## 2.3 Spelling

Spelling is a speeded test of the ability to spell regular and irregular words (see Section 1.1.2 for explanation of speeded tests). Each form comprises 30 regular words and 20 irregular words that are presented in order of difficulty (which was established by previous trials with large numbers of students). In each item the target word is spoken by the computer both in isolation and in the context of a sentence. An illustration associated with the sentence appears on the screen. The task is to type in the target word as quickly as possible. Note that students can begin typing in the target word as soon as they hear it and do not have to wait for the contextual sentence to be spoken.

The time allowed for each item is a function of the *length* of the word (3–14 letters), with a minimum of 9 seconds and a maximum of 31 seconds. An audible prompt is given 3 seconds before the allowed time is up. However, the time allowed does *not* increase as a function of the *difficulty* of the words. There are two reasons for this. The first reason is that if the time allowed *did* increase as a function of the difficulty of the words, this would reduce the effectiveness of the test to identify poor spellers. The second reason is that, at this age, spelling is mostly *automatised* – that is, through practice the student has learned how to spell the word without much conscious effort – and hence the time taken to produce a spelling is largely due to how many letters have to be written or typed. Hence the test is efficient in revealing the lack of automaticity in poor spellers (see Section 1.1.2 for a discussion of the importance of automaticity in skilled literacy).

The spelling test is *adaptive* insofar as the entry point is determined by performance on a number of ‘probe’ items of increasing difficulty given at the start of the test. When a student fails a probe item (or all the probes have been successfully answered) the program jumps to the appropriate place in the test. This preserves the sensitivity of the test for assessing poor spellers whilst avoiding boredom of more able students, who would otherwise find it very tedious and demotivating to have to spell lots of very easy words. Items that are jumped in this way are

credited as having been passed correctly by the student. The test is automatically discontinued when four out of the last six items attempted have been answered incorrectly. Since all the items are in order of difficulty the score obtained still accurately reflects the student's spelling ability even though they have not necessarily attempted all the items.

Results are provided for overall words (see Section 3.1.1), and for regular words and irregular words (see Section 3.1.4). A breakdown of all responses in this test is also provided for assessors who wish to use this information diagnostically. In secondary school students, spelling is often a more accurate measure of dyslexia than reading ability, and standard scores below 85 may be another pointer to that diagnosis (for an example, see the case study presented in Section 4.1).

## 2.4 Handwriting to dictation

There are a limited number of tests available for assessing the speed of handwriting, and the most widely used of these, which includes standardised norms, is an assessment of free writing. However, these tests include such a large and variable element of thinking time that they cannot offer a reliable measure of actual writing speed. We have therefore designed a handwriting to dictation test which eliminates thinking time and is a pure measure of handwriting speed and legibility. Inevitably, the handwriting speed for a dictated piece is very different from the speed obtained from free writing, and the two should not be confused. Both types of test may be required to fully assess a student's handwriting difficulties.

In the handwriting to dictation test a passage is dictated by the computer and the student has to write the dictated text by hand. A total of seven minutes is allowed for the passage, which is approximately 200 words in length. The passage is dictated in chunks of around four to six words, followed by a pause. The student has to press the 'page down' key to hear the next chunk or can press the 'control' key to hear that chunk repeated. In order to avoid confounding spelling skills with writing speed, the passage has been designed to impose minimal demands on spelling skills in the early paragraphs.

The results for this test show the speed of handwriting in words per minute (see Section 3.1.1), and the number of words handwritten (see Section 3.1.7). The number of handwritten words is estimated by the program based on the number of words dictated. Our research has shown that in 95% of cases the computer estimation of the number of words is sufficiently close to the actual number of words that it makes no appreciable difference to the standard score. However, in about 5% of cases, there may be substantial divergence between the computer estimation of the number of words and the actual count. This may arise because the student has been listening to the story and not writing.

Administrators should therefore always carry out a visual inspection of the handwritten work and, where anomalies are suspected, the actual count should be entered into the computer to replace the estimated count (see Section 3.1.5 for an explanation of how to do this).

In addition, if desired, the administrator can count up the number of misspelled or illegible words and enter these into the computer, and the program will calculate these measures as percentages of the total number of words typed or handwritten (see Section 3.1.4). See Section 3.1.5 for an explanation of how to do this. However, it should be stressed that this is not intended to be a test



of spelling and hence most students make few errors. In the standardisation sample, about 70% of students made fewer than 5% spelling errors in either passage.

If desired, the student's handwritten production can be scanned into a computer and the image loaded into Exact via Testwise (see help site for instructions on how to do this) in which case it will be displayed on the handwriting to dictation section of the PDF Report (see Section 3.1.7). This facility is optional, and if an image is not available the page will remain blank.

## 2.5 Typing to dictation

Since it is a requirement by the examining authorities that students should be proficient on a keyboard in order to be allowed to use a word processor in examinations, we have included a typing to dictation test which can be compared with the handwriting to dictation score.

In the typing to dictation test a passage is dictated by the computer and the student has to type the dictated text using the computer keyboard. A total of seven minutes is allowed for the passage, which is approximately 200 words in length. The passage is dictated in chunks of around four to six words, followed by a pause. The student has to press the 'page down' key to hear the next chunk or can press the 'control' key to hear that chunk repeated. In order to avoid confounding spelling skills with typing speed, the passage has been designed to impose minimal demands on spelling skills in the early paragraphs.

The typed dictation is often of interest because it clearly demonstrates spelling difficulties and problems with auditory memory, both of which may suggest dyslexia (for an example, see the case study presented in Section 4.1).

The results for this test show the speed of typing in words per minute (see Section 3.1.1), and the number of words typed (see Section 3.1.4). The number of typed words is calculated by the program, which treats a string of characters separated by spaces as 'words' and counts up accordingly. Our research has shown that in 95% of cases the computer estimation of the number of words is sufficiently close to the actual number of words that it makes no appreciable difference to the standard score. However, in about 5% of cases, there may be substantial divergence between the computer estimation of the number of words and the actual count. This may arise because the student has neglected to put spaces between several words.

Administrators should therefore always carry out a visual inspection of the typed piece and, where anomalies are suspected, the actual count should be entered into the computer to replace the estimated count (see Section 3.1.5 for an explanation of how to do this).

In addition, if desired, the administrator can count up the number of misspelled or illegible words and enter these into the computer, and the program will calculate these measures as percentages of the total number of words typed (see Section 3.1.4). See Section 3.1.5 for an explanation of how to do this. However, it should be stressed that this is not intended to be a test of spelling and hence most students make few errors. In the standardisation sample, about 70% of students made fewer than 5% spelling errors in either passage.

## 2.6 Guidelines for test administration

### 2.6.1 Trial run-through including how to exit during a test

Assessing students with Exact is straightforward but before the teacher or administrator attempts to test any student it is advisable first to run through the complete suite of tests to familiarise themselves thoroughly. Ideally, this should be done in the same or similar test situation in which the students will be (see Section 2.6.3). To do this, register yourself as a student.

### 2.6.2 Testing environment and equipment

The ideal testing environment is one that is reasonably quiet, with minimal distractions. Ideally, this should be a separate room, but Exact has been designed to be robust for use in the ordinary classroom, provided visual and auditory distractions (both to the student being tested and to other students in the class) have been minimised. To minimise auditory distraction, headphones are recommended. Inexpensive lightweight headphones of the type used for portable audio equipment will be adequate (but not the type that are inserted into the ear). Teacher or supervisor judgment is paramount in ensuring the appropriate testing environment.

If assessment is going to be carried out in an ordinary classroom in which there are other pupils, the computer and the student should be positioned in such a way that the student is not looking directly at the rest of the class, nor should the rest of the class easily be able to see the monitor screen. The best position for this is usually in the corner of the room. Students should not attempt the tests when other students are in a position in which they can become involved in the task or act as a distraction. It would be hard for other students to inhibit their reactions, and their behaviour could influence the decisions of the student being tested.

The teacher or supervisor should check that the equipment being used for the assessment is functioning correctly. This includes checking:

- that the sound system (speakers or headphones) is audible (not too loud or too soft, and without interference); and
- that the mouse is functioning correctly (non-optical types, particularly, require regular cleaning) and is positioned in front of the student on a suitable surface so that its movements are unimpeded. Please note that Exact should be used with a mouse (wired or wireless), not a touchpad as this will affect response times.

Exact should not be used for testing when any other applications are running on the computer, as these can interfere with the timings and recording of results. Please close down all other applications before starting Exact.

### 2.6.3 Student preparation

Before testing, each student must be registered on Testwise. See Section 1.8 for guidance on this. The tests can be done in any order but it is usually best to start with word recognition which students generally find quick and easy. Instructions are spoken by the computer, and each test

commences with a practice or demonstration of the task. When the student has completed the practice items, the test phase begins.

The student should be sitting comfortably at a suitable level in front of the computer screen (not too high or low, in order for them to see the screen and use the mouse satisfactorily). It is not recommended that students attempt the tests standing up, as they are more likely to move about and alter the angle at which the screen is viewed – this can lead to failure to see everything that is happening on the monitor and can also disrupt mouse control. The supervisor should check for reflections on the monitor from windows and lights that could impair the student's perception. To do this the supervisor should check by viewing the screen from the same position that the student will adopt.

If necessary, students should be shown how to indicate responses to the computer using the mouse, and when to respond (essentially when the tests will allow them to respond). This is particularly important when testing students with physical disabilities. As with any format assessment, students should not be allowed to take the tests if they are unwell, as results are likely to be unreliable.

Most students will experience no difficulties in understanding what is required of them when taking the tests in Exact, enabling them to follow the practice tasks easily and progress to the test phase without special attention from the teacher or supervisor. However, it is important that the administrator ensures that students understand the nature of the tasks in Exact: that they are tests and not games, and that they must work swiftly but thoughtfully and try their best at all times.

This is particularly important in the reading comprehension test, in which some students may be inclined automatically to click 'Can't tell' if they are unable immediately to find the answer to a question within the passage. Students should be made aware that the answer can often be *deduced* or *worked out* from the information given in the passage, and that the 'Can't tell' option should only be selected when there is insufficient information given in the passage to enable the answer to be deduced.

Students should also be made aware that although the reading comprehension test only lasts 10 minutes, they are not expected to finish it in that time and they should take enough time to get the earlier (easier) questions right.

In the rare event that a student does not understand the instructions spoken by the computer, the supervisor may re-express them in a more suitable manner. Explaining and re-expressing the task requirements to the student may continue into the demonstration and practice stages of each test. This is particularly useful for any student who is experiencing problems in understanding the true nature of the task. It is often easier for the student to comprehend the task requirements by experience of the practice stages than by more abstract oral explanation. Once the test items commence there should be no further aid given to the student.

## 2.6.4 Supervision

It is usually not necessary for students to be closely supervised while attempting the tests, unless the teacher or administrator has a particular reason to do so, e.g. when assessing the need for exam access arrangements, where JCQ regulations require the assessor who signs the JCQ forms to carry out the assessment (see Section 1.2.6). As with all computer delivered group tests, Patoss recommends that when assessing for exam access purposes, Exact should be administrated carefully so that individual student responses can be observed and monitored. The tests in Exact have been designed to be interesting and stimulating for students in this age group and the vast majority of students are highly motivated to do their best. Once the teacher is satisfied that the student understands the requirements of a test, has completed the practice items and has moved on to the test items, the teacher may leave the student to complete that test.

Where the teacher suspects that a student may not be well motivated to complete the test, or may be easily distracted, or may be performing deliberately below their capabilities, closer supervision will be necessary. Disaffected students may display non-compliance by clicking on test items or answers at random, rather than thinking about the tasks and selecting answers after proper consideration. Such students, or those with very low ability, may need close supervision in order to provide encouragement and ensure they remain on task. This is particularly important in the reading comprehension test, which requires careful thought (see Sections 2.2 and 2.6.3).

In order for the assessment to be 'fair' (i.e. to give a reasonably accurate representation of the student's abilities) it is essential to ensure that during the test:

- the student is paying attention, is 'on task', is not distracted and is trying their best
- the student does not become unduly fatigued
- there is no teaching or helping with the task during the test items (whether from the supervisor or other students)
- feedback from the supervisor is minimised and encouragement consistent (see further comments below).

## 2.6.5 Giving encouragement, prompts and feedback

As much as possible, the supervisor should avoid giving specific feedback to students during a test, because this may influence their behaviour in an undesirable fashion. This is good practice in any testing situation. There is a risk of feedback differentially affecting students, so that some are encouraged and others discouraged. Nevertheless, some students (particularly younger children or children with special educational needs) will try to elicit feedback from the supervisor about their performance. This may take the form of both verbal and nonverbal behaviours. For example, the student may ask directly if they were correct. Many students will look for the supervisor's facial and bodily reactions to their responses. Some students may even try to evaluate the supervisor's reaction by observing the supervisor's reflection in the monitor screen. For these reasons it is usually preferable that if the supervisor is going to be near the student to observe the assessment, they should sit to the side and slightly behind the student to minimise any feedback to the student which may bias the results.

Rather than specific feedback, general encouragement should be given to the student. This encouragement should be referenced to task completion rather than task accuracy and ideally should be delivered equitably to all students. However, it is inevitable that some students will require more encouragement than others, and where this is the case the teacher should be mindful of the possibility of influencing results unduly. Differential encouragement between students is likely to have an influence on the results obtained and therefore should be avoided where possible. Some key phrases and general incentive prompts which may be used to aid the administration of the tests include: “well done”; “you were good at that; now try the next one”; “you will like this game”; “now concentrate on this”; “try hard”; “listen very carefully”; “have a go at these ones”; “have a try”; “just do your best”.

## 2.7 Assessing students under age 11

It is standard practice that normative tests are not generally recommended for use outside the age range for which they have been standardised. Any test, such as Exact, which meets basic psychometric criteria must be standardised on a given population, and this will determine the range of applicability of the test (see Section 1.4 for an explanation of the standardisation process.) Tests appropriate to the student’s chronological age should be used wherever possible, to avoid the danger of inappropriate decisions being made – e.g. that a student is ‘at risk’ (or not ‘at risk’) when the evidence for this may be unsound.

