
SECTION 5 CURRICULUM MATERIALS REQUIRED

Objective 5: To identify the range and quantify the amount of curriculum materials that need to be accessed by pupils with additional support needs.

Outcome: Have an understanding of the scope of the problem in terms of range and quantity of curriculum and other materials that may need to be made accessible.

Summary

- 1) Pupils across primary and secondary school age require a range of curriculum materials including reading books, textbooks, fiction, workbooks, commercial worksheets, teacher produced worksheets, SQA 5-14 and NAB assessments, and examination question and past papers.
- 2) The specific materials identified by both a visual impairment service and an individual secondary school were generally consistent. Materials used or that were popular with one school are likely to be used by other schools.
- 3) VI transcription services were in a position to report on and document books and other materials that they had converted into alternative media. The secondary school we approached was able to indicate in advance what materials they would need to produce.
- 4) A pupil who is visually impaired will require the equivalent of around 375 books through primary school and a similar number in secondary.
- 5) Quality and design of some printed learning resources is a significant issue. The factors making it difficult for some pupils who are visually impaired to access worksheets (faded print, multi-generation copying, inappropriate text size and style, image quality, inadequate line spacing) also make it difficult for others to access these materials.
- 6) The skills needed by teachers to produce materials of moderately acceptable quality require development and training.
- 7) Pupils would benefit from having materials available in accessible formats. Evidence points to a substantial need for materials to be made available in alternative formats. Many resources need to be interactive: e.g. worksheets, textbook questions, assessments and examination papers.
- 8) A common request was for materials in simplified language.

Background to Section 5

We needed to identify what kinds of curriculum materials may need to be adapted and converted into accessible formats. It is not enough to know what kinds of support needs might be assisted by having access to materials if we don't know which materials will be accessed. Best value decisions would be informed by knowing which materials should be made accessible.

Methods used

To address this objective we again approached it from a number of different perspectives in order to triangulate information. We:

1. Approached a small number of schools to establish the range of materials used across the curriculum in both primary and secondary schools. Asking schools what curriculum materials they used would help to establish the likely demand for materials.
2. Contacted a small number of service providers who respond to requests from schools, or who proactively establish the need for curriculum materials to be produced in alternative formats.
3. Contacted Scottish Qualifications Authority to find out which of their materials needed to be converted into alternative formats and how many.
4. Based on the results of 1), 2) and 3) we sent out questionnaires to a small number of schools asking them to estimate the likely uptake of curriculum materials available in different formats.

Approach to schools

Rationale

We asked a small number of schools in both primary and secondary sectors what range of curriculum materials a typical pupil needed to access. We considered this as a simple pilot exercise which we could then use to obtain more in-depth information from the other sources described in the above list. We made informal approaches to a small number of schools, and asked delegates attending courses and conferences. The following initial information on curriculum materials needed was obtained:

- Books i.e. books used to teach; reading and fiction books;
- Worksheets with no electronic source i.e. handwritten though these are now increasingly rare;
- Material to be copied from the blackboard/whiteboard;
- Assessments and tests;
- SQA materials (Access, Standard Grade; Intermediate, Higher; Advanced Higher);
- Past exam papers and prelims.

Secondary school S1

We then followed this pilot up and asked one secondary school to list the materials they considered would be needed by a pupil entering into S1. This pupil had a physical disability and needed to have materials made available electronically as he could not hold books or turn pages.

The school was able to say what the pupil would need though none of the materials was as yet available in a format that would have suited his support needs. Table 5.1 shows the results. The school was unable to quantify the materials needed as they were only just embarking on this process at the time of our approach and had no similar models to call on. Note that the list applies only to S1.

