



# **SQA Digital Question Papers 2011 Report**

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## 2011 Assessment Arrangements

In 2011, SQA received 53,703 requests for Assessment Arrangement (AA) on behalf of 15,412 candidates (Table 1). Requests were made on behalf of 9.75% of the total number of candidates (158,032), and for 7.32% of the total number of examination entries (733,696). The number of candidates and number of entries where AA are being requested continues to increase, and the percentage of the total number of candidates and entries is also increasing; requests are being made for more candidates and for more entries. Almost one in ten candidates sitting SQA examinations required an assessment arrangement in 2011.

**Table 1: Number of candidates and requests for AA, 2007 – 2010**

Year	Number of Candidates requesting AA	% of candidates requesting AA	Number of AA requests / entries	% of entries with AA
2007	11,400		42,194	
2008	12,284	7.2%	44,356	5.9%
2009	13,041	8%	45,612	6.2%
2010	13,962	8%	48,416	6.5%
2011	15,412	9.75%	53,705	7.32%

Each Assessment Arrangement request is made for a specific examination entry. An entry involves a candidate sitting two or sometimes three separate papers; for example Standard Grade English consists of two Reading Papers (Foundation and General, or General and Credit) and a Writing Paper, while Higher Chemistry, for example, comprises Paper 1 and Paper 2.

Requests for Assessment Arrangements are made by the school or centre according to the nature of the candidate's difficulty, and the requirements of the assessment: a candidate may therefore request different types of support in different examinations. For example, a student might use a digital question paper for a paper requiring short answers – Intermediate 1 Computing, for example, but a scribe for a paper requiring an extended response, such as the Intermediate 1 English Critical Essay.

Most requests are for more than one type of support, and so the 53,703 requests made in 2011 can be broken down into 129,599 individual requests (Table 2). Most requests are for Extra Time together with another type of support, such as Reader, Scribe, use of ICT, or an adapted paper.

Leaving aside Extra Time and Separate Accommodation, Table 2 shows that the most common type of support requested are still reader and scribe, although the use of ICT and digital papers is continuing to become more popular.

Table 2 gives the percentage change between 2010 and 2011 for each type of support. The total number of arrangements requested increased by 10.7% between 2010 and 2011, and arrangements that saw an increase greater than this figure (i.e. arrangements where the increase was greater than the overall rise) are identified in bold. We can see that requests for ICT, digital papers, coloured paper, transcription and modified content increased as a proportion of the total between 2010 and 2011. This continues the trend since 2008: the mean increase each year since 2008 for digital paper requests is 80%; the mean increase for requests coloured paper is 23%; mean increase for ICT including digital papers is 25% while mean annual rise for use of ICT excluding digital papers is 14%.

**Table 2: Type of Assessment Arrangements requested**

Assessment Arrangement	Number of Requests, 2008	Number of Requests, 2009	Number of Requests, 2010	Number of requests, 2011	% change 2010 to 2011
Extra Time	34,530	35,636	36,962	40,800	10.4%
Separate Accommodation	25,793	26,381	28,689	31,950	<b>11.4%</b>
Reader	16,936	16,554	16,863	18,032	6.9%
Scribe	14,811	14,197	14,313	14,962	4.5%
Use of ICT (inc digital papers)	4,741	6,253	7,622	9,135	<b>19.9%</b>
Digital Question Papers	514	1,167	2,000	2,832	<b>42.1%</b>
Coloured Paper	1,523	2,050	1,964	2,713	<b>38.1%</b>
Prompter / Practical Helper	1,879	2,099	2,404	2,622	9.1%
Rest Period	1,517	1,434	1,636	1,664	1.7%
Enlarged or Adapted Print Question Papers	1056	1,305	1,209	1,305	7.9%
Transcription with correction	1,215	1,179	1,110	1,255	<b>13.1%</b>
Transcription without correction	751	626	590	721	<b>22.2%</b>
Calculator	556	660	684	653	-4.5%
Referral of script to the Principal Assessor	781	540	465	398	-14.4%
Modified Content (e.g. text description of images)	202	277	267	316	<b>18.4%</b>
Adapted Certificate (e.g. in Large Print / Braille)	181	119	139	91	-34.5%
Question Paper signed to candidate	43	57	52	43	-17.3%
Live Presentation	30	37	36	40	11.1%
Braille	57	31	59	35	-40.7%
Candidate Signs Responses	40	42	38	23	-39.5%
	<b>107,156</b>	<b>110,644</b>	<b>117,102</b>	<b>129,599</b>	<b>10.7%</b>

We interested in tracking the use of more independent alternatives to readers and scribes, because candidates who use readers to help them access the question paper and scribes to record their answers are less independent than those who use ICT, digital papers or adapted or coloured papers. In addition, the use of readers and scribes places high demands on school staff and accommodation. Table 3 shows that the number of requests for readers and scribes has remained broadly constant between 2006 and 2011 while the number of requests for ICT, digital and other adapted papers has increased.

**Table 3: Number of requests for readers, scribes, ICT, digital, coloured and adapted papers 2006-2011**

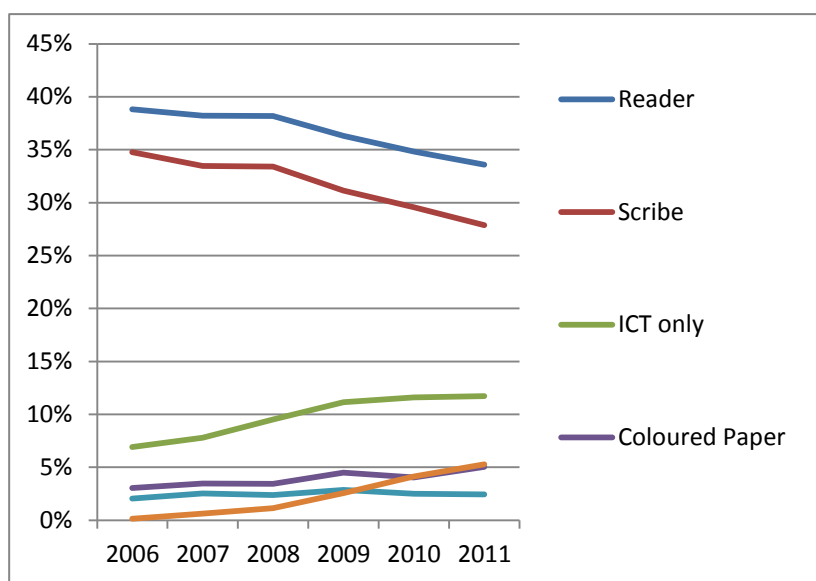
	2006	2007	2008	2009	2010	2011
Readers	16,798	16,122	16,936	16,554	16,863	18,032
Scribes	15,046	14,121	14,811	14,197	14,313	14,962
ICT only	2,998	3,295	4,227	5,086	5,622	6,294
Digital Papers	65	265	514	1,167	2,001	2,841
Coloured papers	1,326	1,468	1,523	2,050	1,964	2,713
Enlarged or adapted print papers	889	1064	1056	1305	1209	1305

If we now look at the percentage of the total number of requests (excluding extra time and separate accommodation) that include these specific types of requests, it is clear that reader/scribes are becoming less common while the use of ICT, digital, adapted and coloured papers is becoming more widespread (Table 4 and Figure 1).