If the student being assessed is younger than 11:0, then Exact will use the norms for 11-year-olds when analysing results, and this will almost certainly lead to an underestimation of their performance as chronological age generally has a major impact on performance in childhood. Consequently, use of Exact with children under the age of 11 is not recommended, and use with children under the age of 9 is definitely not approved. However, if it is necessary to use Exact with children between 9 and 11, ‘age equivalents’ would be the preferred form of scores for the teacher or administrator to use, and results should always be interpreted with caution. An age equivalent is defined as the chronological age range of individuals that would be expected to achieve a given raw score. However, age equivalents are a less accurate way of representing results than standard scores or percentile scores and so should be used with caution. For further information about age equivalents, see Section 3.2.4.

## 2.8 Assessing students aged 25 and older

Exact was designed for use with students aged up to 24 years 11 months, and use with students older than this can create uncertainties when interpreting results. If the student is older than 24:11 then the program will use the norms for 24-year-olds when analysing results. However, international research studies have shown that, for the vast majority of the population within developed countries, literacy skills do not alter significantly during the period from age 24 to 54.<sup>10</sup> Consequently, it is acceptable to use Exact with adults aged 25 and over if there are no

<sup>10</sup> Satherley, P. & Lawes, E. (2008) *The Adult Literacy and Life Skills (ALL) Survey: Age and Literacy*. Ministry of Education, New Zealand.

Scottish Government (2009) *Scottish Survey of Adult Literacies: Report of Findings, Part 4*. Edinburgh: The Scottish Government.

Cascio, E., Clark, D. & Gordon, N. (2008) *Education and the age profile of literacy into adulthood*. (Working Paper 14073) Cambridge, MA: National Bureau of Economic Research.

satisfactory alternative tests available. Normative results for adults aged 25-54 should not be significantly different to those for adults aged 24; nevertheless, administrators should exercise caution when drawing conclusions about results of older adults, and this particularly applies to results of the typing to dictation test.

Normative assessment of typing speed in adults aged 25 and over presents particular psychometric challenges because of the significant effects of cohort (i.e. most younger adults are able to type while most older adults cannot) and experience (i.e. most adults who have to use computers in their jobs can type much better than others), and also because this skill is changing very rapidly in the population as use of computers increases dramatically. Consequently, norms for typing speed of adults aged 25+ will inevitably be subject to large confidence limits, which would affect their reliability when making decisions about eligibility for access arrangements in examinations. When making decisions about whether the use of a word processor in examinations would be appropriate for adults aged 25+, assessors are therefore advised to rely more on their professional judgment about the typing competence of the individual than on normative test results for typing speed, for which Exact can only be certified up to the age of 24 years 11 months at the present time. However, Exact test results for typing speed will provide a useful comparison between the skills of any adult aged 25+ and the typical adult in their early 20s.

## 2.9 Retesting and repeated assessment

Exact has two forms of equivalent difficulty: Form A and Form B; and they allow for retesting or repeated assessment if desired. The two forms can be alternated over time in order to record progress, e.g. in response to intervention given to students with literacy difficulties (referred to here as 'continuous assessment'). However, the current version of Exact was designed primarily for identifying students who require access arrangements in examinations – i.e. for identifying significant weaknesses in literacy skills – not specifically for *continuous assessment*, which is focused on measuring improvement in literacy skills as a result of educational input.

### 2.9.1 Cautions regarding retesting and repeated assessment

When embarking on retesting or continuous assessment, it is particularly important to remember that when students are assessed on any psychometric test (whether administered conventionally or by computer) and the test (or a parallel form of it) is given again some time later, it must not be expected that the scores of all students will either stay the same or increase. Inevitably some will show a decline in scores, but this should not be taken to indicate that these latter students have necessarily decreased in the relevant ability. The reasons for this include not only the unsystematic and unpredictable variations to which all human performance is naturally subject, but also certain systematic factors that can dramatically influence test results. These factors include: rate of working, practice effects and regression to the mean. If misinterpretation of results is to be avoided when Exact is used repeatedly, it is important that administrators understand these factors and are fully aware of their possible impact on results.

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Sloat, E. & Willms, J.D. (2000) The International Adult Literacy Survey: Implications for Canadian Social Policy. *Canadian Journal of Education*, 25(3), 218-233.

## 2.9.2 Rate of working

Since Exact was designed primarily for access arrangements assessments, all the assessments in the suite have strict time constraints (i.e. they are 'speeded' tests). The reason behind this has already been explained in Section 1.1.2. In all speeded tests the rate at which the student works is an inherent factor in determining the results. The type of time constraint differs across the tests in Exact and this is more important in certain tests than others. In the tests of word recognition and spelling, a given time is allowed for each item; a fixed time limit (5 seconds per item) in the word recognition test and a variable time limit (geared to word length) in the spelling test. In the reading comprehension, handwriting to dictation and typing to dictation tests, an overall time limit is imposed rather than a time limit per item. In reading comprehension, 10 minutes is allowed for the whole test, and students are required to attempt as many items as they can within that time (but not necessarily to attempt all the items). Both handwriting to dictation and typing to dictation have an overall time limit of 7 minutes.

The word recognition and spelling tests may be regarded as *simple tests* because:

- they comprise a large number of items
- items are independent of each other
- the student either knows or does not know the answer
- as soon as one item has been completed the student is immediately presented with the next.

This means that the task is automatically paced by the time constraints placed on each item. If an item is not completed within the time limit, the program automatically advances to the next item, and so on. Although variation in speed of working between different students is likely to affect the results, variation in the speed at which an individual student works on different testing occasions is unlikely to affect the results very much. Consequently, time is a less important factor in these tests, and differences in scores on these tests from one occasion to the next are principally a result of changes in student ability rather than speed of working.

The dictation tests employ a different type of time constraint but the nature of the tasks means that each item (i.e. a phrase heard by the student) can be regarded as essentially independent of the other items (i.e. previous and subsequent phrases in the passage). As soon as the student signals they have finished writing or typing one phrase, the computer automatically gives the next phrase, and so on until the time limit is reached. The task is self-paced and, in principle, differences in scores on these tests from one occasion to the next could arise from the student not working as hard on one of the occasions as on the other. In practice, however, it turns out that time is not such an important factor because item independence coupled with task simplicity results in differences between testing occasions being principally attributable to changes in writing ability.

The reading comprehension test contrasts markedly with the other tests in the Exact suite. Text passages are presented, and several items (in the form of multiple-choice questions) relating to each passage have to be attempted within the time limit. In order to answer questions, the student may have to refer back to the text or consider answers to previous questions. Hence this test may be regarded as *complex* rather than simple because items within a passage are not independent and it is not simply a case of either knowing or not knowing the answer but, rather,

of being prepared to devote sustained mental effort at an optimum rate over the whole task in order to work out each answer. The 'optimum rate' is a speed that is consistent with their word recognition and verbal comprehension ability. If they exceed their optimal speed, they will make more word recognition errors and be more likely to misunderstand sentences, which will result in a lower score. If they read slower than their optimal speed, they will have insufficient time to attempt all the passages and so be prevented from the opportunity of answering more questions than the less able readers, which will also result in a lower score. Either way, the student will appear to be a less able reader than is really the case.

It should be apparent that if the student is tired, less well-motivated or not in a positive mood, or if they perceive that the consequences of less effort will not matter very much, they will tend to work slower and be less inclined to put in the necessary cognitive effort. If this happens, their score will be unlikely to reflect their true ability.

### 2.9.3 Practice effects

'Practice effects' are the positive or negative psychological impacts of previous assessment(s) on a student's performance.<sup>11</sup> Positive impacts, which include factors such as item familiarity and increased confidence as a result of previous experience with the tasks, tend to inflate scores on subsequent assessment occasions. Negative impacts, which include factors such as decreased motivation due to boredom with the tasks or overconfidence as a result of feedback from previous assessments, tend to deflate scores on subsequent assessment occasions. In general, the magnitude of practice effects is a function of how often students have been assessed and the time interval between assessments. Both positive and negative psychological impacts tend to increase as the time interval between assessments decreases. Furthermore, practice effects will not necessarily affect all students to the same extent. Some students may experience more negative effects, while others may experience more positive effects.

### 2.9.4 Regression to the mean

All test scores, by their very nature, are variable. On any psychometric test the actual score obtained is an estimate of the student's true score, which will fall within a certain range of the actual score; this range is known as the 'confidence interval'. It means that one can have a certain level of confidence (in this case 90% confidence) that the student's true score lies within a range of the actual score that is equal to plus or minus the 'confidence interval'. On another occasion on the same test, the same student is likely to score slightly differently, which could be higher or lower than the previous score. The confidence interval for any test is determined by the test's reliability - i.e. the extent to which it can be relied on to give the same result on another occasion.

Consequently, human beings do not perform at the same level on every occasion, and some assessment tasks are more influenced by this variability. Over time, a person's skills may increase as a result of learning, practice and general experience. However, many other things also influence performance, such as mood, motivation, tiredness, instructions and perceived consequences. As explained above, *simple tests*, i.e. ones where the student either knows or does not know

<sup>11</sup> For further explanation of practice effects see: Kulik, J.A., Kulik, C-L.C. and Bangert, R.L. (1984) Effects of Practice on Aptitude and Achievement Test Scores. *American Educational Research Journal*, 21, 435-447.



the answer (e.g. Exact word recognition and Exact spelling) are less subject to such influences than more *complex tests*, such as Exact reading comprehension, where it is not a case of either knowing or not knowing the answers but, rather, of being prepared to devote sustained mental effort at an optimum rate over the whole task in order to work out the answers.

Coupled with the general tendency of any measurement process to involve a degree of random error, these natural variations in test scores result in the statistical phenomenon known as ‘regression toward the mean’, whereby a score that is extreme (meaning further away from average performance) on its first measurement, will tend to be closer to the average on its second measurement, and if it is extreme on its second measurement, it will tend to have been closer to the average on its first.<sup>12</sup>

### 2.9.5 What interval should be allowed before retesting?

The previous three subsections make clear that, when carrying out repeated testing, variation in test performance is always to be expected, and gains cannot be counted on. Even when the best teaching has been provided, it is likely that a few students will exhibit apparent drops in performance from one test occasion to the next. This is due to various factors, including the impact of rate of working (more noticeable in complex as opposed to simple test formats), practice effects (more pronounced if the interval between testing occasions is short), and regression toward the mean (scores that are extreme on the first measurement will tend to be closer to the average on the second measurement). When interpreting results and conveying results to pupils, teachers or parents, or if using results to demonstrate ‘value added’, it is essential that administrators take these factors into account and avoid drawing naïve or simplistic conclusions from changes in scores from one testing occasion to the next.

Therefore, it is recommended that, in normal circumstances, the interval between successive assessments should be preferably one year or, at the very least, one term or semester. Even though there are two parallel forms, if the period between successive assessments is relatively short (i.e. a matter of weeks or up to a school term or semester), practice effects could still arise and confound results. Research has shown that when retesting after a long school holiday performance is more likely to have declined.<sup>13</sup>

Occasionally exceptional situations may arise where a teacher needs to re-administer one or more of the tests in Exact after a much shorter interval, e.g. if it is discovered that when the student first took the tests he or she was unwell, or where a fire drill interrupted the assessment, or if the student was clearly not applying proper attention or effort to the tasks. In such cases, the results are unlikely to give a true indication of abilities and it is permissible to re-test the student. Nevertheless, there should be a delay of at least two weeks before re-administering the test(s) and the alternative form should be used. The first result should be discarded and the second result should be regarded as the true result.

<sup>12</sup> Upton, G. & Cook, I. (2006) *Oxford Dictionary of Statistics*, Oxford University Press.

Stigler, S.M. (1997). Regression toward the mean. *Statistical Methods in Medical Research*, 6, 103-114.

Tweney, R.D. (2013) Reflections on regression toward the mean. *Theory and Psychology*, 23, 271-274.

<sup>13</sup> Sainsbury, M., Whetton, C., Mason, K. and Schagena, I. (1998) Fallback in attainment on transfer at age 11: evidence from the Summer Literacy Schools evaluation. *Educational Research*, 40, 73-81.

Davies, B. & Kerry, T. (1999) Improving student learning through calendar change. *School Leadership and Management*, 19(3), 359-371.

## 2.10 Assessing students who have limited English

Assessment of any student who has limited proficiency in spoken or written English is often problematic. All the tests in Exact require considerable knowledge of written English and students who lack this knowledge would be expected to be impaired across the full range of measures in the suite. Exact results of students for whom English is an additional language should therefore be considered in relation to the level of English knowledge of the student, with the conclusion being modified in the light of this. Factors that should be taken into consideration include whether or not English is one of the languages spoken in the student's home, how long the student has been living in an English-speaking environment, and how long the student has been educated in English.

When using the results of Exact in conjunction with applications for exam access arrangements, it is important to be aware that limited proficiency in spoken or written English solely because English is not the student's first or main language (EAL) is not a criterion for having difficulties in learning, cognition, language or communication. What must be evidenced is that: "The candidate must have an impairment in their first language which has a substantial and long-term adverse effect. A candidate does not have a learning difficulty simply because their first language is not English, Irish or Welsh." (JCQ AARA 2018-19, Section 4.1.2). Consequently, where it is suspected that an EAL candidate has difficulties that might qualify for exam access arrangements, great care is taken to evidence this by means of appropriate test results that show impairment in cognitive skills such as working memory, processing speed, etc., and by showing that the student's experience of English has been adequate enough for normal literacy skills to be expected.

For further information on assessment of learning difficulties in literacy (including dyslexia) in EAL students and other multilingual students, see Cline (2000), Cline and Frederickson (1999), Cline and Shamsi (2000), Durkin (2000), Gunderson, D'Silva and Chen (2011), Peer and Reid (2016), and Tzagari and Spanoudis (2013).<sup>14</sup>

<sup>14</sup> Cline, T. (2000) Multilingualism and dyslexia: Challenges for research and practice. *Dyslexia: An international journal of research and practice*, 6(1), 3-12.

Cline, T. and Frederickson, N. (1999) Identification and assessment of dyslexia in bi/multilingual children. *International Journal of Bilingual Education and Bilingualism*, 2(2), 81-93.

Cline, T. and Shamsi, T. (2000) Language needs or special needs? The assessment of learning difficulties in literacy among children learning English as an additional language (Research Report RR184). London: Department for Education and Employment.

Durkin, C. (2000) Dyslexia and bilingual children – Does recent research assist identification? *Dyslexia: An international journal of research and practice*, 6(4), 248-267.