Materials required
Text book, worksheets and others
English - Various novels; school devised worksheets from novel
Maths - SMP interact book 1 and T1 and T2. Omega mental arithmetic books; worksheets associated with workbooks
Geography - Basics Foundations, Interactions, Connections – Nelson Thorne; school made worksheets
Modern Studies - Power to the people; school worksheets
History - The Romans, Heinemann Foundation, 20th Century World, Scotland in the early modern age – Pulse; school worksheets
Text books for dipping in and out of
ICT
Booklets made up by school from commercially produced materials as well as own worksheets
Home Economics - work booklets made up by school available electronically
Science - Starting Science books 1 and 2; Worksheets which accompany text book and also school worksheets
Religious Moral Education - worksheets commercial and school made
Music - some school made worksheets
French - Metro 1; associated worksheets and school worksheets

Table 5.1: Books and other materials required by secondary school

Special school

One special school contacted noted that even though many of their pupils cannot 'read text' they still enjoy using reading books. Talking books are made on computer which the pupils can access using switches or a mouse. The school would welcome more materials, especially age-appropriate books that use simplified language. The school observed that it is very difficult to obtain materials that are age appropriate for senior pupils that suit their level of understanding. One teacher noted the need for materials with content suitable for 11-12 year olds but demanding an ability range of 18 months to 3 years. Other teachers noted similar ability requirements with content changed to suit other age groups.

It could be argued that publishers rather than schools or other service providers should respond to a demand for age-appropriate but simplified materials. At the same time, it is worth noting that because the school has to spend so much time

converting existing materials to suitable formats, they have less time to create new materials at suitable reading levels.

The school required curriculum materials in accessible formats covering:

- independence skills;
- life skills;
- worksheets;
- lots of books with real photos and short simple sentences that the computer can read;
- simple stories 'symbolised' e.g. 'We're going on a bear hunt...';
- Oxford Reading Tree books in 'signed' format i.e. not full British Sign Language.

"Children with c.l.d. [complex learning difficulties] are often excluded from literacy experiences when a few simple modifications to books could help support parents in sharing books with their children. Also emphasising enjoyment of sharing books as a real literacy experience and finding ways to support parents of children with c.l.d. in these experiences is vital."

Teacher in special school

Evidence from service providers

It is helpful to know what service providers think the demands will be from the schools for which they produce curriculum materials in alternative formats. We were aware though that responses were likely to be very different from service providers with an established role to provide materials in accessible formats, as opposed to a provider who had perhaps not yet considered this in any strategic way. If nothing else the former is more likely to have set up a system to track demand and supply and to have documented that demand and supply.

Visual impairment service 1

Sorenson is reported (RNIB Scotland, 2005) to have ascertained the following requirements for an average pupil going through primary school followed by 6 years of study at secondary school.

"An average pupil will require approximately 375 texts to complete primary education. This is based on 7 years of primary schooling with each pupil requiring core texts for Language and Communication, Numeracy, Environmental Studies etc plus additional required reading material for each subject per year. For example, a primary 3 pupil requires 3 Maths books, 19 English books, 11 Topic books and a dictionary. In Primary 5, the pupil requires 3 Maths books, 13 English books, 60 Worksheets (equivalent to 3 English books), and 15 Topic books. The average pupil also has access to a school library as well as his/her local library for leisure reading, a facility which is very rarely available to visually impaired pupils and never available to a blind pupil who would have to rely on texts provided by support staff, RNIB or the National Library for the Blind."

“At secondary school level, an average pupil will require over 750 texts to complete 6 years of study.”

Table 5.2 presents the breadth and depth of curriculum materials required.