While reader/scribes are still the most popular specific type of support requested (excluding extra time and separate accommodation), their use as a proportion of the total requests has dropped steadily over the past six years while there has been a corresponding increase in the proportion of requests that include ICT and digital, adapted or coloured papers. We believe that this is a desirable trend given that these methods of support offer greater independence to candidates and require fewer staff and lower levels of accommodation.

**Table 4: Percentages of requests that include readers, scribes, ICT, digital, coloured and adapters papers 2006-2011**

	2006	2007	2008	2009	2010	2011
Reader	38.80%	38.21%	38.18%	36.29%	34.83%	33.58%
Scribe	34.76%	33.47%	33.39%	31.13%	29.56%	27.86%
ICT only (i.e. word processor)	6.93%	7.81%	9.53%	11.15%	11.61%	11.72%
Digital Paper	3.06%	3.48%	3.43%	4.49%	4.06%	5.05%
Coloured paper	2.05%	2.52%	2.38%	2.86%	2.50%	2.43%
Enlarged or adapted print paper	0.15%	0.63%	1.16%	2.56%	4.13%	5.29%



**Figure 1: Percentages of requests that include readers, scribes, ICT, digital, coloured and adapters papers 2006-2011**

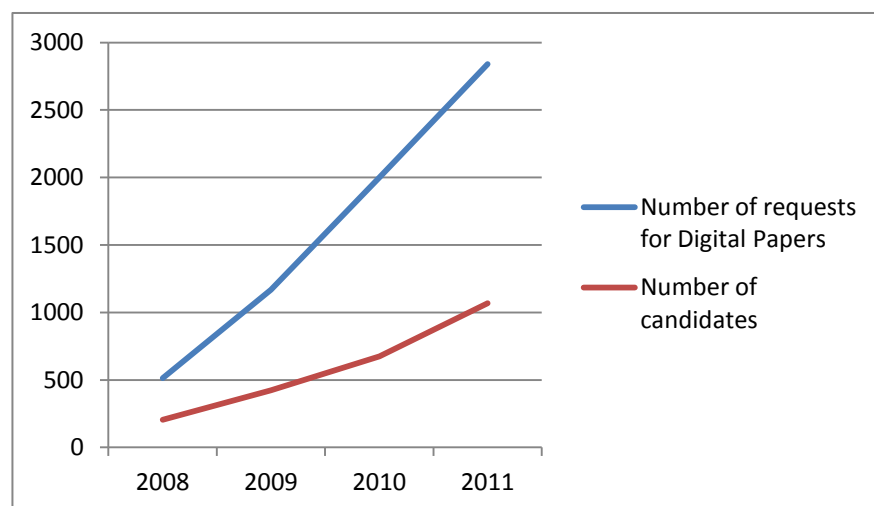
## Digital Question Papers

The number of requests for Digital Papers, the number of centres and the number of candidates for whom papers were requested continued to increase in 2011 (Table 5). There was a 42% increase in the number of requests; the number of centres increased by 47% and the number of candidates by 58%.

Table 5 shows that the mean number of candidates in centres using digital papers has increased by 50% from 2008 to 2010: from 4.43 in 2008 when the papers were first offered, to 7.32 in 2011. Centres are requesting digital papers for more candidates year on year.

**Table 5: Digital Question Papers 2008 - 2011**

	2008	2009	2010	2011
Number of requests	514	1,167	2,000	2,832
Number of centres making requests	46	73	101	149
Number of candidates	204	422	675	1,069
Mean number of candidates per centre	4.43	5.78	6.68	7.32
Mean number of requests per candidate	2.52	2.77	2.96	2.65



**Figure 2: Number of candidates using digital papers, and requests for digital papers 2008 – 2011**

### Requests from candidate

On average, a candidate using digital papers in 2011 requested fewer papers (2.65 entries, Table 5) compared to the year before (2.96 entries). Table 6 suggests that this is due to a relatively large increase in the proportion of candidates for whom one digital paper was requested (from 30% to 39% of the total). This in turn could be a consequence of the increase in the number of centres and candidates using digital papers for the first time. Anecdotal evidence from staff suggests that centres and candidates that are new to digital papers will use them for one or two examinations initially, and, assuming they are successful, will increase the number of requests in subsequent examination diets.

**Table 6: Numbers of candidates for whom different numbers of requests were made**

	Number of candidates 2009	% of candidates 2009	Number of candidates 2010	% of candidates 2010	Number of candidates 2011	% of candidates 2011
One request for DQP	149	35%	207	30%	425	39%
Two requests for DQP	75	18%	116	17%	174	16%
Three requests for DQP	66	16%	114	17%	155	14%
Four requests for DQP	49	12%	97	14%	149	14%
Five requests for DQP	45	11%	72	11%	102	9%
Six requests for DQP	19	5%	46	7%	56	5%
Seven requests for DQP	17	4%	21	3%	17	2%
Eight requests for DQP	2	0%	6	1%	4	0%

### Requests from Centres

The number of requests for digital papers from each of the 146 centres ranged from one request (made by 20 centres) to 161 requests from one school. The mean number of requests from each centre dropped slightly to 19.01 in 2011, from 19.8 in 2010, although the overall trend since the papers were first offered in 2008 is upward (Table 7). The mean number of candidates using digital papers in each centre continued to increase, from 6.68 to 7.32.