Gunderson, L., D'Silva, R. and Chen, L. (2011) Second language reading disability: International themes. In McGill-Franzen, A. and Allington, R.L. (Eds) *Handbook of Reading Disability Research*. Oxford and New York: Routledge, pp.13-24.

Peer, L. and Reid, G. (Eds) (2016) *Multilingualism, literacy and dyslexia: A challenge for educators*. London: Routledge.

Tzagari, D. and Spanoudis, G. (Eds) (2013) *Assessing L2 students with learning and other disabilities*. Newcastle upon Tyne: Cambridge Scholars Publishing.

# 3 Understanding results

## 3.1 Types of report

Exact creates a report for each student, which contains various sections. These are outlined below.

### 3.1.1 Results profile

This shows the standard scores for the six different measures (word recognition, reading comprehension accuracy, reading comprehension speed, spelling, typing speed and handwriting speed) in both 'graphical' and 'tabular' form. The key data needed for JCQ Form 8 may be extracted from these. The summary table of results also shows percentile scores for each test. Note that on the chart the average score range (standard score 85–115) is shaded grey. To aid speedy identification of areas of difficulty, the bars on the chart are coloured blue if the standard score is 85 or above (i.e. within the normal range or better), and yellow if below 85 (i.e. below the normal range, indicating that the result is a matter of concern). An example is shown in Figure 1. For explanations of the meaning of 'standard scores' and 'percentile scores' see Sections 3.2.1 and 3.2.3, respectively.

### 3.1.2 Cautionary warning regarding dubious reading speeds

The program checks whether the student has devoted a reasonable amount of time to the reading comprehension passages. If a student has completed the reading comprehension test in **less than eight minutes** the results should be regarded as '**doubtful**', i.e. it is unlikely that proper consideration has been given to the answers, and hence the scores will be unreliable and should not (on their own) be used as meaningful evidence for exam access arrangements. If a student completes the reading comprehension test in **less than five minutes**, the results should be regarded as '**impossible**', i.e. the student has answered the comprehension passages so quickly that it is impossible for them to have given proper consideration to the answers, and hence the scores are not safe to be used as evidence for any purpose.

When the program detects doubtful or impossible performance, a warning is given in red underneath the summary table, and the bars relating to that performance are shown in coloured hatching rather than solid block colour. Since this outcome necessarily places limitations on the use that can be made of the results of the reading comprehension test, assessors may wish to repeat this test having provided appropriate guidance to the student regarding how the test should properly be attempted (see Section 2.2 for further advice on this matter). When re-testing, the alternate form of the test (A or B, as appropriate) should be employed (see Section 2.9 for guidance on this).

### 3.1.3 Assessor's comments

There is a space at the foot of the Results profile for assessor's comments, which can be typed into Testwise. As a rough guide, about 1,250 characters may be included in the comment. The report will not check the length of the text entered, so it may overflow the page if too many words are entered. Alternatively, comments may be typed separately and pasted in, or written directly on to the Exact printout.

### 3.1.4 Results breakdown

This gives a complete breakdown of all the test scores in several tables, including comparison of ability to read and spell regular and irregular words, and the complete passage as typed to dictation by the student. An example is shown in Figure 2. Results on this page are shown in the following principal formats: standard scores (for explanation see Section 3.2.1), confidence intervals (for explanation see Section 3.2.2), percentile scores (for explanation see Section 3.2.3) and age equivalents (for explanation see Section 3.2.4). In addition, this page includes raw scores (or, in the case of word recognition, transformed scores – see Sections 1.4 and 2.1 for an explanation regarding this) and (where appropriate) times.

When the program detects doubtful or impossible performance on the reading comprehension test a warning is given in red underneath the results breakdown for that test (for further information see Section 3.1.2).

### 3.1.5 Checking the scores from the dictation tests

The raw scores for the dictation tests (i.e. the number of words typed and handwritten) are estimated by the computer based on the typed text saved and the number of phrases listened to by the student for the handwriting task. In about 95% of cases these figures are sufficiently accurate to be safely used in the report. However, in a few cases where the student has not followed the instructions properly the computer's estimates can be significantly different to the true figures.

Administrators should therefore carry out a visual inspection of the number of words typed and handwritten and, if a discrepancy is suspected, the administrator can manually count the number of words and enter the figures into Testwise. The manually entered figures will then replace the computer's estimated figures in the report.

This page will also show the number and percentages of spelling errors in handwriting and typing if the raw data for these have been entered. The computer does not count or estimate the number of spelling errors made in the dictation tasks and hence, if this information is required on the report, the administrator must manually enter the relevant data. The procedure for this is shown on the Testwise help site. The program will then calculate the percentages of spelling errors and display these on the report. If the relevant data are not manually entered, the number and percentages of spelling errors in handwriting and typing will be shown as zeros on the report.

### 3.1.6 Itemised responses

This gives the student's responses for all items in reading comprehension and spelling. This information can be useful for diagnostic purposes. An example is shown in Figure 3. Note that as the spelling test is adaptive, not all items are administered; skipped items are shown as a dash but are credited to the score as if passed correctly.

### 3.1.7 Handwriting to dictation

The final section of the report is reserved for incorporating and displaying a scanned image of the student's handwriting to dictation. The procedure for this is described on the [Testwise help site](#). This facility is optional, and if an image is not available this page will remain blank. An example is shown in Figure 4.

## 3.2 Types of scores

All raw scores on Exact are saved automatically to a single data file on completion of each test. The data saved also include the date and time the test was completed, as well as the registered details of the student. If a test has been abandoned before completion, then no results will be saved for that test.

The program then refers to the standardised norms in order to convert raw scores to the following three types of score:

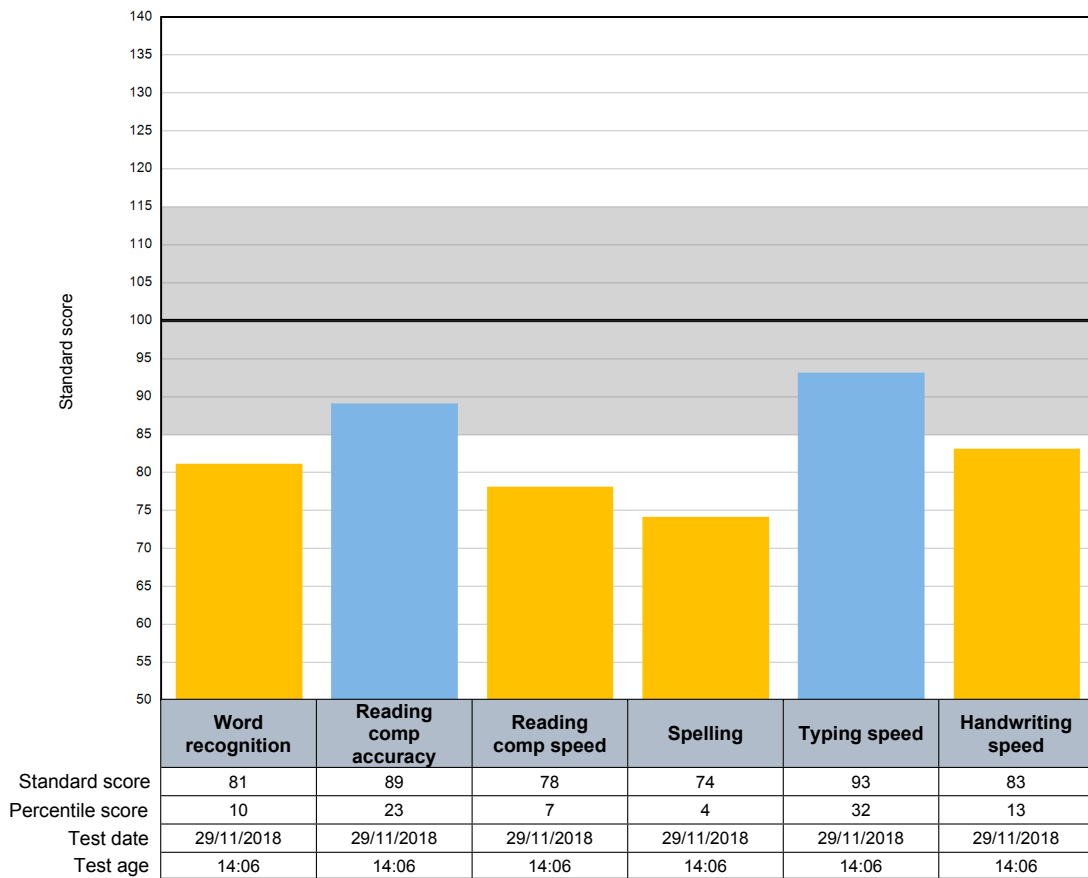
- Standard scores (and confidence intervals)
- Percentile scores
- Age equivalents

The first of these is shown in graphical (bar graph) format as well as numerical format, while the remaining two are shown only in numerical format. These different types of score formats are explained in the following sections.

<b>Name:</b> Student John	
<b>Date of birth:</b> 08/05/2004	<b>Form:</b> A
<b>Date of test:</b> 29/11/2018	<b>Group:</b> Class1

## Results profile

Standard score of 85 or higher (blue bar)  
Standard score of 84 or lower (yellow bar)



**Assessor's comments** John is a bright boy who has a diagnosis of dyslexia. His reading, writing and spelling skills have been noted by teachers to be below levels expected for his age and general ability, and this is confirmed by the tests, with all literacy measures except reading comprehension and typing speed below standard score 85. John tries to use his intelligence to compensate for his poor reading skills, with the result that his reading comprehension score is within the average range. However, his reading speed is very slow and he has difficulty decoding new or unusual words, especially under conditions of time pressure as in examinations, which often causes him to misunderstand the questions. His spelling and writing are particularly poor, with about 13% misspelled or undecipherable words. Although his handwriting speed is below average, his typing speed is in the average range for his age. It is recommended that John be permitted 25% extra time in examinations and also to use a word processor.

Figure 1. Example of Results profile

<b>Name:</b> Student John	
<b>Date of birth:</b> 08/05/2004	<b>Form:</b> A
<b>Date of test:</b> 29/11/2018	<b>Group:</b> Class1

## Results breakdown

### Word recognition

Test date: 29/11/2018 Age at test: 14:06

Measure	Regular words	Irregular words	Overall words
Standard score	88	75	81
Confidence interval	84 - 92	70 - 80	75 - 87
Percentile score	21	5	10
Transformed score	12	9	21
Age equivalent	12:0 - 12:11	9:4 - 10:3	11:4 - 11:7

Total words correct: 39

Total time (min:sec): 03:11

### Reading comprehension

Test date: 29/11/2018 Age at test: 14:06

Measure	Accuracy	Speed
Standard score	89	78
Confidence interval	79 - 95	68 - 88
Percentile score	23	7
Raw score	24	50 wpm
Age equivalent	12:8 - 13:3	9:7 - 9:11

Passage number	1	2	3	4	5	Total
Questions	5	10	10	10	10	45
Attempts	5	10	10	10	3	42
Correct answers	4	8	7	4	1	24
Time (min:sec)	01:00	02:37	03:03	02:25	00:56	10:00

### Spelling

Test date: 29/11/2018 Age at test: 14:06

Measure	Regular words	Irregular words	Overall words
Standard score	67	82	74
Confidence interval	62 - 73	76 - 90	67 - 81
Percentile score	1	12	4
Raw score	14	8	22
Age equivalent	8:8 - 8:11	11:1 - 11:3	9:7 - 9:8

ADVICE: Age equivalents are approximate and should only be used where Standard scores or Percentile scores are inappropriate.

Figure 2. Example of Results breakdown

<b>Name:</b> Student John	
<b>Date of birth:</b> 08/05/2004	<b>Form:</b> A
<b>Date of test:</b> 29/11/2018	<b>Group:</b> Class1

## Written dictation

Test date: 29/11/2018 Age at test: 14:06

*Words dictated / actual count	128
Speed	18 wpm
Standard score	83
Confidence interval	75 - 91
Percentile score	13
Age equivalent	12:0 - 12:5
*Spelling errors (count)	17
Spelling errors (per cent)	13.00

\* Actual figures can be entered manually by the assessor – see the [Testwise help site](#) for details

## Typed dictation

Test date: 29/11/2018 Age at test: 14:06

*Words dictated / actual count	147
Speed	21 wpm
Standard score	93
Confidence interval	86 - 100
Percentile score	32
Age equivalent	13:0 - 13:5
*Spelling errors (count)	21
Spelling errors (percent)	14.00

\* Actual figures can be entered manually by the assessor – see the [Testwise help site](#) for details

**ADVICE:** Age equivalents are approximate and should only be used where Standard scores or Percentile scores are inappropriate

## Typed passage

one day last year we saw a lot of bees going in and out of some hold hifes behind our garige. My frend once sat on a bee and got stong on the bottem so i was a bit scared of them but I know a lady who keeps bees and i asked her if she will take them away. However she thortlernt to keep them myself. She told me what i needed and what cloves to buy the was a speshal jacket, which included a hat and vayal, and some thick lever gloves, then she sowed how the bees beld their come on trans in the hive and she tote me hoe to handel them. Then we lifted off the roof of the hife and looked at the fraims where the quean was laying her eggs. When we spotted her, we marked her with a dab



<b>Name:</b> Student John	
<b>Date of birth:</b> 08/05/2004	<b>Form:</b> A
<b>Date of test:</b> 29/11/2018	<b>Group:</b> Class1

## Itemised responses

### Reading comprehension accuracy

#### Passage 1

Q.	Correct	Response	Score
1	No	No	1
2	Yes	Yes	1
3	No	No	1
4	Can't tell	Can't tell	1
5	18	12	0

#### Passage 2

Q.	Correct	Response	Score
1	Yes	Yes	1
2	No	No	1
3	Can't tell	Can't tell	1
4	Yes	Yes	1
5	No	No	1
6	Yes	Yes	1
7	No	No	1
8	Yes	Can't tell	0
9	Yes	Can't tell	0
10	No	No	1

#### Passage 3

Q.	Correct	Response	Score
1	Yes	Yes	1
2	No	Yes	0
3	Can't tell	Can't tell	1
4	No	No	1
5	Yes	Can't tell	0
6	No	No	1
7	Can't tell	Can't tell	1
8	Yes	Yes	1
9	Can't tell	Yes	0
10	No	No	1