Books required for seven years of primary schooling		Books required for six years of secondary schooling	
Primary 1		Advanced Higher English	28
9 Maths books	9	Advanced Higher French	18
7 Topic books	7	Advanced Higher German	68
5 Reading books each with 15 associated smaller books	80	Higher Maths	17
Primary 2		Higher History	94
9 maths books	9	Higher RMPS	88
8 English books	8	Standard Grade Biology	21
21 Topic books	21	Standard Grade Music	11
Primary 3		S1/2 Science	17
3 Maths books	3	S1/2 R.E.	4
19 English books	19	S1/2 Geography	13
11 Topic books	11	S1/2 Modern Studies	25
1 dictionary	1	S1/2 Home Economics	4
Primary 4		S1 – 6 PSD	41
4 Maths books	4		
PCM booklets	46		
PCM booklets	96		
1 Nelson Spelling	1		
1 Topic books	1		
1 dictionary	1		
Primary 5			
3 Maths books	3		
12 English books	12		
50 – 60 grammar worksheets	60		
1 Nelson Spelling	1		
1 Password	1		
15 Topic books	15		
Primary 6			
4 Maths books	4		
15 English books	15		
1 Nelson Spelling	1		
9 Topic books	9		
1 dictionary	1		
Primary 7			
4 Maths books	4		
16 English Books	16		
1 Topic books	1		
1 dictionary	1		
Total Primary	461	Total Secondary	449

Table 5.2: Books documented by visual impairment service

Although it appears that almost 500 separate texts are prepared for the primary sector Sorenson helpfully notes that 60 worksheets compare to 3 English books. Other similar comparisons have been made to arrive at a figure of around 375 texts needed to complete seven years of primary schooling.

Visual impairment service 2

A second visual impairment service also helpfully provided a breakdown of the curriculum materials produced by their service. Rather than including here the detailed breakdown provided to us for this report we summarise the figures below:

- 460 reading books, subject textbooks or fiction books in large print;
- 180 plus reading books, subject textbooks or fiction books in Braille.

Secondary school: example of service delivery issues

In this section, up to this point we have attempted to quantify the range and number of materials that need to be made accessible. It is also important that the quality of material produced is not compromised, as shown in an audit carried out by one secondary school learning support department.

In this case a learning support department looked at the sorts of difficulties experienced by pupils using text materials. Specifically they looked at the production of worksheet material.

Departments were asked to provide examples of worksheets and booklets used in years S1 – S6. The audit looked at several factors that would affect the quality of booklets and worksheets, including: quality of presentation, size and style of text, use of italicised text, reading age, quantity of text, and line spacing, amongst other factors. Some of the findings are reported in Table 5.3.

This example does not assess production of materials in alternative formats. What it does is to flag up three areas of concern, each to do with product quality.

First, the current practice of producing materials in standard formats may particularly disadvantage pupils with additional support needs.

Second, if materials are to be produced in alternative formats, then steps need to be taken to monitor quality. There is no point in increasing production if quality of material is sacrificed at the expense of increased production.

The third point raised by this small study is that the skills required to produce good quality materials are not necessarily learned at the same time as word processing. An element of training is required even for something as apparently straightforward as producing a worksheet.

Audit issues	Findings
Quality of presentation of worksheets.	Many worksheets were very old – some over 10 years, poorly photocopied. The text did not always allow for clear reading. Computer prepared worksheets in the past 3 years are clearer.
Size and style of text.	Teachers need to know how to use text for the best effect and also which text is most suitable for dyslexic learners. Majority of worksheets (over 90%) used unsuitable text styles. Several worksheets designed more recently used “WordArt” which was often inappropriate. Handwritten worksheets were often not possible to read, especially after several generations of photocopying.
Italic text	Some used italics a great deal. This is harder to read.
Age readability of text	Both in worksheet and text books paragraphs of text often required a reading age higher than that of pupil’s ability.
Amount of text on a page.	Most worksheets used too much text on one page. Pupils with eye fixation problems have difficulty focusing on such pages.
Line spacing	Often too close together
Quality of images.	Poor – in over 90% of worksheets. Either not appropriate for the text or of poor quality.
Quality of reprographics.	Poor in over 90% of worksheets. Constant photocopying of low quality images resulted in low quality worksheets.
Additional comments	Teachers were conscious that worksheets could be improved but were unclear how to do this effectively in order to produce differentiated material and no time to rewrite old worksheets.