**Table 7: Mean number of candidates and requests per centre, 2008-2011**

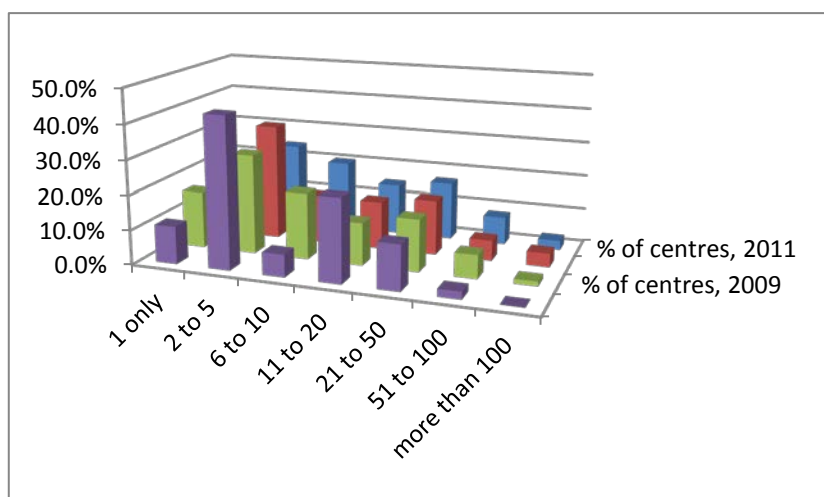
	2008	2009	2010	2011
Mean number of requests per centre	11.20	15.99	19.80	19.01
Mean number of candidates per centre	4.43	5.78	6.68	7.32

Table 8 and Figure 3 break down the numbers of requests from centres into categories and gives them as percentages, in order to compare and contrast over time. The only significant change over this period has been in the percentage of centres requesting 51 more papers, which suggests that centres are in general making greater use of a larger number of papers.

**Table 8: Percentages of centres requesting different numbers of digital papers 2008 - 2011**

Number of requests	2008	2009	2010	2011
1 only	10.9%	16.4%	12.9%	13.4%
2 to 5	43.5%	28.8%	33.7%	24.2%
6 to 10	6.5%	19.2%	13.9%	20.1%
11 to 20	23.9%	12.3%	13.9%	14.8%
21 to 50	13.0%	15.1%	15.8%	16.8%
51 to 100	2.2%	6.8%	5.9%	8.1%
more than 100	0.0%	1.4%	4.0%	2.7%





**Figure 3: Percentages of centres requesting different numbers of digital papers 2008 - 2011**

Table 9 tracks the number and percentage of centres that: a) requested digital papers for the first time that year, and; b) requested digital papers that year but not the following year. The increase in the number of centres each year is apparent, although the percentage of centres that used digital papers one year and not the next seems relatively large: 17% of centres that used digital papers in 2010 did not use them again in 2011, for example. Table 10 suggests that those centres that did **not** request digital papers the following year were ‘light’ users of the technology (e.g. mean = 5.47 requests in 2010), whereas centres that **did** request digital papers the following year were using the papers more intensively (mean = 22.70 requests in 2010). Therefore, centres that did not make repeat requests had only used small numbers of papers for probably one or two candidates.

**Table 9: Centres making new and repeated requests for digital papers 2008 - 2011**

	2008	2009	2010	2011
Number of centres using DPs	46	73	101	149
Number of centres using DPs for the first time	34	41	43	65
% of centres using DPs for the first time	74%	56%	43%	44%
Number of centres that did not use DPs the following year	14	15	17	-
% of centres that did not use DPs the following year	30%	21%	17%	-

**Table 10: Comparison of mean number of requests 2008 - 2011**

	2008	2009	2010	2011
Mean number of requests from all centres	11.20	15.99	19.80	19.01
Mean number of requests from new centres	6.74	11.00	6.86	9.48
Mean number of requests from centres that did <b>not</b> use DPs the following year	4.07	2.93	5.47	-
Mean number of requests from centres that <b>did</b> use DPs the following year	14.31	19.36	22.70	-

Table 11 collates the number of requests from the fifteen centres that made the largest number of requests each year between 2008 and 2011. Different centres are in the ‘top 15’ for each year, and so the table lists 28 different centres; the data is sorted by number of requests in 2011. This table is included to illustrate how the

number of requests has changed for the largest users, because this may help to predict trends as digital papers become more established in centres across the country.

**Table 11: 'Top 15' centres requesting digital papers 2008 - 2011**

Centre	Number of requests 2008	Number of requests 2009	Number of requests 2010	Number of requests 2011
St Paul's RC Academy	0	32	114	161
Harris Academy	0	20	46	125
Lourdes Secondary School	0	0	25	118
Campbeltown Grammar School	40	37	122	109
Robert Gordon's College	0	0	0	93
Beath High School	0	5	15	87
Prestwick Academy	31	60	89	84
Montrose Academy	0	0	0	77
St Columba's High School (Gourock)	13	33	20	73
Mintlaw Academy	41	48	61	72
Stranraer Academy	30	62	89	67
Kinross High School	32	59	100	65
The Royal High School	52	82	111	60
Inverness High School	6	4	24	56
Aboyne Academy and Deeside Community Centre	16	34	32	55
Holy Rood High School	15	30	41	53
Ashcraig School	19	37	69	50
Bo'ness Academy	0	68	54	37
Queen Anne High School	0	122	233	31
West Calder High School	0	23	39	28
St John's RC High School	3	9	34	26
Graeme High School	25	19	5	25
Buckie High School	19	29	15	22
The Gordon Schools	16	10	4	13
Anderson High School	18	18	15	2
Peebles High School	0	35	33	0
Broughton High School	15	10	18	0
Calderglen High School	14	0	1	0
<b>Totals</b>	<b>405</b>	<b>886</b>	<b>1409</b>	<b>1589</b>
<b>Mean for all 28 centres for 2008 to 2011</b>	<b>14.46</b>	<b>31.64</b>	<b>50.32</b>	<b>56.75</b>
<b>Mean for the top 15 for that year</b>	<b>25.53</b>	<b>51.20</b>	<b>82.33</b>	<b>86.80</b>
<b>% of requests made by top 15 centres for that year</b>	<b>74%</b>	<b>66%</b>	<b>62%</b>	<b>46%</b>

In 2011, two centres (Robert Gordon's College and Montrose Academy) were in the top 15 group, yet had not previously used digital papers, suggesting that some centres can adopt the technology without needing to trial it on a small scale.

Ten of the top 15 centres requested more papers in 2011 compared to 2010 and five requested fewer; the mean increase in the number of requests was 53%. These fifteen centres (10% of the total) were responsible for 1302, or 46% of requests for digital papers. The mean number of requests from these centres, for 2011, was 86.8, compared with the overall mean of 19 for all 149 centres in 2011. There has been significant growth in the mean number of requests from the top 15 centres over the four years: from 25.53 requests in 2008, to 86.80 papers in 2011.

It is clear from the table that most centres in this sample have increased their usage of digital papers over the period, but there are some intriguing variances. For example, Queen Anne High School made 233 requests in 2010 and only 31 in 2011, while Peebles and Broughton made no requests in 2011 although they were in the top 15 for the previous two years.

The mean number of requests may indicate future uptake:

- if every centre in Scotland made 19.01 requests (the mean number across all centres that used digital papers in 2011), there would be almost 10,000 requests;
- if every centre in Scotland made 86.8 requests (the mean number of requests from the top 15 centres in 2011), there would be almost 43,500 requests.

### Requests from local authority, FE, and Independent sectors

Table 12 tracks the number of request from local authorities, FE Colleges and Independent schools since the papers were first offered in 2008, rank ordered by the number of requests in 2011.