#### Passage 4

Q.	Correct	Response	Score
1	No	Yes	0
2	Yes	Yes	1
3	No	No	1
4	No	No	1
5	Can't tell	Can't tell	1
6	No	Can't tell	0
7	Yes	No	0
8	Can't tell	Yes	0
9	Yes	No	0
10	Can't tell	No	0

#### Passage 5

Q.	Correct	Response	Score
1	No	Yes	0
2	Yes	Can't tell	0
3	Yes	Yes	1
4	No	not attem'd	0
5	No	not attem'd	0
6	Can't tell	not attem'd	0
7	No	not attem'd	0
8	No	not attem'd	0
9	No	not attem'd	0
10	Yes	not attem'd	0

Figure 3. Example of itemised responses

<b>Name:</b> Student John	
<b>Date of birth:</b> 08/05/2004	<b>Form:</b> A
<b>Date of test:</b> 29/11/2018	<b>Group:</b> Class1

### Spelling accuracy (test is adaptive)

Q.	Correct	Spelt as
P1	bed	bed
P2	nose	nose
P3	juice	joos
P4	increase	---
P5	crumb	---
6	foot	---
7	name	---
8	top	---
9	day	---
10	man	---
11	pan	---
12	egg	---
13	ice	---
14	sea	---
15	kick	---
16	girl	---
17	goal	---
18	web	web
19	knife	knife
20	pair	pear
21	nature	nature
22	diagram	diergam
23	infection	infeckion
24	engine	engine
25	ghost	ghost

Q.	Correct	Spelt as
26	captain	captain
27	acrobat	akrobat
28	festival	festeval
29	height	height
30	physics	pyrics
31	theatre	theatre
32	sphere	sfere
33	anchor	---
34	referee	---
35	orchestra	---
36	aquarium	---
37	mysterious	---
38	mosquito	---
39	binoculars	---
40	observatory	---
41	literature	---
42	photosynthesis	---
43	environment	---
44	architecture	---
45	circumference	---
46	necessary	---
47	rhythm	---
48	hygienic	---
49	catasrophe	---

Name: Student John	
Date of birth: 08/05/2004	Form: A
Date of test: 29/11/2018	Group: Class1

## Handwriting to dictation

Sam was fourteen and he knew it all.  
 When the family went on the river on a long  
 boat, Sam told them what to do even Mum and  
 Dad. He told Rose and Jamie not to fall in  
 the water, and Mum how to push off the boat.  
 He so even told Dad were to steer.  
 When they got to the first locks, Sam knew  
 how to work it. They tied up just below it,  
 while Sam and Mum opened the gates and Dad  
 took the boat to the lower, then they closed the  
 stoppers on the lower gates and opened the  
 upper ones.  
 Sam told Rose how to wind up the closed with  
 the big handle from the top of the gate. He  
 stepped back to watch her.

Figure 4. Example of handwriting to dictation

### 3.2.1 Standard scores

Standard scores are provided in 3-month age bands from 11:0 to 18:11 and in 12-month age bands from 19:0 to 24:11. Standard scores have a mean (average) of 100 and a standard deviation of 15.<sup>15</sup> They are distributed in a normal (bell-shaped) curve as shown in Figure 5. Distribution of Exact scores on a normal curve. Approximately two-thirds of the population will have scores that fall between plus or minus one standard deviation of the mean (i.e. score range 85–115, which is the area shaded blue on the graph in Figure 5. Distribution of Exact scores on a normal curve (for explanation see Section 3.2.1). In some scoring systems the range 85–115 is regarded as the ‘average range’, while other systems treat 90–110 as the ‘average range’; in the latter case, 50% of the population will fall into the average band. The more extreme the score the fewer individuals are found in that category, so that only about 2% of the population have very low scores (less than 70) and about 2% have very high scores (130+). This distribution of scores is a characteristic of all human attributes (height, weight, strength, sociability, etc.), i.e. most people tend to cluster around a central point, and as one approaches the extremes (known as the ‘tails’ of the distribution) fewer people are found.

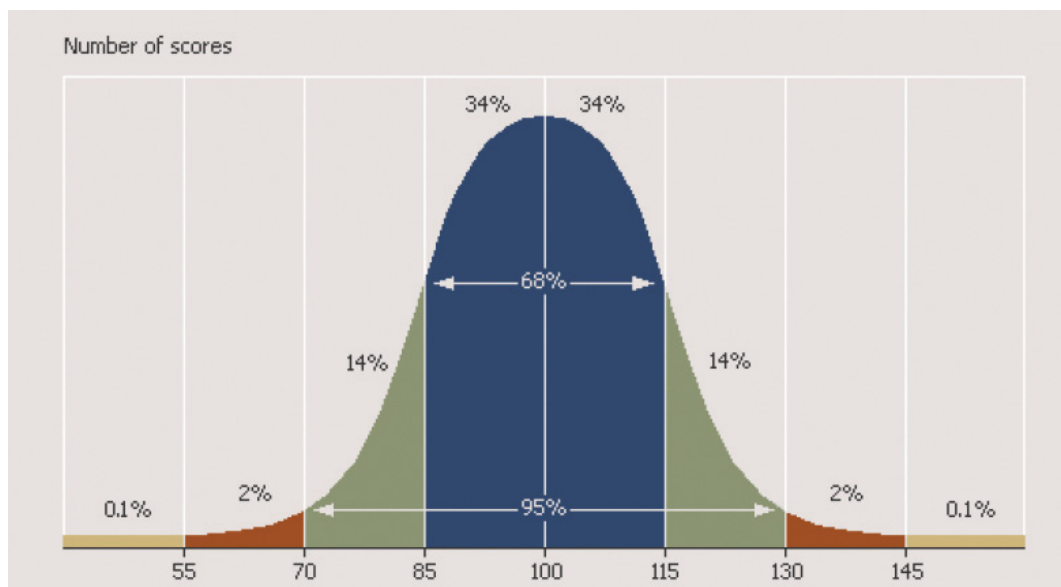


Figure 5. Distribution of Exact scores on a normal curve (for explanation see Section 3.2.1)

### 3.2.2 Confidence intervals

When reporting a standard score, it is good practice also to report the *confidence interval* attached to that score. The reason for this is that all psychological and educational test scores give only *estimates* of ability, based on a sample of behaviour at a given point in time. If you were to assess a student on several occasions you would not expect him or her to obtain exactly the same score each time – there would be a spread of scores, and somewhere within that spread we would expect the (hypothetical) *true score* to lie. The amount of spread or variation of actual scores obtained by an individual is dependent on the *reliability* of the test. The confidence interval is the zone around the standard score in which we are reasonably confident the *true score* lies. Different confidence intervals may be set; for Exact we have set a confidence level of 90%, which means that there is a 90% probability that the true standard score lies within the stated

<sup>15</sup> The standard deviation is a measure of the variation of scores in a distribution.

confidence interval. Put another way, if the student was retested 100 times, on 90 out of 100 occasions the score would lie within the stated confidence interval.

Confidence intervals are calculated on the basis of the 'Standard Error of Measurement' (SEM) of a test which, in turn, is determined by the reliability of the test and the standard deviation of test scores (see Section 1.6). Confidence intervals are shown in the Results breakdown section of the Exact report.

### 3.2.3 Percentile scores

Percentile scores are provided in 3-month age bands from 11:0 to 18:11 and in 12-month age bands from 19:0 to 24:11. Percentile scores (sometimes referred to as 'centile' scores) represent the student's performance in comparison with the population norms in percentile units, which range (roughly) from 1 to 99. A percentile score of 63, for example, means that the student's score lay at the point where 63% of the population scored less, and 37% scored more. A percentile score of 50 indicates that the student's score lay exactly on the median (middle point) of the distribution, with half the age group scoring higher and half lower. As will be obvious from Figure 5, percentile scores have a strict relationship with standard scores, as shown in Table 5. Relationship between standard scores and percentile scores.

Table 5. Relationship between standard scores and percentile scores

<b>Standard score</b>	70	80	85	90	100	110	115	120	130
<b>Percentile score</b>	2	9	16	25	50	75	84	91	98

### 3.2.4 Age equivalents

Age equivalents are provided for the age range 6:0 to 18:11 (over this age, age equivalents become meaningless). Age equivalents may be defined as the average chronological age of students who would be expected to achieve a given raw score on the test. The most common type of age equivalent in educational testing is the 'reading age'. For example, to say that a student has a reading age of 14 means that they read like an average 14-year-old, regardless of their chronological age. Note that age equivalents, by their very nature, are not as precise as standard scores or percentile scores; age equivalents are approximations and hence are often given in bands. Age equivalents should be used with caution and only in cases where standard scores or percentile scores would be inappropriate or unhelpful. It is embarrassing and demotivating for a teenager or adult to be told (for example) that they have a spelling age of a 7-year-old! However, some teachers working in special education prefer to use age equivalents rather than percentile scores, because age equivalents enable them to conceptualise the ability level of the student they are teaching, and so pitch the work at the correct level.

## 3.3 Using Exact with LASS or LADS Plus

Exact is designed to provide measures of literacy skills and, although these measures may in some cases suggest dyslexia or other learning problems, Exact is not a diagnostic test as such. Administrators who require a test that will identify dyslexia should consider using LASS 11-15 (for

the age range 11:0–15:11) or LADS Plus (for ages 15 and upwards). In fact, a combination of Exact with either LASS 11-15 or LADS Plus is a very powerful toolset not only for *identifying* dyslexia or other learning problems but also for determining the extent to which dyslexia or other learning problems are impairing the student's capacity to learn, and for determining appropriate remedial intervention. For further information about these programs, please visit the GL website [www.gl-assessment.co.uk](http://www.gl-assessment.co.uk).

### 3.3.1 LASS 11-15

LASS 11-15 is a fully computerised multifunctional assessment system for use with students in the age range 11 years 0 months to 15 years 11 months. The suite comprises eight different tests that assess the following skills:

- single word reading
- sentence reading
- spelling
- reasoning (nonverbal intelligence)
- auditory memory ('Mobile')
- visual memory ('Cave')
- phonic skills ('Nonwords')
- phonological processing ('Segments')

Unlike Exact, none of the tests in LASS 11-15 is speeded. The full LASS 11-15 suite takes about 45–60 minutes to administer. However, if LASS 11-15 is administered after Exact, the tests of single word reading, sentence reading and spelling may be omitted as this information will already have been provided by Exact. By omitting these three tests, administration of LASS 11-15 is generally reduced to less than 30 minutes. Results can be viewed on screen or printed out immediately.

LASS 11-15 enables teachers to:

- identify students with dyslexia (specific learning difficulty) or who have related learning problems
- obtain a reasonable estimate of the student's intelligence
- identify students who are under-performing in literacy compared with their intelligence
- identify underlying weaknesses in memory or phonological processing skills that could be the cause of literacy difficulties
- identify students with poor phonic decoding skills that may require remedial intervention
- assess improvements in memory, phonological and phonic decoding skills brought about by appropriate training or intervention

<sup>16</sup> Nonwords are sequences of letters that are not real words but which nevertheless conform to the orthographic rules of the language (e.g. 'sploff', 'blust', 'goster') and so can be decoded and pronounced as though they were real words. Since nonwords will not have been encountered by the reader previously, the person can normally only use phonological rules in order to decode them (visual, semantic or contextual strategies are of no help in decoding isolated nonwords). Nonwords thus provide a pure test of a person's competence in phonological decoding, or what is often referred to in education as 'phonics'.

### 3.3.2 LADS Plus

LADS Plus is a computerised test designed to screen for dyslexia in persons of 15 years and older. LADS Plus comprises five assessment modules:

- Nonverbal reasoning (matrix reasoning)
- Verbal reasoning (verbal conceptual reasoning, suitable for readers and non-readers)
- Word recognition (lexical decoding involving speeded recognition of real words from nonwords)
- Word construction (speeded lexical encoding of nonwords from syllables)
- Working memory (backwards digit span)

The last three of the tests in the list are *dyslexia sensitive* measures, which are reasonably independent of education and intelligence. However, the two reasoning tests have been included in order to increase the accuracy of detection of dyslexia further, and reduce the incidence of false negatives and false positives. These also enable the administrator to obtain a rough estimate of the person's intellectual ability, which may be important when making decisions about further action after screening.

The tests in LADS Plus are adaptive; that is, the program varies the items given according to the performance of the individual taking the test. This means that the assessment is swift and efficient. Each of the five modules takes about five minutes, so the whole screening can usually be completed in about 20–25 minutes. Results can be viewed on screen or printed out immediately.

Administration of LADS Plus does not require professional training in education or psychology. The tests are self-administered and the results are very easy to interpret. The program assists interpretation by stating the probability that the person has dyslexia: 'high probability', 'moderate probability', 'borderline' and 'low probability'. However, because all the results of any LADS Plus screening are available to administrators, they are not forced to accept the recommendations of the program; instead, they are free to use their own professional judgment when interpreting results and in making decisions about what to do next.

# 4 Illustrative case studies

## 4.1 Case A: A 17-year-old with dyslexia

### 4.1.1 Page 1. Results profile

Figure 6 shows the typical profile of a dyslexic who has become a fairly competent but slow reader. He still has spelling problems, but the reading comprehension tests show that his reading accuracy is in the normal range, although he reads slowly. His typing and handwriting speeds are both within the normal range.

### 4.1.2 Page 2. Results breakdown

See Figure 7. The breakdown of his reading comprehension scores ('correct answers' and 'time') show that he used the full 10 minutes of the test appropriately but struggled to comprehend the more complex language in passage 4, so that he had only just started passage 5 by the end of the test.

However, if we look at the typed passage, we see a number of typically dyslexic spelling errors ('are' for 'our' – a homophone; 'freind' for 'friend' – right letters in an irregular word, but in the wrong order; 'lurn' for 'learn' – a phonetic spelling).

### 4.1.3 Conclusion

On the grounds of his spelling and reading comprehension speed, he should be entitled to extra time in examinations.

His competent typing would also suggest that he should use a keyboard for as much of his coursework as possible. He will only be eligible to use a keyboard in exams if it is his usual method of working in school. Note, however, that permission to use a word processor does not grant permission to use a spell checker.