(Rinaldi, F., 2004; personal communication)

Table 5.3 Factors affecting quality of worksheets used in one secondary school

SQA examinations and assessment materials

5-14 National Assessments

“National Assessments are assessment materials designed to be used by teachers in Scottish schools to confirm their judgments about pupils’ levels of attainment in English language (reading and writing) and mathematics 5-14.”¹⁷

National assessments are provided for the six levels (A to F) for English language and mathematics. There are two assessment units for Reading, and three for Writing, giving a total of 30 assessments for English language across all levels.

In Mathematics, a National Assessment at any level comprises two units, resulting in 12 units from Levels A to F.

A pupil who achieves all six 5-14 levels will therefore require 7 assessments at each level, or 42 units in total for all six levels.

¹⁷ General introduction to National Assessments 5-14, http://www.aifl-na.net/na/general_intro.aspx

Access 1 & 2

“Access 1 and 2 qualifications are all about providing opportunities for candidates who require additional support for their learning.”¹⁸ There are 100 National Units at Access 1 and 145 Units at Access 2 level, with 22 Clusters at Access 2 (3 Units per Cluster). Each Unit is designed to be completed in 40 hours of study.

Assessment of candidates against a Unit Performance Criteria is undertaken by the teacher or lecturer. The instrument of assessment used may be the exemplar given by SQA in the Unit specification, or the assessor may devise their own.

Many different personal and practical skills are assessed in Access 1 and 2 units and so the methods of assessment also vary. Consequently it is not possible to quantify the number or nature of assessments required by students in any meaningful way. However, it is clear that students taking Access courses will require to complete assessments and that accessible versions will be required.

National Assessment Bank (NAB) Assessments

Assessment for an SQA National course usually consists of three internal assessments (conducted and marked by the school) together with an external assessment (e.g. an Intermediate or Standard Grade examination). Internal Assessments are carried out using National Assessment Bank ‘Instruments of Assessment’ (NABs). A pupil taking 8 Standard Grade courses, for example, would therefore require to access 24 instruments of assessment over the usual two years of the Standard Grade course.

External assessments (Standard Grade, Intermediate, Highers, Advanced Highers)

External assessments are conducted by means of a traditional question paper, or by practical test. The number of papers varies depending on the subject and the level: a student sitting Standard Grade English, for example, might require 5 papers (Reading Text and Reading Questions at Foundation and General, say, and the Writing paper), while Higher History will require 2 papers.

By way of example, a student sitting 8 Standard Grade examinations in English, Maths, History, Physics, Chemistry, French, Craft and Design and Computing is likely to use 23 separate question papers (and additional answer booklets). A student sitting Higher examinations in English, Maths, Physics, History and Computing, say, will require 8 question papers and 8 additional answer booklets.

Assessments and tests to be accessed

A pupil who attends school from Primary 1 to 6th year of secondary may therefore require to access 116 tests and assessments:

- 42 5-14 assessments;
- 24 NABs;
- Approximately 50 examination question papers and answer books.

¹⁸ About Access 1 and 2 qualifications, <http://www.sqa.org.uk/sqa/3530.501.html>

Questionnaires

Based on the results of approaches in 1, 2 and 3 we included questions in both the short and long versions of questionnaires described in earlier sections of the report (blank questionnaires are included in Appendix 2 and 3):

- an open question that asked: “Are there any specific textbooks or other resources that you would want in an accessible format?”
- a closed question in table format which asked respondents to say whether the following were needed: Text books, Reading books, Commercial worksheets, Teacher produced worksheets, Exam papers / prelims, Assessments: 5-14 Assessments: NABs, Other (please specify)

Results from short questionnaire

Forty-three responses were received from a variety of teachers, learning support teachers, teachers of visually impaired pupils and others. All of the respondents reported that pupils they worked with would benefit from materials available in accessible formats; half noted that in their view more than 20 pupils they worked with would benefit from alternative format resources.