There were increases in the number of requests from most (25 out of 32) sectors between 2010 and 2011; the largest from schools in Dundee City and City of Glasgow. In percentage terms, East Ayrshire, North Lanarkshire and Clackmannanshire showed the largest increase in number of requests. There were lower numbers of requests from 7 local authorities, particularly Fife, Stirling, Scottish Borders and Shetland.

**Table 12: Local authority requests 2008 – 2011**

Authority	Number of requests 2008	Number of requests 2009	Number of requests 2010	Number of requests 2011	Change, 2010 to 2011	% change, 2010 to 2011
Dundee City	8	62	201	322	121	60%
City of Glasgow	19	42	102	206	104	102%
Aberdeenshire	62	65	115	205	90	78%
Fife	12	149	306	190	-116	-38%
Independent	10	22	55	148	93	169%
Edinburgh City	82	122	175	147	-28	-16%
West Lothian	0	45	59	133	74	125%
South Ayrshire	35	60	108	121	13	12%
Falkirk	27	97	98	119	21	21%
Angus	3	0	23	116	93	404%
Argyll and Bute	40	38	122	115	-7	-6%
Perth and Kinross	32	59	100	111	11	11%
Dumfries and Galloway	31	89	102	100	-2	-2%
East Ayrshire	0	1	8	96	88	1100%
East Lothian	0	0	13	92	79	608%
Highland	20	22	65	83	18	28%

Authority	Number of requests 2008	Number of requests 2009	Number of requests 2010	Number of requests 2011	Change, 2010 to 2011	% change, 2010 to 2011
Inverclyde	13	33	20	75	55	275%
North Ayrshire	4	16	30	68	38	127%
Aberdeen City	20	52	19	55	36	189%
Moray	18	31	39	54	15	38%
East Renfrewshire	0	4	21	42	21	100%
FE College	5	21	28	39	11	39%
Stirling	13	36	58	38	-20	-34%
North Lanarkshire	2	15	2	26	24	1200%
South Lanarkshire	18	1	16	26	10	63%
Eilean Siar (Western Isles)	0	2	4	25	21	525%
Midlothian	0	4	14	24	10	71%
Clackmannanshire	8	0	1	23	22	2200%
Renfrewshire	8	13	12	13	1	8%
Scottish Borders	6	41	64	9	-55	-86%
East Dunbartonshire	0	7	4	8	4	100%
Shetland Islands	18	18	16	3	-13	-81%
Orkney	0	0	0	0	0	0
West Dunbartonshire	0	0	0	0	0	0
<b>Totals</b>	<b>514</b>	<b>1167</b>	<b>2000</b>	<b>2832</b>	<b>+ 832</b>	<b>+ 42%</b>

The percentage of schools or centres from each sector that requested digital papers is given in Table 13. The number of centres using digital papers has increased in most local authorities/sectors; in 2011, 32% of SQA centres requested DPs compared to 22% in 2010.

**Table 13: Percentage of schools and centres using Digital Papers, 2010 - 2011**

Authority / sector	Total number of centres	% using Digital Papers , 2010	% using Digital Papers , 2011	Authority / sector	Total number of centres	% using Digital Papers , 2010	% using Digital Papers , 2011
East Lothian	6	33%	67%	Dumfries and Galloway	17	24%	29%
Angus	8	50%	63%	Fife	25	24%	28%
Perth and Kinross	10	10%	60%	City of Glasgow	39	13%	26%
East Ayrshire	9	33%	56%	Clackmannanshire	4	25%	25%
Falkirk	9	44%	56%	Eilean Siar (Western Isles)	4	25%	25%
Highland	31	26%	29%	Edinburgh City	29	14%	24%
Midlothian	7	14%	43%	East Dunbartonshire	9	11%	22%
South Ayrshire	8	25%	50%	Inverclyde	9	11%	22%
Aberdeenshire	17	41%	47%	Moray	9	22%	22%
North Ayrshire	11	36%	45%	Shetland Islands	9	22%	22%
East Renfrewshire	7	29%	43%	Argyll and Bute	10	10%	20%
Aberdeen City	13	15%	38%	FE College	40	13%	20%
West Lothian	13	31%	38%	North Lanarkshire	29	7%	17%
Stirling	8	25%	38%	Independent	77	6%	10%
Dundee City	11	45%	36%	Scottish Borders	10	30%	10%
South Lanarkshire	22	23%	36%	Orkney Islands	5	0%	0%
Renfrewshire	12	17%	33%	West Dunbartonshire	5	0%	0%

## Requests by subject

Table 14 breaks down requests for Digital Question papers across subjects. There were digital papers requested for 49 different subjects compared to 39 in 2010. These totals are across all examination levels, so for example the 771 requests for English are for Standard Grade, Intermediate, Higher and Advanced Higher entries. English continues to be the most popular digital paper, accounting for over 27% of requests.

**Table 14: Number of requests by subject, 2010**

Subject	Number of requests 2010	Number of requests 2011	Subject	Number of requests 2010	Number of requests 2011
English	503	771	Graphic Communication	0	14
History	155	228	Information Systems	11	14
Biology	153	210	Human Biology	12	12
Geography	133	188	Music	8	12
Physical Education	98	133	Mathematics: Maths 1, 2 and Applications	0	9
Modern Studies	108	130	Care	7	8
Computing Studies	101	128	Product Design	8	7
Chemistry	108	104	Psychology	3	7
Physics	78	97	Technological Studies	6	7
Administration	67	88	Music: Performing	5	4
Craft & Design	83	85	Philosophy	2	4
French	49	82	Spanish	0	4
Drama	47	76	Hospitality - Professional Cookery	0	3
Business Management	37	64	Accounting & Finance	8	2
Computing	29	46	Early Education and Childcare	0	2
Social & Vocational Skills	13	41	Home Economics: Lifestyle and Consumer Technology	0	2
Science	11	35	Italian	0	2
Home Economics	13	33	Sociology	3	2
Mathematics	41	33	Travel and Tourism	0	2
German	33	32	Accounting	1	1
Art and Design	23	26	Geology	0	1
Religious, Moral and Philosophical Studies	10	25	Home Economics: Health and Food Technology	4	1
Media Studies	3	23	Latin	0	1
Mathematics: Maths 1, 2 and 3	15	17	Managing Environmental Resources	0	1
Religious Studies	7	15	Classical Studies	4	0

## 2011 Questionnaire: responses from centres

As well as quantitative analysis, it is important to establish the views of centre staff that used the digital papers. The SQA team created a SurveyMonkey questionnaire, which was completed by 67 of the 149 centres (45%). This is a higher return rate than the previous year (35%) when the questionnaire was emailed to school as an interactive PDF file.