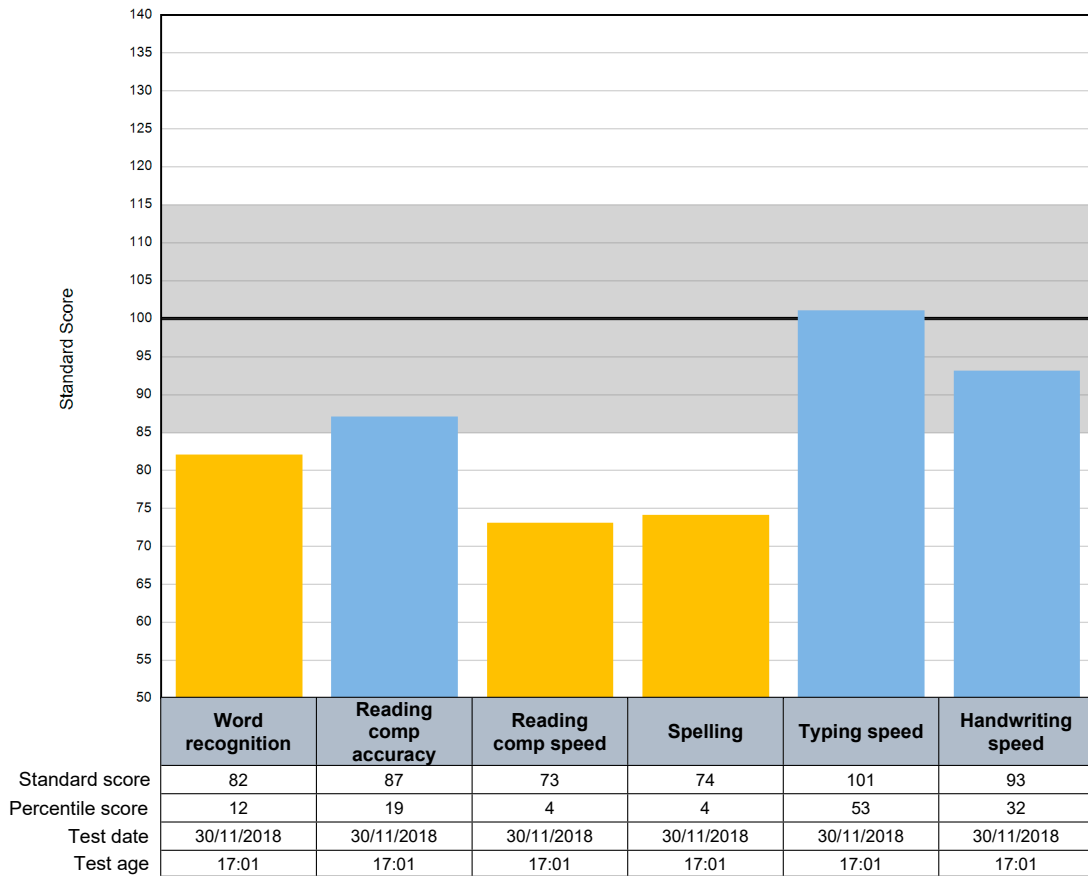
If he has not already been assessed for dyslexia, use of LADS Plus would be helpful in this regard (see Section 3.3.2).



<b>Name:</b> Mark Grayson	
<b>Date of birth:</b> 20/10/2001	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Results profile

Standard score of 85 or higher (blue bar)  
Standard score of 84 or lower (yellow bar)



**Assessor's comments**

Figure 6. Results profile for Case A

<b>Name:</b> Mark Grayson	
<b>Date of birth:</b> 20/10/2001	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Results breakdown

### Word recognition

Test date: 30/11/2018 Age at test: 17:01

Measure	Regular words	Irregular words	Overall words
Standard score	80	90	82
Confidence interval	76 - 84	85 - 95	76 - 88
Percentile score	9	25	12
Transformed score	12	13	24
Age equivalent	13:0 - 13:11	14:0 - 14:11	13:4 - 13:7

Total words correct: 52

Total time (min:sec): 02:11

### Reading comprehension

Test date: 30/11/2018 Age at test: 17:01

Measure	Accuracy	Speed
Standard score	87	73
Confidence interval	77 - 97	63 - 83
Percentile score	19	4
Raw score	22	52 wpm
Age equivalent	11:8 - 11:11	9:7 - 9:11

Passage number	1	2	3	4	5	Total
Questions	5	10	10	10	10	45
Attempts	5	10	10	10	1	36
Correct answers	4	7	6	4	1	22
Time (min:sec)	00:47	02:50	02:32	03:14	00:38	10:01

### Spelling

Test date: 30/11/2018 Age at test: 17:01

Measure	Regular words	Irregular words	Overall words
Standard score	66	82	74
Confidence interval	60 - 72	74 - 90	67 - 81
Percentile score	1	12	4
Raw score	16	10	26
Age equivalent	9:4 - 9:7	11:8 - 11:11	10:4 - 10:7

**ADVICE:** Age equivalents are approximate and should only be used where Standard scores or Percentile scores are inappropriate.

<b>Name:</b> Mark Grayson	
<b>Date of birth:</b> 20/10/2001	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Results breakdown

### Word recognition

Test date: 30/11/2018 Age at test: 17:01

Measure	Regular words	Irregular words	Overall words
Standard score	80	90	82
Confidence interval	76 - 84	85 - 95	76 - 88
Percentile score	9	25	12
Transformed score	12	13	24
Age equivalent	13:0 - 13:11	14:0 - 14:11	13:4 - 13:7

Total words correct: 52

Total time (min:sec): 02:11

### Reading comprehension

Test date: 30/11/2018 Age at test: 17:01

Measure	Accuracy	Speed
Standard score	87	73
Confidence interval	77 - 97	63 - 83
Percentile score	19	4
Raw score	22	52 wpm
Age equivalent	11:8 - 11:11	9:7 - 9:11

Passage number	1	2	3	4	5	Total
Questions	5	10	10	10	10	45
Attempts	5	10	10	10	1	36
Correct answers	4	7	6	4	1	22
Time (min:sec)	00:47	02:50	02:32	03:14	00:38	10:01

### Spelling

Test date: 30/11/2018 Age at test: 17:01

Measure	Regular words	Irregular words	Overall words
Standard score	66	82	74
Confidence interval	60 - 72	74 - 90	67 - 81
Percentile score	1	12	4
Raw score	16	10	26
Age equivalent	9:4 - 9:7	11:8 - 11:11	10:4 - 10:7

ADVICE: Age equivalents are approximate and should only be used where Standard scores or Percentile scores are inappropriate.

Figure 7. Results breakdown for Case A

<b>Name:</b> Mark Grayson	
<b>Date of birth:</b> 20/10/2001	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Written dictation

Test date: 30/11/2018 Age at test: 17:01

*Words dictated / actual count	157
Speed	22 wpm
Standard score	93
Confidence interval	85 - 101
Percentile score	32
Age equivalent	15:0 - 15:11
*Spelling errors (count)	0
Spelling errors (percent)	0.00

\* Actual figures can be entered manually by the assessor – see the [Testwise help site](#) for details

## Typed dictation

Test date: 30/11/2018 Age at test: 17:01

*Words dictated / actual count	192
Speed	27 wpm
Standard score	101
Confidence interval	94 - 108
Percentile score	53
Age equivalent	17:0 - 17:11
*Spelling errors (count)	0
Spelling errors (percent)	0.00

\* Actual figures can be entered manually by the assessor – see the [Testwise help site](#) for details

**ADVICE:** Age equivalents are approximate and should only be used where Standard scores or Percentile scores are inappropriate

## Typed passage

One day lats year we saw alot of bee's going in and out of some old hive's behind are garage. My freind once sat on a bee and got stung on the bottom, so i was a bit scared of them. But i know a lady that keeps bee's, and i asked her if she would take them away. However she thought that i should lurn to keep them myself. she told em what i needed and what cloths to but. The was a special jaket, which included a hat and vail, and some thick leather gloves. Then she showed me how the bee's build the comb on trains in the hive, and she taught me how to handle them. We used a smoker to puff out smoke which clams the down. Then we lifted of the roof of the hive and boked at the frames were the queen was laying her egg's. when we spotted her, we marked her with a dab of white marker ink on her body. we made certain that she was in the bottom box of frames and put a wire mesh called a queen excluder, ontop of that box.

## 4.2 Case B: A 14-year-old of high average ability

### 4.2.1 Page 1. Results profile

See Figure 8. The chart clearly demonstrates that this student is performing in the high average range in all fields, with standard scores between 103 and 115. It is immediately obvious that she does not have any literacy problems and does not need any exam concessions.

### 4.2.2 Page 2. Results breakdown

See Figure 9. This page shows her scores in more detail, and the typed passage demonstrates that she can correctly spell such words as *special*, *veil*, *calms*; words that many 14-year-olds find difficult.

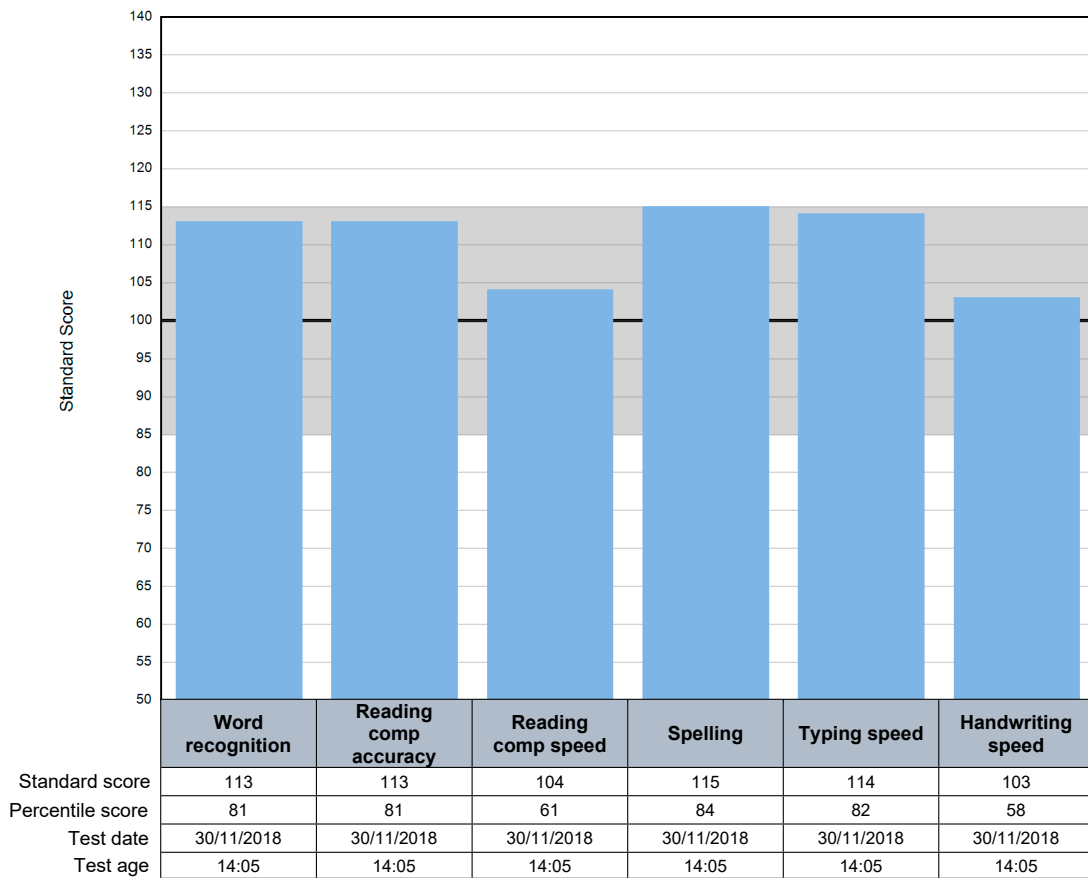
### 4.2.3 Conclusion

There are no grounds for access arrangements in this case.

<b>Name:</b> Ruth Charlton	
<b>Date of birth:</b> 29/06/2004	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Results profile

Standard score of 85 or higher ■ Standard score of 84 or lower



**Assessor's comments**

Figure 8. Results profile for Case B

<b>Name:</b> Ruth Charlton	
<b>Date of birth:</b> 29/06/2004	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Results breakdown

### Word recognition

Test date: 30/11/2018 Age at test: 14:05

Measure	Regular words	Irregular words	Overall words
Standard score	111	114	113
Confidence interval	107 - 115	109 - 119	107 - 119
Percentile score	77	82	81
Transformed score	16	16	32
Age equivalent	17:0 - 18:11	> 18:11	> 18:11

Total words correct: 60

Total time (min:sec): 01:54

### Reading comprehension

Test date: 30/11/2018 Age at test: 14:05

Measure	Accuracy	Speed
Standard score	113	104
Confidence interval	103 - 123	94 - 114
Percentile score	81	61
Raw score	31	97 wpm
Age equivalent	> 18:11	16:4 - 16:7

Passage number	1	2	3	4	5	Total
Questions	5	10	10	10	10	45
Attempts	5	10	10	10	10	45
Correct answers	5	8	9	6	3	31
Time (min:sec)	00:43	02:12	01:40	02:19	02:11	09:05

### Spelling

Test date: 30/11/2018 Age at test: 14:05

Measure	Regular words	Irregular words	Overall words
Standard score	113	115	115
Confidence interval	107 - 119	107 - 123	108 - 122
Percentile score	81	84	84
Raw score	28	18	46
Age equivalent	> 18:11	> 18:11	> 18:11

ADVICE: Age equivalents are approximate and should only be used where Standard scores or Percentile scores are inappropriate.

Figure 9. Results breakdown for Case B

<b>Name:</b> Ruth Charlton	
<b>Date of birth:</b> 29/06/2004	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Written dictation

Test date: 30/11/2018    Age at test: 14:05

*Words dictated / actual count	163
Speed	23 wpm
Standard score	103
Confidence interval	95 - 111
Percentile score	58
Age equivalent	16:0 - 16:11
*Spelling errors (count)	0
Spelling errors (percent)	0.00

\* Actual figures can be entered manually by the assessor – see the [Testwise help site](#) for details

## Typed dictation

Test date: 30/11/2018    Age at test: 14:05

*Words dictated / actual count	203
Speed	29 wpm
Standard score	114
Confidence interval	107 - 121
Percentile score	82
Age equivalent	> 18:11
*Spelling errors (count)	0
Spelling errors (percent)	0.00

\* Actual figures can be entered manually by the assessor – see the [Testwise help site](#) for details

**ADVICE:** Age equivalents are approximate and should only be used where Standard scores or Percentile scores are inappropriate

## Typed passage

One day last year we saw alot of bees going in and out of some old hives behind our garage. Myfriend once sat on a bee and got stung on the bottom, so i was a bit scared of them. But i know a lady who keeps bees, and i asked her if she would take them away. However she thought that should learn to keep them myself. She told me what i needed and what clothes to buy. There was a special jacket, which included a hat and veil, and some thick leather gloves. The she showed how the bees build the comb on frames in the hive, and she tought me how to handle them. \nWe used a smoker to puff out smoke which calms them down. Then we lifted off the roof of the hive and looked at the frames where the queen was laying her eggs. When we spotted her, we marked her with a dab of white marker ink on her body. We made certain that she was in the bottom box of frames and put a wire mesh called a queen excluder, on top of that box. This keeps her from laying eggs in the boxes above.