Respondents were invited to indicate approximately how many materials would be required, including textbooks, fiction / reading books and others. Collectively the 44 respondents noted the need for the type of materials and quantities shown in Table 5.4

Type of materials required	No.
Textbooks	160
Fiction/Reading Books	150+
Teacher Worksheets	1000
Commercial Worksheets	370
Assessments (eg. NABs)	155
Exams	>50

Table 5.4: Quantities of various types of materials required

Additional comments included:

- “too difficult to predict numbers required”;
- “for national tests there were too many to specify”;
- “much would depend on the subject areas in which the pupil was involved”.

The approach of asking teachers to tell us how many books and other materials were needed could not tell us anything about the particular materials that were needed. We therefore asked teachers to specify which particular textbooks and other materials they would require if it were possible for them to do so. A range of suggestions was offered. Rather than reporting on each response we have grouped examples into subject areas as shown in Table 5.5

Specific materials required:	
Early Reading: Oxford Reading Tree stages 5-8. Ginn 360 Nelson spelling & grammar	Science: Spotlight on Science and others
Reading: Novels and reference materials	Maths: Scottish Heinemann Maths, Maths in Action in enlarged print on coloured paper. PIPS tests in large print format. Money and time worksheets
History, Geography, Modern Studies: Course material in first and second year History, Geography and anything on Scottish Modern History (1800-2006). Topic work e.g. Tudors, Romans, Vikings etc	Study guides / prelim and practice papers, NABS particularly.
All subjects in secondary school	"All" and "Too many to mention" were often quoted.

Table 5.5: Table showing materials required for various Subject areas

Two respondents noted that in order to acquire good SQA qualifications pupils have to be able to read and understand large quantities of text. If they have difficulty reading they have difficulty with accessing almost all areas of the curriculum.

One noted that getting access to materials is too often subject and teacher dependent. Another reported that getting prelim and practice papers in digital format is problematic. One teacher noted that with increasing numbers of pupils from other countries, particularly from Poland, there was a need for translations for Polish pupils to use while learning English. Finally, one respondent noted that there was a need for adult interest level material with a reading age of 10-12 years.

Comparing the table above with Table 5.2 (the list of materials from a visual impairment service), substantial overlap can be seen. At least some of the materials produced in alternative formats for one group of pupils (those who are visually impaired) are also required by other pupils who for the most part are not visually impaired. This is not too surprising as pupils follow a similar curriculum under 5-14.

Sample results from long questionnaires

As the longer form questionnaires were designed to provide no more than a snapshot or overview of the situation in schools it is not appropriate to subject returns to statistical analysis. Instead we will return to the results from one authority which reported on two primary schools and two secondary schools. Responses noted that all of the materials listed earlier were required plus a few others:

- Reading books; i.e. books used around which to teach reading and comprehension.

- Textbooks in a variety of subject areas. Also on specific topics covered by primary; e.g. Victorians, World War II, History, Science topics (e.g. produced by Renfrewshire).
- Fiction books or novels (especially high interest ones and class novels).
- Workbooks; e.g. Oxford Reading Tree materials based on the reading books with resources for, for example, matching pictures to words. Or Heinemann Maths activities and resources.
- Commercial worksheets similar to workbooks used to develop skills.
- Worksheets with no electronic source; i.e. handwritten though these are now increasingly rare.
- Tests both class and national (NABs).
- SQA materials (Standard Grade Foundation, General and Credit; Higher; Advanced Higher).
- Study notes and past papers for exams (SQA & Leckie & Leckie).
- Personal Social Development especially on citizenship.
- Access, Standard Grade, Intermediate, Higher and Advanced Higher.
- Magazines.
- Homework.
- Web information.

A few comments from the respondents are noted in the accompanying insert.

Are there any specific textbooks or resources that you would want in an accessible format?
<p>“This list is endless.”</p> <p>“Interactive would be <u>so</u> useful.” – [as well as pupils needing to access the curriculum they also need to be able to demonstrate their knowledge and understanding.]</p> <p>“Infinite”</p> <p>“All materials in schools should be available aurally and digitally for access by all pupils. Even more able pupils could benefit from such materials.”</p>

Table 5.6: Comments from respondents in one local authority