Question	Yes	No	Feedback																
1. Was the format and quality of the digital papers acceptable?	62 (93%)	5 (8%)	Most centres were happy with the papers. Negative comments concerned the lack of answer boxes on Intermediate and Higher papers; usability of PDF answer booklets; and inaccurate text to speech in modern languages and maths.																
2. Were there any errors in the Digital Question Papers used by your centre?	9 (13%)	58 (87%)	The digital papers were in general felt to be very accurate. One respondent reported a missing answer boxes in a Standard Grade Physics and another in a SG Biology paper. One school noted that it was not possible to read the SG Graphic Communication paper with text-to-speech (although the pupils did not need the facility). A respondent noted that roman numerals were not read out.																
3. Are there any ways in which you think Digital Question Papers could be improved?	28 (42%)	39 (58%)	<p>28 respondents offered suggestions for improving digital papers. The most common suggestions were to improve the pronunciation of the electronic voices and to read mathematical and scientific terms. 5 respondents asked for the answer booklets to be provided on CD (they are provided on the SQA web site); 4 asked for answer boxes to be added to question-only papers; 4 would like to see better tools for answering maths and science papers.</p> <table border="1"> <thead> <tr> <th>Area for improvement</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Text to speech issues</td> <td>9</td> </tr> <tr> <td>Request for Answer Booklets on CD</td> <td>5</td> </tr> <tr> <td>Request for Answer boxes on Question Only Papers</td> <td>4</td> </tr> <tr> <td>Issues with maths or science</td> <td>4</td> </tr> <tr> <td>Issues with Answer Booklets</td> <td>2</td> </tr> <tr> <td>Request for 1 CD per pupil</td> <td>1</td> </tr> <tr> <td>CD failure</td> <td>1</td> </tr> </tbody> </table>	Area for improvement	Number	Text to speech issues	9	Request for Answer Booklets on CD	5	Request for Answer boxes on Question Only Papers	4	Issues with maths or science	4	Issues with Answer Booklets	2	Request for 1 CD per pupil	1	CD failure	1
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CD failure	1																		
4. Was the delivery of the CDs at your centre satisfactory?	64 (96%)	3 (5%)	Delivery of the papers on CD was in most cases satisfactory.																
5. We provided one CD-ROM for each subject/level plus one back-up copy. Was this provision acceptable to you?	62 (93%)	5 (8%)	Most centres were happy to receive on CD per subject/level. Two respondents asked for one CD per student per exam; one asked for downloadable papers.																
6. What were the accommodation arrangements for candidates who used Digital Question Papers in your centre?	Open ended response		Centres used a wide range of accommodation arrangements. There were 61 replies to this question: centres used computers or ICT suites, libraries, classrooms and small meeting rooms.																

Digital Question Papers 2011

Question	Yes	No	Feedback																									
7. Did you encounter any problems with the examination arrangements for candidates who used Digital Question Papers in your centre?	13 (21%)	50 (79%)	2 respondents experienced delays because they did not realise that answer booklets had to be downloaded from the SQA web site; 2 respondents had problems printing (insufficient printers or paper); one school had a power cut in the whole town during Higher English.																									
8. Did you encounter any technical problems with the examinations for candidates who used Digital Question Papers in your centre? Please include details here of any difficulties encountered with PC equipment, etc.	25 (40%)	38 (60%)	<p>Out of the 21 replies:</p> <ul style="list-style-type: none"> <li>• 6 respondents mentioned computers crashing;</li> <li>• 4 respondents had printer problems (not working, running out of ink);</li> <li>• 2 had network or server problems;</li> <li>• 2 complained about slow computers;</li> <li>• 2 did not have PDFaloud installed;</li> <li>• 2 had problems with the computer reading CDs;</li> <li>• one had issues with login profiles not giving correct access;</li> <li>• one could not get the Scottish voice to work;</li> <li>• one hard disc crashed.</li> </ul> <p>The issues described are typical problems experienced when using computers in schools. The number of issues would seem to be relatively small considering there were 2,832 exam entries for which digital papers were requested.</p>																									
9. Does the SQA Guidance material adequately cover the arrangements that need to be put in place in order to use digital papers?	58 (92%)	5 (8%)	Respondents were generally satisfied with the SQA guidance.																									
10. Did you use standalone or networked machines (or both)?	Standalone = 19 (30%) Networked = 27 (43%) Both = 17 (27%)		<p>SQA and CALL recommend the use of networked computers because it is more efficient and in most cases reliable. The percentage of standalone computers being used has fallen over the years since 2008.</p> <table border="1"> <thead> <tr> <th></th> <th>2008</th> <th>2009</th> <th>2010</th> <th>2011</th> </tr> </thead> <tbody> <tr> <td>Standalone</td> <td>47%</td> <td>38%</td> <td>31%</td> <td>30%</td> </tr> <tr> <td>Networked</td> <td>32%</td> <td>48%</td> <td>60%</td> <td>43%</td> </tr> <tr> <td>Both</td> <td>21%</td> <td>14%</td> <td>9%</td> <td>27%</td> </tr> </tbody> </table>		2008	2009	2010	2011	Standalone	47%	38%	31%	30%	Networked	32%	48%	60%	43%	Both	21%	14%	9%	27%					
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11. For the 2011 examinations, if candidates required the Question Paper to be read out, SQA recommended that centres use either PDFaloud or Texthelp Read and Write Gold. Did any of your candidates use the text-to-speech feature?	35 (56%)	28 (44%)	<p>The percentage of centres using text to speech software increased slightly from the previous year, to just over half.</p> <table border="1"> <thead> <tr> <th>Was text to speech used?</th> <th>2008</th> <th>2009</th> <th>2010</th> <th>2011</th> </tr> </thead> <tbody> <tr> <td>Yes</td> <td>45%</td> <td>40%</td> <td>49%</td> <td>56%</td> </tr> <tr> <td>No</td> <td>55%</td> <td>60%</td> <td>51%</td> <td>44%</td> </tr> </tbody> </table>	Was text to speech used?	2008	2009	2010	2011	Yes	45%	40%	49%	56%	No	55%	60%	51%	44%										
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12. Which text-to-speech program did you use?	PDFaloud = 22 (71%) Read and Write Gold = 7 (23%) Other = 2 (7%)		<p>The majority (71%) of centres using text-to-speech software continued to use PDFaloud. This is likely to change in future now that PDFaloud is no longer available.</p> <table border="1"> <thead> <tr> <th>Text to speech tool</th> <th>2008</th> <th>2009</th> <th>2010</th> <th>2011</th> </tr> </thead> <tbody> <tr> <td>PDFaloud</td> <td>30%</td> <td>50%</td> <td>76%</td> <td>71%</td> </tr> <tr> <td>Read and Write Gold</td> <td>50%</td> <td>36%</td> <td>24%</td> <td>23%</td> </tr> <tr> <td>Adobe Read Out Loud</td> <td>10%</td> <td>9%</td> <td>0%</td> <td>0%</td> </tr> <tr> <td>Other TTS</td> <td>10%</td> <td>5%</td> <td>0%</td> <td>6%</td> </tr> </tbody> </table>	Text to speech tool	2008	2009	2010	2011	PDFaloud	30%	50%	76%	71%	Read and Write Gold	50%	36%	24%	23%	Adobe Read Out Loud	10%	9%	0%	0%	Other TTS	10%	5%	0%	6%
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Question	Yes	No	Feedback
13. Did any of your candidates sitting Digital Question Papers use Comment and Markup tools?	4 (8%)	47 (92%)	Few of the candidates appeared to use the Adobe Reader commenting and markup tools for drawing or creating diagrams or graphs on the digital papers.
14. For the 2012 Examinations we are investigating the option of distributing Digital Question Papers via the SQA Secure website rather than issuing them on CD. Would this option be acceptable for your centre?	32 (63%)	19 (37%)	A significant number of respondents felt that their school network or internet connections were not sufficiently reliable to be able to download digital papers direct from a secure SQA web site, or felt that CDs were more secure.
15. Please provide any additional comments here. We would be particularly interested to know your future plans for using Digital Question Papers, your thoughts on delivery systems and anything else you have to say.	Open ended response		There were 27 comments from centres which are reproduced below.