## 4.3 Case C: A 15-year-old of average ability

### 4.3.1 Page 1. Results profile

See Figure 10. Although this student has a wider spread of scores than Case B, they are all within the normal range. He has performed less well in the two tests where speed is important (word recognition and reading comprehension speed) which suggests that he is a slow but conscientious worker.

He types well, but his handwriting is good and he does not use a keyboard in class, so he will not be allowed to use a keyboard in exams, although he should obviously use one for as much coursework as possible. However, if use of a word processor were his normal practice in school he would now be able to use it in the exam.

### 4.3.2 Page 2. Results breakdown

See Figure 11. The reading comprehension scores show that he took longer than usual on each passage but that this paid off because he got full marks on all the first three passages, even though it only allowed him 55 seconds on the fifth passage.

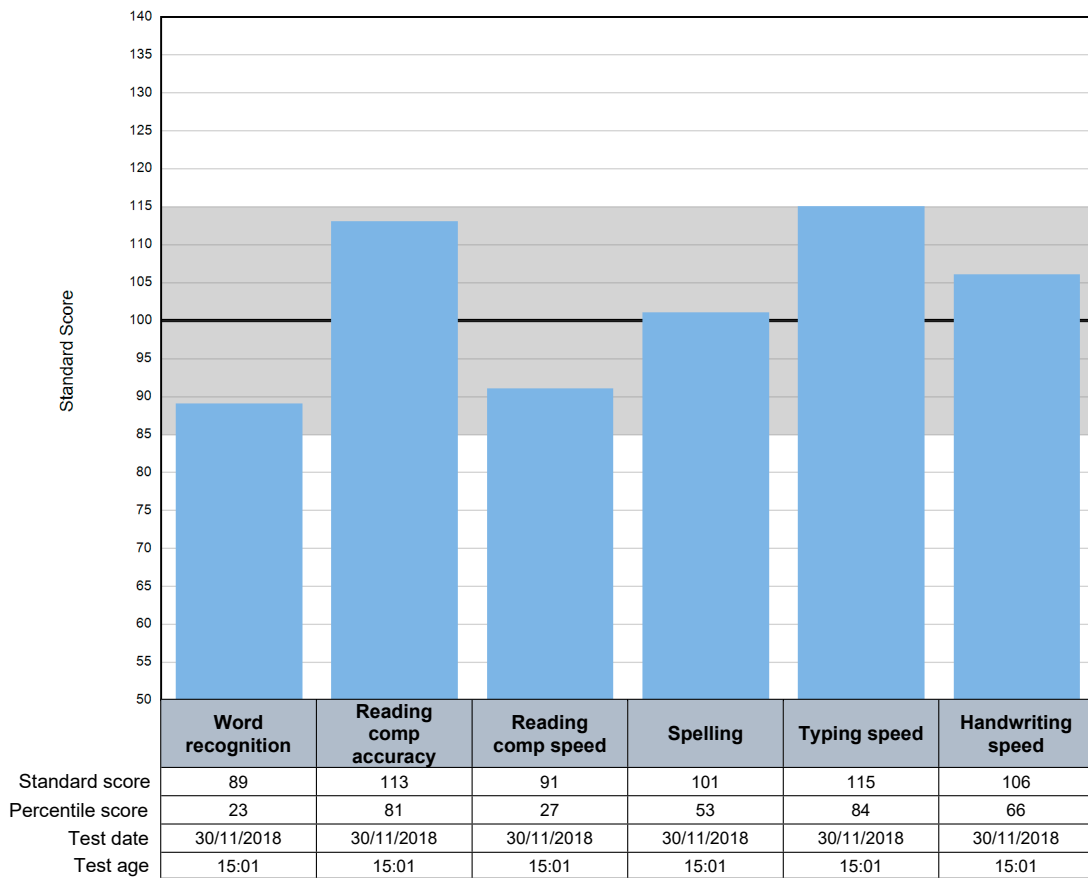
### 4.3.3 Conclusion

There are no grounds for access arrangements in this case.

<b>Name:</b> Pedersen Jason	
<b>Date of birth:</b> 11/10/2003	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Results profile

Standard score of 85 or higher ■ Standard score of 84 or lower



**Assessor's comments**

Figure 10. Results profile for Case C

<b>Name:</b> Pedersen Jason	
<b>Date of birth:</b> 11/10/2003	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Results breakdown

### Word recognition

Test date: 30/11/2018 Age at test: 15:01

Measure	Regular words	Irregular words	Overall words
Standard score	88	91	89
Confidence interval	84 - 92	86 - 96	83 - 95
Percentile score	21	27	23
Transformed score	12	12	24
Age equivalent	13:0 - 13:11	13:0 - 13:11	13:4 - 13:7

Total words correct: 56

Total time (min:sec): 02:21

### Reading comprehension

Test date: 30/11/2018 Age at test: 15:01

Measure	Accuracy	Speed
Standard score	113	91
Confidence interval	103 - 123	81 - 101
Percentile score	81	27
Raw score	32	77 wpm
Age equivalent	> 18:11	12:0 - 12:3

Passage number	1	2	3	4	5	Total
Questions	5	10	10	10	10	45
Attempts	5	10	10	10	2	37
Correct answers	5	10	10	6	1	32
Time (min:sec)	01:06	02:23	02:35	03:02	00:55	10:01

### Spelling

Test date: 30/11/2018 Age at test: 15:01

Measure	Regular words	Irregular words	Overall words
Standard score	98	103	101
Confidence interval	92 - 104	95 - 111	94 - 108
Percentile score	45	58	53
Raw score	24	15	39
Age equivalent	14:0 - 14:11	15:8 - 17:3	15:0 - 15:7

**ADVICE:** Age equivalents are approximate and should only be used where Standard scores or Percentile scores are inappropriate.

Figure 11. Results breakdown for Case C

<b>Name:</b> Pedersen Jason	
<b>Date of birth:</b> 11/10/2003	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Written dictation

Test date: 30/11/2018 Age at test: 15:01

*Words dictated / actual count	172
Speed	24 wpm
Standard score	106
Confidence interval	98 - 114
Percentile score	66
Age equivalent	17:0 - 17:11
*Spelling errors (count)	0
Spelling errors (percent)	0.00

\* Actual figures can be entered manually by the assessor – see the [Testwise help site](#) for details

## Typed dictation

Test date: 30/11/2018 Age at test: 15:01

*Words dictated / actual count	213
Speed	30 wpm
Standard score	115
Confidence interval	108 - 122
Percentile score	84
Age equivalent	> 18:11
*Spelling errors (count)	0
Spelling errors (percent)	0.00

\* Actual figures can be entered manually by the assessor – see the [Testwise help site](#) for details

**ADVICE:** Age equivalents are approximate and should only be used where Standard scores or Percentile scores are inappropriate

## Typed passage

One day last year we saw a lot of bees going in and out of some old hives behind our garage. My friend once sat on a bee and got stung on the bottom, so I was a bit scared of them. But I know a lady that keeps bees, and I asked her if she would take them away. However she thought that I should learn to keep them myself. She told me what I needed and what clothes to buy. There was a special jacket, which included a hat and balaclava, and some thick leather gloves. Then she showed me how the bees build their combs on frames in the hive, and she taught me how to handle them. We used a smoker to puff out smoke which calms them down. Then we lifted off the roof of the hive and looked at the frames where the queen was laying her eggs. When we spotted her, we marked her with a dab of white marker ink on her body. We made certain that she was in the bottom box of frames and put a wire mesh called a queen excluder, on top of that box. This keeps her from laying eggs in the boxes above, where the other bees store honey.

## 4.4 Case D: A 12-year-old with multiple problems

### 4.4.1 Page 1. Results profile

See Figure 13. The bar charts for this student show the wide range and severity of her difficulties. In spite of these difficulties, however, her reading comprehension accuracy is in the normal range, which suggests that she is of normal intellectual ability. Her *extremely low* score for handwriting indicates that she probably has severe dyspraxia/dysgraphia, but that is only part of her difficulties.

### 4.4.2 Page 2. Results breakdown

See Figure 14. It is apparent from her reading comprehension times that she worked slowly but steadily through the passages and was able to answer the majority of the questions in the second and third passages correctly, which confirms that she understood these passages. Nevertheless, her low scores in spelling and word recognition strongly suggest dyslexia, as does the fact that she only managed to spell two irregular words correctly. In the typed passage she (surprisingly) managed to spell 'hives' and 'garage' correctly, but writing 'now' for 'know' and 'how' for 'who' are typically dyslexic errors, as is her tendency not to notice omissions (sung, scard, ask).

Her handwriting speed is very slow (7 wpm, below 50 standard score). Figure 12 shows her actual writing, which is legible – i.e. it is possible to read all the letters – but she makes a number of spelling mistakes. (Note that the student's handwriting attempt may be scanned, stored and displayed on the Exact report – see the Testwise help site for information on how to do this.)

### 4.4.3 Conclusion

This student would probably be eligible for access arrangements when the time comes – see Section 5 for guidance on this. In the meantime, she clearly needs support on all areas of literacy and should be encouraged to become more fluent on a keyboard. If she has not already been assessed for dyslexia, use of LASS would be helpful in this regard (see Section 3.3.1).

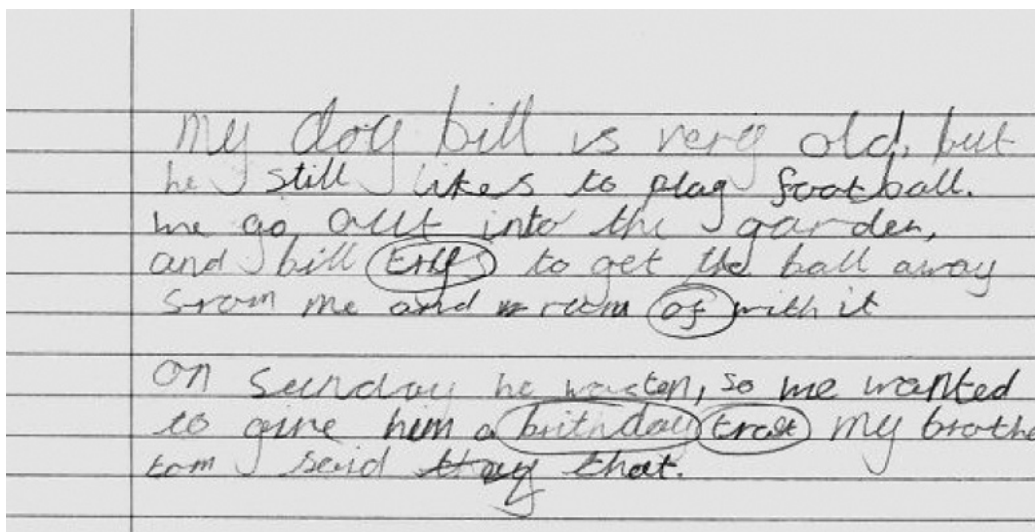
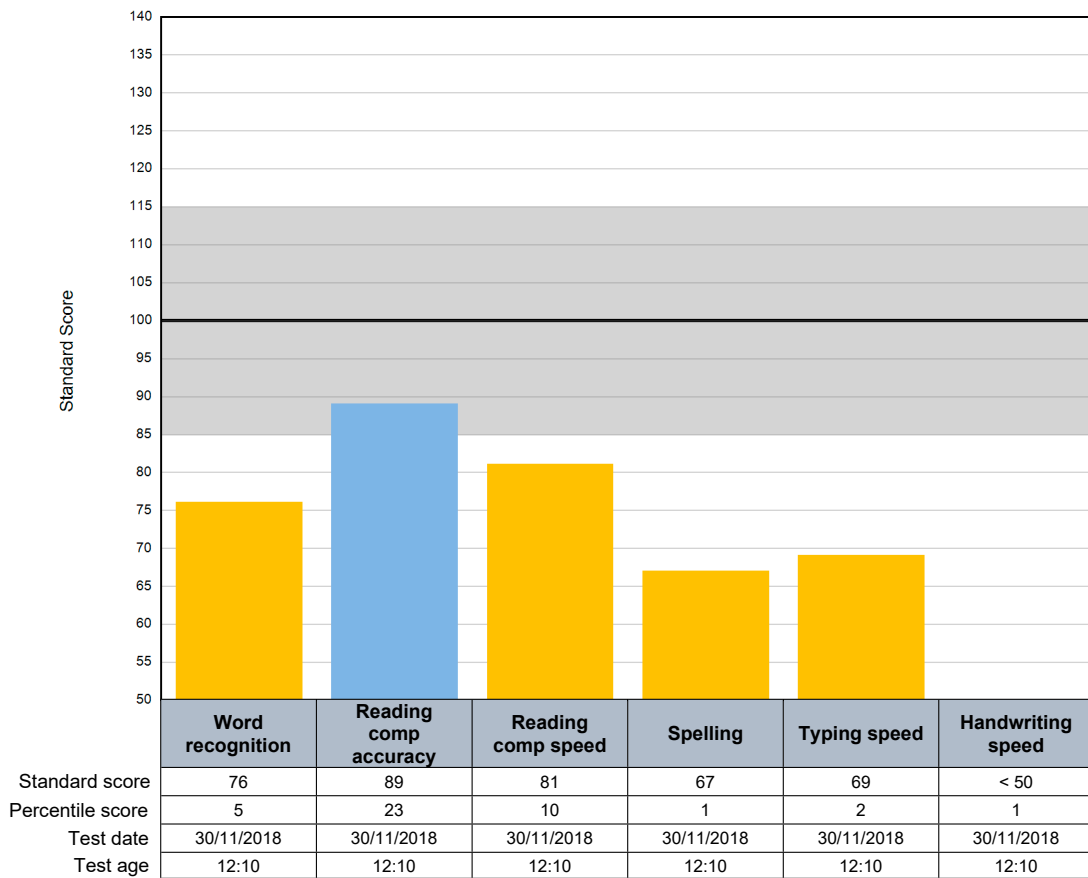