### Additional comments from staff in 2011

While issues and areas for development have been reported above, many positive comments were also received from staff:

- *Where we have in the past used ICT we would now request digital papers.*
- *Overall the use of the digital paper was smooth with no problems for Higher Information Systems. I have no doubt this format will be used in Higher Computing this year.*
- *Intend to use the read aloud features of digital exams this year. PDF Aloud installed on school computers.*
- *We have another candidate this year who will use these. This is much better than a reader and scribe situation. We would need a larger bank of past papers available however, to allow more practice.*
- *We plan to continue using digital papers using a dedicated room. Pupils use digital papers from S1 for assessments so that they are very competent by SQA time.*
- *The digital papers are generally very good. Issues regarding the number of CDs and the time allowed by our invigilator to set up the papers notwithstanding. The use of the secure website to distribute papers makes sense but only if sufficient time is allowed before the published start time to allow for potential access problems and service disruptions. Our intention is to continue to use digital papers and to increase the number of candidates who make use of them. It would be nice to see every paper produced digitally - with boxes for answer entry. I noticed that several, mostly credit papers, lacked this facility. In common with many schools we have ASN candidates who sit and pass credit level.*
- *All in all it worked fairly well. Some exams, as mentioned, are not in a particularly useful format for these candidates (intermediate and higher).*
- *The pupils selected for digital papers during this diet provided us with evidence that they could show their potential and complete their papers independently. They all felt satisfaction at being independent. Our plans are to continue with digital exams for the pupils in S4 and 5 who used them this year. To increase the numbers in S4 by using Read & Write Gold to allow selected pupils, who would previously have required a scribe, to have text and questions read at their own speed and allow them to work independently.*



- *Our Academy has suffered a drastic cutback on Sfl staff and this will have the knock on effect of making us work harder to have the pupils use Digital Papers instead of having a reader. We would therefore expect to increase the use of digital papers over the coming months.*
- *We are a small school and have only used the papers for one pupil with a visual difficulty. I would say that it was very successful for this pupil and I will always consider this option when deciding on special arrangements.*
- *The pupils really like the independence the digital exams give them. It was also good to have the answer books.*
- *A couple of thoughts: At present the digital paper requests are really only considered for dyslexia, but pupils with other ASN e.g. motor impairment, SEB, Autism, would also benefit from using digital papers for a variety of reasons. Also wondered if the papers could eventually be saved and emailed rather than printing them out.*
- *English is still the easiest to use and adapt within school. It is hoped to trial Digital Papers in Social Subjects as well.*
- *I am looking forward to including high quality speech recognition software in the digital exams - that would be a real milestone. From other technical issues - sometimes the software does not react quickly enough to commands - you need to press the pause button twice or three times to get a result. Generally with a bit of polishing & upgrading digital exams could be a great alternative to the Reader / Scribe assessment arrangement.*
- *We intend to move from stand alone to secure network within school.*
- *The pupils' experience of using the digital exams was a very positive one. Pupils adapted to the technology with ease and each found their own preferred way of using it - some pupils used the digital reader only for text that they struggled with in the paper copy whereas others did not look at the paper exam and worked exclusively on the computer. It was this flexibility of use that impressed me. We also used this format for our internal exams at the end of third year so this year our S4 will mostly have prior experience of using the format in a formal exam. In 2012 we will be introducing speech input for those candidates who would otherwise have used a human scribe. Answering Q13 was extremely time consuming - perhaps the AAR system could collect this information for you in future.*
- *The candidate (and his parents) were very appreciative that the school was able to provide Digital Question Papers which was the ideal means for this candidate to complete his SG examinations. Given the success of this, the school would be keen to proceed with Digital Exam Papers given the suitability of the candidate.*
- *Digital versions of the Standard Grade English writing papers for standard grade have very large image files in them which slows down scrolling.*
- *We are using digital papers across all year groups now and some departments use them to assess entire classes, thus reducing the stigma of pupils being separated from their class for assessments. We actively encourage pupils to try digital papers to build resilience and independence*
- *We anticipate increased numbers of pupils will be presented using digital exam papers. Perhaps 6 pupils. Accommodation issues and Reader /Scribe provision will improve using digital exams and improve pupil independence.*
- *This was the first time our centre had used digital exams. I was pleased by how easy, user friendly the process was. It was a great benefit to several of our students and we are going to develop the use of these further through the school.*
- *This was the second year of using digital exams in our school. One difficulty that we have had is in providing sufficient material for youngsters to practice and finding the time so that they can do this. Another issue has been to provide digital prelims for candidates so that they have had the 'real'*

*experience. Staff in schools have so little time available to complete all administration tasks that it is sometimes hard to persuade them to do just one more task! A school issue I know, but a measure of the amount of time to successfully pursue digital exams - which I think are brilliant and so do most of the youngsters in our school who have used them. We have not used the text to speech as yet, as there is a lot of work to find the time to 'train' the candidates to use this. That is our next challenge!*

- *We plan to use digital papers more extensively next diet.*
- *I am in complete agreement with use of SQA secure, but it the CDs are useful for access and not having to wait first thing in the morning for material to appear in SQA secure.*

## 2011 Focus Group meeting

Staff from centres that used digital papers in 2011 were invited to attend a Focus Group meeting on 7<sup>th</sup> October 2011 at CALL Scotland in the University of Edinburgh. This was the fourth annual meeting since the digital papers were introduced in 2008, and the events provide a very effective means for staff to share experiences and to discuss issues and ideas with SQA and CALL Scotland staff. 32 staff from 28 different centres attended the meeting, together with four staff from SQA and two from CALL Scotland.