Figure 12. Sample of handwriting by Case D

<b>Name:</b> Fieldhouse Carolyn	
<b>Date of birth:</b> 07/01/2006	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Results profile

Standard score of 85 or higher (blue bar)  
Standard score of 84 or lower (yellow bar)



**Assessor's comments**

Figure 13. Results profile for Case D

<b>Name:</b> Fieldhouse Carolyn	
<b>Date of birth:</b> 07/01/2006	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Results breakdown

### Word recognition

Test date: 30/11/2018 Age at test: 12:10

Measure	Regular words	Irregular words	Overall words
Standard score	73	80	76
Confidence interval	69 - 77	75 - 85	70 - 82
Percentile score	4	9	5
Transformed score	6	7	13
Age equivalent	8:0 - 8:11	9:0 - 9:11	8:8 - 8:11

Total words correct: 39

Total time (min:sec): 03:11

### Reading comprehension

Test date: 30/11/2018 Age at test: 12:10

Measure	Accuracy	Speed
Standard score	89	81
Confidence interval	79 - 99	71 - 91
Percentile score	23	10
Raw score	19	47 wpm
Age equivalent	10:8 - 10:11	9:4 - 9:7

Passage number	1	2	3	4	5	Total
Questions	5	10	10	10	10	45
Attempts	5	10	10	10	3	38
Correct answers	2	6	8	3	0	19
Time (min:sec)	01:20	02:39	02:53	02:03	01:06	10:01

### Spelling

Test date: 30/11/2018 Age at test: 12:10

Measure	Regular words	Irregular words	Overall words
Standard score	67	69	67
Confidence interval	61 - 73	61 - 77	60 - 74
Percentile score	1	2	1
Raw score	12	2	14
Age equivalent	8:0 - 8:3	8:7 - 9:3	8:1 - 8:2

ADVICE: Age equivalents are approximate and should only be used where Standard scores or Percentile scores are inappropriate.

Figure 14. Results breakdown for Case D

<b>Name:</b> Fieldhouse Carolyn	
<b>Date of birth:</b> 07/01/2006	<b>Form:</b> A
<b>Date of test:</b> 30/11/2018	<b>Group:</b> Class1

## Written dictation

Test date: 30/11/2018    Age at test: 12:10

*Words dictated / actual count	53
Speed	7 wpm
Standard score	< 50
Confidence interval	43 - 59
Percentile score	1
Age equivalent	8:0 - 8:3
*Spelling errors (count)	0
Spelling errors (percent)	0.00

\* Actual figures can be entered manually by the assessor – see the [Testwise help site](#) for details

## Typed dictation

Test date: 30/11/2018    Age at test: 12:10

*Words dictated / actual count	63
Speed	9 wpm
Standard score	69
Confidence interval	62 - 76
Percentile score	2
Age equivalent	9:0 - 9:3
*Spelling errors (count)	0
Spelling errors (percent)	0.00

\* Actual figures can be entered manually by the assessor – see the [Testwise help site](#) for details

**ADVICE:** Age equivalents are approximate and should only be used where Standard scores or Percentile scores are inappropriate

## Typed passage

One day last year we saw a lot of bees gong in and out of some old hives behind our garage. My frined once sat on a bee and got sung on the bottom so i was a bit scard of them .But i now a lady how keeps bees,and i ask her if she would take them away.however she thought that i should



# 5 Use of Exact when applying for access arrangements

## 5.1 JCQ regulations

In England, Wales and Northern Ireland, applications for access arrangements for GCSE and GCE examinations are now made online using the Access Arrangements Online (AAO) tool. Centres are required to record assessment information on the Joint Council for Qualifications' Form 8 (available at [www.jcq.org.uk](http://www.jcq.org.uk)).

This section is specifically aimed at helping assessors to complete the sections of this form that are relevant to students with difficulties in reading speed and comprehension, spelling and handwriting. Please also refer to the guidance notes in Section 7 of the JCQ AARA when completing Form 8.

All evidence for use in completing Form 8 must be drawn from assessments conducted no earlier than the start of Year 9, or Year 10 in Northern Ireland (JCQ AARA 2018-19, Section 5.2.2). In order to confer eligibility for access arrangements, the evidence must demonstrate difficulties that have a "substantial and long-term adverse effect" (JCQ AARA 2018-19, Section 5.2.2).

Note that Section 1 (on page 5) of the current JCQ Form 8 cannot be completed using Exact because it does not include an "untimed test of single word reading" as currently required by JCQ (see Section 7.5.10 of the JCQ AARA 2018-19).

## 5.2 Guidelines on using Exact

This subsection provides guidelines for the use of Exact in examination access arrangements in accordance with JCQ AARA Sept-Aug 2019. This document has been reviewed by JCQ, Communicate-ed and Patoss.

### 5.2.1 Purpose

The purpose of these guidelines is to clarify how Exact may be used when assessing students for examination access arrangements, which are governed by regulations set out in the document 'Adjustments for candidates with disabilities and learning difficulties: Access Arrangements and Reasonable Adjustments' published annually by JCQ (hereinafter referred to as 'JCQ AARA').

## 5.2.2 General

1. Exact is a fully computerised, UK nationally standardised suite of literacy tests for the age range 11 years 0 months to 24 years 11 months. It can be used by access arrangements assessors as an integral part of their assessment of students who may require examination access arrangements, and the results from Exact can be entered into Section C of JCQ Form 8.

An access arrangements assessor is a Health Care Professional Council registered educational psychologist or

- a specialist assessor who holds a current Assessment Practising Certificate (APC) as
- awarded by Patoss, Dyslexia Action or BDA (see JCQ AARA 2018/19, Section 7.3.4) or
- a teacher who holds a postgraduate qualification at or equivalent to Level 7 which covers at least 100 hours in individual psychometric assessment. The sections below outline exactly how the results from Exact may be used for this purpose.

2. **No single test on its own is adequate, and Exact must not be viewed as the complete assessment solution; results from other tests are likely to be required.** Candidates needing access arrangements may have difficulties in any one of a number of skills, and assessors will be able to draw on a range of assessment tools in order to confirm such difficulties.
3. Before an assessment, the SENCo must complete Section A of Form 8. The candidate must be assessed in light of the picture of need and background information as detailed within Section A. All test results must be backed up by evidence showing that the access arrangement requested is the student's normal way of working in the classroom, i.e. 'painting the picture' of the student's need for the arrangements (see JCQ AARA 2018/19, Section 5.2.2).
4. Exact may also be used as a screening tool to help identify students who may qualify for access arrangements, and who will require further assessment by an access arrangements assessor. If Exact is used solely as a screening test, the results would be included within Section A of Form 8 (not Section C). Screening may be administered by a suitably qualified access arrangements assessor or by a non-specialist member of staff who is competent in test administration but does not hold an assessor qualification (e.g. a SENCo or trained HLTA (higher level teaching assistant)). If Exact is administered by a non-specialist, the results cannot be entered into Section C of JCQ Form 8. All tests in Section C must be administered by a qualified access arrangements assessor who must sign to say that they carried out those assessments. If Exact has been used as a screening test by a non-specialist, the student may be retested by an Access Arrangements Assessor using the parallel (equivalent) form of Exact – see the Exact Administrator's Manual (accessed from the program and from the GL website).
5. Exact is available for individual use or for multiple users over a network. Exact should be administered in accordance with the instructions given in the Exact Administrator's Manual. As with all tests, it is important to supervise students closely when administering the test, whether screening or carrying out an access arrangements assessment. Those who don't engage fully with the tasks may have questionable results.

### 5.2.3 Extra time in exams

The following results from Exact are appropriate when applying for 25% extra time in examinations.

- Reading comprehension speed (standard score 84 or below) (JCQ AARA 2018/19, Section 5.2.2)
1. The Exact comprehension speed measure is valuable in showing those students (e.g. compensated dyslexics) who can read accurately but slowly. It is one of the few timed tests of reading comprehension speed. The test is easy to administer and, being a computer-based test, it is free from administrator bias or inconsistency. However, some students may attempt the test too quickly by just guessing without giving the questions proper consideration. This, of course, is a potential factor in any multiple-choice test, not only computer-based tests. Before they start the test, the administrator should therefore point out to students that they should make use of all the time allowed and should try to get as many answers right as possible. They are not expected to answer all the questions, and if they complete the test too quickly their score will not be valid.
  2. A standard score of 84 or less in an appropriate test is regarded as the key criterion for most access arrangements. However, the JCQ AARA also allows, in “rare and exceptional” cases, standard scores from at least two different areas of speed of working (e.g. two low average standardised scores relating to speed of reading and speed of reading comprehension would not be acceptable) within the low average range (85-89) to be cited in the case of 25% extra time. There must, of course, be supporting evidence regarding the student’s normal way of working to back up these low average scores (see JCQ AARA 2018/19, Section 5.2.2 for details).

JCQ Form 8 Section 5 requires scores of handwriting speed, and as such the Exact handwriting to dictation can be used as core evidence for extra time where the candidate’s standard score is in the below average range.

### 5.2.4 A reader or computer reader in exams

The following results from Exact are appropriate when applying for a reader or computer reader in examinations.

- Reading comprehension accuracy (standard score 84 or below)
- Reading comprehension speed (standard score 84 or below)

(JCQ AARA 2018/19, Section 5.5).

Both the Exact comprehension accuracy and the comprehension speed measures give useful evidence of a student’s need for a reader or computer reader. This may be backed up by a low score in Exact word recognition and/or an untimed test of single word reading (e.g. WRAT4 or WRAT5 Word Reading, WIAT-IIUK-T or WIAT-IIIUK-T Word Reading). Note, however, that the Exact word recognition test does not meet the JCQ criteria of an untimed test of single word reading. However, its scores correlate well with WRAT4 Word Reading and it is very quick to administer, so it can be a very useful extra tool in ‘painting the picture of need’ and can be commented upon in Section A of Form 8.

## 5.2.5 Writing: Use of a scribe or word processor with spell check enabled or voice recognition technology

The following results from Exact are appropriate when applying to use a scribe, or a word processor with spell check enabled or speech recognition technology in examinations.

- Spelling (standard score 84 or below) which renders the writing illegible (JCQ AARA 2018/19, Section 5.7).

Note that although the *handwriting to dictation test* in Exact is particularly useful in demonstrating students with handwriting difficulties, it cannot be used within Section C as evidence for the use of a scribe, because for this purpose the JCQ AARA specifies the use of a test of free writing (rather than writing to dictation). Nevertheless, students with illegible or very slow handwriting due to dysgraphia/dyspraxia can be apparent from the results of the dictation test in Exact, and their typing speed and accuracy can help to determine whether they might need to use a word processor or have a scribe. If a student is going to use a word processor in examinations, with spell check and word prediction functions disabled, no further evidence is required provided it is the student's normal way of working (see JCQ AARA 2018/19, Section 5.8). However, the *typing to dictation* subtest on Exact can provide useful information on the student's ability to type (both typing speed, expressed in words per minute and a standard score, and accuracy).

A few students handwrite adequately to dictation but write slowly when free writing; this discrepancy is valuable because it shows that their difficulty is not with the mechanics of writing but with 'thinking time' or in some cases uncertainty because of spelling difficulties. These students require further assessment of their processing speeds and spelling, and may require extra time rather than a scribe. However, the Exact dictation test will again have been useful in deciding whether a word processor may be more appropriate than a scribe.

## 5.2.6 Painting the picture of need

All the test results from Exact can be used as part of the evidence to paint the picture of the student's needs within Section A of Form 8 (see JCQ AARA 2018/19, Sections 5.2.2, 7.5.12 and 7.6.1).

## 5.3 Assessment of writing skills

### 5.3.1 Slow handwriting

The writing tests in Exact take the form of timed writing (both handwriting and typing) to dictation. A poor score in the Exact handwriting component is, *ipso facto*, clear evidence of slow writing speed, indicating that the student may be entitled to appropriate access arrangements. A satisfactory score in the Exact typing component is, *ipso facto*, good evidence of adequate typing skills such that the student would be able to use a word processor in examinations if this was thought appropriate and applied for.

A below average handwriting to dictation standard score can be used as evidence for 25% extra time. This might indicate that the physical act of writing is slow for a candidate. The writing to

dictation cannot, however, provide evidence of underlying processing issues when considering what to write, or organising thoughts into coherent writing. For this, an assessment of 'free writing' will be required, and assessors should have such an assessment in their battery of tests and assessments. Unlike free writing, writing to dictation does not require the student to think of the words to write, nor to monitor what is being written to ensure fidelity to the intended meaning. In fact, free writing confounds the two component processes of *thinking* and *writing*.

### 5.3.2 Difficulty in expressing meaning

If the student experiences difficulty in thinking what to say and what words to use to express their meaning, this may be reflected in slow writing. Where a student has problems in generating the words to express their ideas, this will not be measured by the dictation tests in Exact, but could be a valid reason for requesting access arrangements. Therefore, when assessing these students for access arrangements, in addition to using the Exact tests of handwriting and typing to dictation, it is recommended that a free writing task be employed (for further information on assessing free writing, consult the Patoss website: [www.patoss-dyslexia.org](http://www.patoss-dyslexia.org) or the Patoss guide *Assessing the need for Access Arrangements during Examinations: A Practical Guide*).

## 5.4 Difficulties with reading

### 5.4.1 Case E: Application for a reader or computer reader

Student E is dyslexic and reads slowly. He is also inaccurate because he misreads so many words. Section C, Parts 2 and 3 (of Form 8) are appropriate to this student as his normal way of working is with the help of a reader, and his standard scores for both reading comprehension speed and reading comprehension accuracy are less than 85 (see Figure 15). JCQ AARA (Section 5.5) also permits the use of a computer reader in such circumstances.