The Focus Group reviewed the overall requests for and use of digital papers in 2011 and discussed issues raised by the feedback questionnaires, in order to inform possible developments to papers and arrangements.

### **Answer Booklets in DOC**

The 2009 Focus Group suggested that it would be helpful to provide answer booklets in PDF for candidates to write answers to the 'question only' papers and these were provided by SQA for the 2010 and 2011 diets. Staff reported that the PDF answer booklets had proved helpful although feedback from the questionnaires and the group highlighted some difficulties:

- the amount of text on one page is constrained by the size of the text box and text does not flow over to the next page;
- it is not easy to insert symbols or to format text;
- the PDFaloud text-to-speech does not highlight text as it reads.

The 2011 Focus Group members asked if answer booklets could be provided in Microsoft Word (DOC) format for the 2012 diet, which would enable candidates to take advantage of better text formatting tools, to insert mathematical and scientific expressions and to use a wider range of text to speech tools. SQA agreed to investigate this and DOC answer booklets were made available on the SQA web site in January 2012<sup>1</sup>.

### **Higher multiple choice papers**

SQA added 'tick boxes' to multiple choice Standard Grade Chemistry papers in 2010 so that candidates could click with the mouse rather than use more cumbersome digital drawing tools on the digital paper, or pencil or paper on the hard copy. These papers were well received and at the 2011 meeting staff requested the same provision for multiple choice Higher answer sheets. These take the form of an answer sheet where the candidate marks the correct answer with a horizontal line (Figure 4), rather than a tick. The answer sheets are then marked electronically.

CALL produced a sample digital sheet, whereby a candidate would click with the mouse to produce a black square but it was not possible to verify that this technique would be workable in time for the 2012 diet. Papers will have to be checked using the electronic marking system to ensure that marks created on the digital paper, and printed out, can be accurately scanned and marked. However, printing a digital multiple choice test which will then be scanned back from paper to electronic format and marked would seem inefficient and a potential source of error, and so the option of collating and processing the candidate's electronic multiple choice answer sheet should also be investigated.

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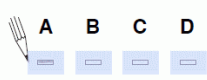
<sup>1</sup> <http://www.adapteddigitalexams.org.uk/Blog/Blog-Post/index.php?reference=293>

**Sample Question**

To show that the ink in a ball-pen consists of a mixture of dyes, the method of separation would be

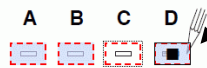
A chromatography  
B fractional distillation  
C fractional crystallisation  
D filtration.

The correct answer is **A**—chromatography. The answer **A** has been clearly marked in **pencil** with a horizontal line (see below).



**Changing an answer**

If you decide to change your answer, carefully erase your first answer and using your pencil, fill in the answer you want. The answer below has been changed to **D**.



**Figure 4: Digital Multiple choice question**

## Text to speech

Staff in 2010 and 2011 reported limitations with the text to speech software for reading out digital papers and these were discussed with the Focus Group.

## Pronunciation

The ‘Heather’ Scottish computer voice was generally preferred to other voices by most candidates and centres, but some words and terms were not pronounced correctly. There are two approaches that could be used to improve pronunciation of digital papers:

1. identify mis-pronounced words and update the text-to-speech program’s pronunciation dictionary;
2. identify mis-pronounced words and update the Heather voice itself.

The advantage of option one is that school and local authority technicians would not have to install a new version of the voice on all the computers that were used for the exam. The disadvantage of this approach is that not all text-to-speech programs actually provide the option to change pronunciation, and the process of updating the pronunciation dictionary for PDFaloud, the most popular text-to-speech program, is fairly technical.

Staff at Robert Gordon’s College in Aberdeen examined a number of papers and created a pronunciation dictionary for PDFaloud. This list was amended and extended and then made available, together with instructions, on CALL Scotland’s website at <http://www.adapteddigitalexams.org.uk/Blog/Blog-Post/index.php?reference=219>.

Option 2, of improving the voice itself, has the advantage of ensuring that the two Scottish voices (‘Stuart’, a male Scottish voice, was developed and made available in August 2011, under funding from the Scottish Government) behave consistently with all text to speech programs.

CALL Scotland has previously checked 2007 Standard Grade papers and identified mispronounced words and CereProc, the developers of the Heather voice, created a new version. Following the 2011 Focus Group, CALL checked through all the 2011 Standard Grade General and Higher papers (69 papers and 927 pages) and identified 259 words which were not pronounced correctly. These words were passed to CereProc, the developers of the voice, and new versions of the voices made available in April 2012.

### **Text that cannot be read**

Some text elements cannot be read out by the computer because they are images of text as opposed to readable text. Correcting these would require SQA desktop publishers to insert text boxes over the images when laying out the papers. The Standard Grade Graphic Communication papers cannot be read at all with text to speech: it is not clear why. Further investigation and discussion on improving the accuracy and consistency of text to speech is required.

### **Downloadable question papers**

There was discussion regarding the possibility of providing digital question papers for download, from the secure SQA web site, rather than distributing papers on CD. This could potentially be more convenient and secure for centres and considerably less expensive for SQA.

However, feedback from the questionnaires and the focus group indicated that this was not seen as a viable option at this time because of concerns over internet and network reliability and security.

### **Answer booklets**

Several respondents asked for the digital answer booklets to be provided on each CD. SQA felt that it was sufficient to make these available for free download from the SQA web site, so that centres can obtain and install them well in advance of the diet.

### **Time to set up papers**

Some centre staff reported again that the length of time stipulated by SQA (one hour) to open the envelopes containing the digital papers CDs and install the papers on the computers was insufficient. There was some discussion about this and SQA felt that it was necessary to continue with this policy in order to maintain the security of the assessment.

## Speech Recognition and SQA Assessment Arrangements

Speech recognition software, which converts speech into text on the computer, potentially offers particular benefits for candidates with additional support needs. For example, students with physical disabilities who cannot handwrite or type may be able to dictate text and control the computer, while writers with dyspraxia or dyslexia who have handwriting or spelling difficulties can use speech recognition to overcome the mechanics of the writing process. Despite this potential, very few candidates have used speech recognition in examinations: the SQA assessment arrangements team received nine enquiries regarding speech recognition in 2009 and 2010 but none of the pupils actually used the software in an exam.

Given that many pupils have writing difficulties and use scribes in examinations, an obvious question to ask is whether speech recognition can offer an alternative method of support. A project was therefore carried out to investigate whether speech recognition programs could be used to dictate into digital question papers.

The project found that the accuracy and reliability of speech recognition software had improved considerably in recent years and all the programs tested were functional and seemed effective when dictating into a word processor. Dragon NaturallySpeaking and SpeakQ can be used to access the SQA digital question papers, whereas Windows 7 speech recognition could not.

There is therefore scope for speech recognition software to be used by candidates with SQA digital question papers. The full report was published in May 2011 and is available from <http://www.adapteddigitalexams.org.uk/Downloads/Reports/>.

## The use of Communication and Assistive Technologies for disabled candidates in Assessments

CALL Scotland was asked to compile a report on Communication and Assistive Technologies that might be used by disabled learners in Curriculum for Excellence assessments. The report was written to enable the Scottish Qualifications Authority to:

- (i) consider the ways in which technologies have the potential to increase access to these new qualifications for disabled candidates, and;
- (ii) consider what the impact might be of using such technologies in terms of maintaining the credibility of the assessment.

The CALL Scotland team were asked to consider three questions:

- What Communication and Assistive Technology is currently in use in schools and colleges?
- Which disabled candidates might need Communication and Assistive Technology?
- What is the current understanding among stakeholders as to its current use in assessments?

The final report was published in October 2011 and is available from <http://www.adapteddigitalexams.org.uk/Downloads/Reports/>.

## National Assessment Resource: Accessibility of Literacy Assessment Tasks

The National Assessment Resource<sup>2</sup> (NAR) is an online resource that supports assessment approaches within Curriculum for Excellence. A key purpose of NAR is to support practitioners in developing a shared understanding of standards and expectations for Curriculum for Excellence and how to apply these consistently. The NAR contains examples of literacy and numeracy assessment tasks developed by SQA as well as a wide range of assessment approaches and materials from practitioners across Scotland.

Curriculum for Excellence “aims to ensure that **all** children and young people in Scotland develop the knowledge, skills and attributes they will need if they are to flourish in life, learning and work, now and in the future”<sup>3</sup> (our emphasis) and so it is important that assessment tasks and materials offered on the NAR are accessible to all pupils in Scotland, including those with additional support needs.

CALL Scotland was therefore asked to investigate the accessibility of eighteen exemplar Literacy Assessment Tasks on the NAR. The report was submitted to SQA in November 2011 and reported that the printed versions were reasonably accessible for many learners with mild visual impairment or reading. However, the printed versions, as they are currently presented, would **not** be accessible for some learners with disabilities or additional support needs, such as blind learners, who may need the task in Braille; learners with physical disabilities, who cannot physically hold the materials, turn the pages, or write their answers; learners with dyslexia, reading difficulties or visual impairment, who may not be able to read the text. Therefore, it is important that the Literacy Tasks are ‘digitally accessible’ for these learners. However, none of the Literacy task digital files examined met minimum accessibility requirements. The report analysed the issues and summarised the modifications required in order to provide digitally accessible tasks.

## Links with JCQ and other UK awarding bodies

The success of the SQA Digital question papers has been reported at Scottish and UK conferences, and in academic journals and the press. As a result, there has been interest in the papers from schools and awarding bodies in England, Wales and Northern Ireland.

CALL and SQA staff presented the work to representatives of the joint Council for Qualifications (JCQ) and the English, Welsh and Northern Irish awarding bodies at meetings in Edinburgh and London. In October 2011, representatives visited SQA to find out how papers were produced and also held discussions with pupils and staff at Lasswade High school in Midlothian.

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<sup>2</sup> National Assessment Resource, <https://www.narscotland.org.uk/>

<sup>3</sup> The purpose of the curriculum  
<http://www.educationscotland.gov.uk/thecurriculum/whatiscurriculumforexcellence/thepurposeofthecurriculum/index.asp>

## Engagement and CPD

Table 15 lists conference and training events between 1 April 2010 to 31 March 2011 where CALL staff presented the digital question papers. In-service training is primarily funded by schools and local authorities while presentations and conferences are supported through CALL core funding from the Scottish Government.

**Table 15: Engagement and CPD events 2010-11**

Date	Topic	Event & Venue	Number of participants
15/6/10	SQA Digital Papers	ICT & Inclusion, Dundee	30
16/6/10	SQA Digital Papers	ICT & Inclusion, Edinburgh	30
17/6/10	SQA Digital Papers	ICT & Inclusion, East Kilbride	30
30/8/10	SQA Digital Papers	Dunblane High School,	15
31/8/10	SQA Digital Papers	Blantyre, South Lanarkshire	14
2/9/10	SQA Digital Papers	CALL Scotland, Edinburgh	40
13/9/10	SQA Digital Papers	Stirling Council	15
16/9/10	SQA Digital Papers	CALL Scotland, Edinburgh	15
24/9/10	SQA Digital Papers	Albyn School, Aberdeen	12
25/9/10	Books for All & SQA Digital Papers	Dyslexia Scotland Education Conference, Edinburgh	150
30/9/10	SQA Digital Papers	CALL Scotland, Edinburgh	15
6/10/10	SQA Digital Papers	Banchory, Aberdeenshire	9
7/10/10	SQA Digital Papers	Fraserburgh, Aberdeenshire	12
10/11/10	SQA Digital Papers	Haddington, East Lothian	18
13/11/10	Books for All & SQA Digital Papers	Dyslexia Scotland AGM, Stirling	25
19/11/10	Books for All & SQA Digital Papers	SAVIE (Scottish Association of Visual Impairment Educators), Edinburgh	20
23/11/10	SQA Digital Papers	Dundee	12
24/11/10	SQA Digital Papers	Dundee	12
26/11/10	Books for All & SQA Digital Papers	SERA (Scottish Educational Research Association) Annual Conference, Stirling	75
29/11/10	SQA Digital Papers	RAATE (Recent Advances in Assistive Technology & Engineering) Conference, Warwick	30
13/1/11	Assistive Technology for Learners with ASN	PGDE students, Moray House	80
19/1/11	SQA Digital Papers	SCIS (Scottish Council of Independent Schools) SQA Coordinators' Conference, Glasgow	100
18/2/11	SQA Digital Papers	HMIe ASN group, CALL Scotland	15
24/3/11	SQA Digital Papers	CALL Scotland, Edinburgh	20
31/3/11	SQA Digital Papers	CALL Scotland, Edinburgh	15
		<b>Total number of participants</b>	<b>809</b>



Figure 5: SQA Digital Question Papers web pages

Figure 6: CALL Scotland Digital Question Papers web site

© CALL Scotland  
The University of Edinburgh  
The Moray House School of Education  
Paterson's Land, Holyrood Road  
Edinburgh  
EH8 8AQ  
<http://www.callscotland.org.uk>  
[www.AdaptedDigitalExams.org.uk](http://www.AdaptedDigitalExams.org.uk)