**2. Reading comprehension - This can provide assessment evidence for a computer reader/reader.**

Does the candidate comprehend continuous text or sentences at a level which is below average? (i.e. at least 1 standard deviation below the mean on a nationally standardised test, **a standardised score of 84 or less**)

YES     NO

**Give the candidate's result on a test of reading comprehension of text or sentences.**

<b>Name of test</b>	Exact – Comprehension (Accuracy)
<b>Test ceiling</b>	24 years 11 months
<b>Date of administration</b>	04/09/18
<b>Standardised score</b>	75

5

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**3. Reading speed (continuous text) - This can provide assessment evidence for a computer reader/reader and/or extra time.**

Does the candidate read continuous text at a speed which is **below average?** (i.e. at least 1 standard deviation below the mean on a nationally standardised test, **a standardised score of 84 or less**)

YES     NO

**Give the candidate's result on a test of reading speed of continuous text.**  
Measures of reading speed can include reading rate and reading fluency. Assessors should refer to **section 7.5.10** of the JCQ publication *Access Arrangements and Reasonable Adjustments*.

<b>Name of test</b>	Exact – Comprehension (Speed)
<b>Test ceiling</b>	24 years 11 months
<b>Date of administration</b>	04/09/18
<b>Standardised score</b>	82

Figure 15. Student E – JCQ Form 8, Reading Speed and Accuracy

### 5.4.2 Case F: Application for extra time

Student F is dyslexic but can read accurately given enough time. Although her reading accuracy score is above 85 (Exact – comprehension (accuracy) SS = 87), her reading comprehension speed is less than 85. Technically she could qualify for the help of a reader with a comprehension speed score below 85, but this is not her normal way of working and she prefers to be allowed extra time and read by herself. See Figure 16.

**3. Reading speed (continuous text) - This can provide assessment evidence for a computer reader/reader and/or extra time.**

Does the candidate read continuous text at a speed which is **below average?** (i.e. at least 1 standard deviation below the mean on a nationally standardised test, **a standardised score of 84 or less**)

**YES**  **NO**

**Give the candidate's result on a test of reading speed of continuous text.**  
 Measures of reading speed can include reading rate and reading fluency. Assessors should refer to **section 7.5.10** of the JCQ publication *Access Arrangements and Reasonable Adjustments*.

<b>Name of test</b>	Exact – Comprehension (Speed)
<b>Test ceiling</b>	24 years 11 months
<b>Date of administration</b>	10/10/18
<b>Standardised score</b>	73

Figure 16. Student F – JCQ Form 8, Reading Speed

## 5.5 Difficulty with spelling

### 5.5.1 Case G: Application to use a scribe or word processor with spell check/predictive text enabled

Student G has problems with spelling. Not only is his standard score for spelling below 85 but a significant number of words are difficult to read because they are misspelt (see Figure 17). The Exact spelling test gives his spelling standard score, but to obtain the percentage of unreadable words it is easier to look at his handwriting to dictation in Exact.

The handwriting is poor, bordering on illegible in places. However, it is possible to read most of the letters and it is the poor spelling that makes this writing particularly difficult to read.

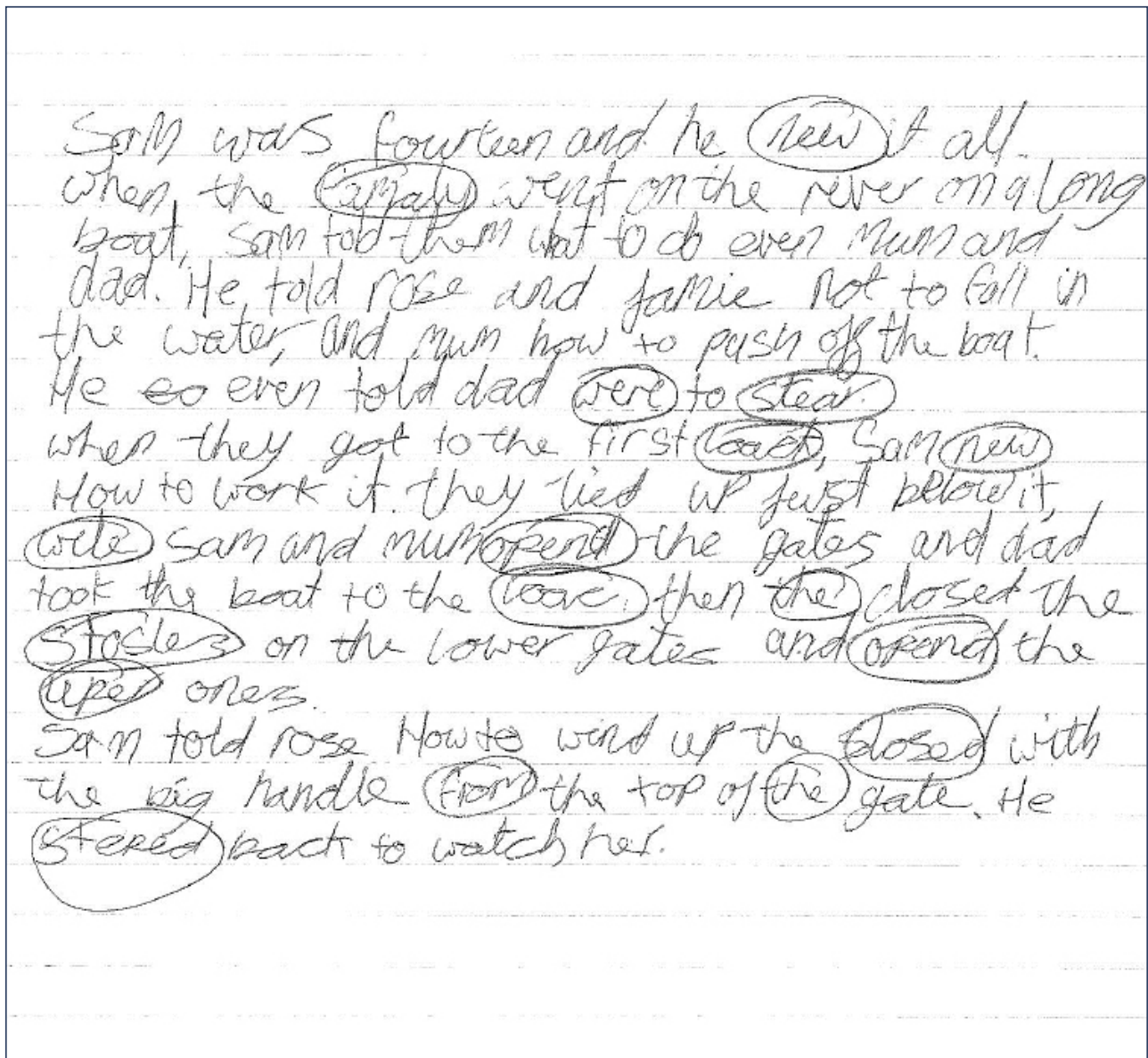


Figure 17. Student G - Handwriting difficult to read because of spelling errors

## 5.6 Dysgraphia

### 5.6.1 Case H: Illegible handwriting - application to use a word processor

In this case the handwriting is difficult to read because of the illegibility of the writing rather than the number of spelling errors - see Figure 18. This boy wrote 127 words in 7 minutes, which gave him a writing speed of 18 wpm (standard score 88 for his age of 13 years 10 months), which is in the low average range. His typing speed was 21 words per minute (standard score 97), which confirms competence on a keyboard.

In this case, JCQ AARA (Section 7.5.11) permit the candidate to take examinations using a word processor *with the spell check and/or predictive text disabled*.



My dog Bill is vey old. but he still likes  
 to play soccer. We go out into the garden,  
 and bill tries to get the ball away from  
 me and run off with it.  
 On Sunday he was 10. so we wanted to  
 give him a birthday treat my brother  
 Tom said that we should leave him  
 out in the front garden, where  
 he could bite the postman. However my  
 mum said that it was a really stupid suggestion  
 as bill was in trouble to have a ready from  
 chasing the rabbits out.  
 in the end we decided to take him  
 to the park which he always enjoys  
~~because~~ coz he can chase the pigs and  
 play with other dogs.  
 on that day, there was this really bad  
 pooch.

Figure 18. Student H - Illegible handwriting

### 5.6.2 Case I: Slow but legible writing - application to use a scribe

Student I writes legibly but very slowly (see Figure 19. Student I - Slow but legible handwriting). His handwriting speed to dictation is only 15.7 words per minute, which, for a student aged 15 years 11 months, gives a standard score of 68. As this student is not proficient in the use of a word processor, after consultation with the student and his teachers it was agreed that it would be appropriate to request the use of a scribe as access arrangements - see Figure 20 and Figure 21.

My dog Bill is very old, but he still likes to play football. We go out into the garden and Bill tries to get the ball away from me and run off with it.

On Sunday he was ten, so wanted to give him a birthday treat. My brother ~~Tom~~ Tom said that we should leave him out in the front garden, where he could bite the post man. However, my mum said that it was a really stupid suggestion, as Bill was in enough trouble all ready from chasing the ~~sext~~ ~~seibors~~ neighbours cat.

In the end we decided to take him to the park which he always enjoys it

110 words in 7mins = 15.7 wpm

Figure 19. Student I - Slow but legible handwriting

**5. Handwriting - This can provide assessment evidence for a scribe and/or extra time.**

Is the candidate's free writing grammatically incomprehensible to someone who is not familiar with it? YES  NO X

Does the candidate's handwriting render his or her free writing largely illegible to someone who is not familiar with it? YES  NO X

Is the candidate's handwriting speed in the **below average range?** (i.e. at least 1 standard deviation below the mean on a nationally standardised test, a **standardised score of 84 or less**) YES X NO

**Give the candidate's result on a test or subtest of handwriting.**

Name of test	DASH & Exact
Name of subtest	DASH Free writing & Exact - Dictation
Test ceiling	16 years 11 months (DASH) / 24 years 11 months (Exact)
Date of administration	07/11/18
Handwriting speed standardised score	78 (DASH); see over for Exact scores
Quality of language when free writing	Average

Figure 20. Student I - JCQ Form 8, Writing skills

**Other relevant information**

For candidates requiring **extra time of up to 50%** (26% to 50% extra time) **two** very substantially below average standardised scores relating to **two different areas of speed of working** are required – two standardised scores of 69 or less.

A standardised score of 69 or less is 2 standard deviations below the mean on a nationally standardised test. (Please see **section 5.3** of the JCQ publication *Access Arrangements and Reasonable Adjustments*.)

For candidates requiring **an Oral Language Modifier** a standardised score of 69 or less is required in relation to reading comprehension and/or vocabulary.

A standardised score of 69 or less is 2 standard deviations below the mean on a nationally standardised test. (Please see **section 5.11** of the JCQ publication *Access Arrangements and Reasonable Adjustments*.)

**Section C, Part 5: Handwriting**

**Exact dictation scores:**  
**Handwriting speed to dictation = 15.7wpm (SS = 68)**  
**Typing speed to dictation = 15wpm (SS = 73)**

Figure 21. Student I – JCQ Form 8, Other relevant information

# 6 Appendices

## 6.1 Typed dictation texts for FORM A

### FORM A – Typed text

#### Bee-keeping

One day last year we saw a lot of bees going in and out of some old boxes behind our garage.

My friend once sat on a bee and got stung on the bottom, so I was a bit scared of them. But I know a lady who keeps bees, and I asked her if she would take them away. However she thought that I should learn to keep them myself.

She told me what I needed and what clothes to buy. There was a special jacket, which included a hat and veil, and some thick leather gloves. Then she showed how the bees build their comb on frames in the hive, and she taught me how to handle them.

We used a smoker to puff out smoke which calms them down. Then we lifted off the roof of the hive and looked at the frames where the queen was laying her eggs. When we spotted her, we marked her with a dab of white marker ink on her body. We made certain that she was in the bottom box of frames and put a wire mesh called a queen excluder, on top of that box. This keeps her from laying eggs in the boxes above, where the other bees store honey.

[212 words]

### FORM A – Handwritten text

#### My Dog, Bill

My dog Bill is very old, but he still likes to play football. We go out into the garden, and Bill tries to get the ball away from me and run off with it.

On Sunday he was 10, so we wanted to give him a birthday treat. My brother Tom said that we should leave him out in the front garden, where he could bite the postman. However, my mum said that it was a really stupid suggestion, as Bill was in enough trouble already from chasing the neighbour's cat.

In the end we decided to take him to the park which he always enjoys because he can chase the pigeons and play with other dogs.

On that day, there was this really posh poodle dressed up in a tartan jacket. You could see that Bill thought she was terrific. He couldn't take his eyes off her and he kept bouncing around in front of her as if he was a puppy.

She was having absolutely nothing to do with him and walked away with her nose in the air. Poor Bill. To make up for his disappointment, we bought him one of those artificial bones that dogs love to chew.

[201 words]

## 6.2 Typed dictation texts for FORM B

### FORM B – Typed text

#### Biking

My name is Ben and I live in the country. If I want to see my mate Joe, I have to ride my bike, because he lives 2 miles away on a farm.

They have a quad bike there for looking after the sheep, and we are allowed to ride it all round the place. We have made a track over a hill, through a wood and down the side of a field to the farmyard. At the end, there is this really sharp bend between a combine harvester and a derelict tractor, where it is very bumpy and I usually fall off.

Yesterday I completed the course in 4 minutes 20 seconds, which is a record. I almost fell off at the last corner, but I managed to hold on to the handlebars, run beside the bike for a few paces and jump on again. It was like you see the bobsleigh teams do on TV.

Normally if you let go of the throttle, the bike just stops. However last week when Joe came off, it jammed open and the bike went at full speed into some hay bales. Luckily it wasn't damaged and we didn't let on to his dad what had happened.

[206 words]

### FORM B – Handwritten text

#### The Lock

Sam was 14 and he knew it all.

When the family went on the river in a long boat, Sam told them what to do, even Mum and Dad. He told Rose and Jamie not to fall in the water, and Mum how to push off the boat. He even told Dad where to steer.

When they got to the first lock, Sam knew how to work it. They tied up just below it, while Sam and Mum opened the gates and Dad took the boat into the lock. Then they closed the sluices on the lower gates and opened the upper ones.

Sam showed Rose how to wind up the sluices with the big handle on the top of each gate. He stepped back to watch her and lost his balance on the narrow footway, falling backwards into the lock with a tremendous splash. Dad fished him out with the boat hook. He was filthy, wet and furious, but everyone else just laughed including the lock keeper, and people from two cruisers.

[190 words]