SLS-DSU

Scottish Longitudinal Study Development & Support Unit

Technical working paper 6

Education data available within the Scottish Longitudinal Study

Gillian M Raab

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Dept of Geography & Sustainable Development
University of St Andrews
North Street
St Andrews
Fife KY16 9AL

email: gmr1@st-andrews.ac.uk

Longitudinal Studies Centre Scotland
National Records of Scotland
Ladywell House
Ladywell Rd
Edinburgh EH12 7TF

email: lscs@st-andrews.ac.uk

University of St Andrews

Longitudinal Studies Centre LSCS Scotland

National Records of Scotland

E·S·R·C Economic & Social Research Council

SLS-DSU
Scottish Longitudinal Study Development & Support Unit

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Summary

This document summarises the education data for school years 2007 to 2010 made available to the Scottish Longitudinal Study (SLS) from ScotXed. Such data consist of records from the School Census carried out in September of every year, attendance data obtained at the start of the following year and attainment data from the Scottish Qualifications Authority (SQA) for qualifications obtained during the year. Linkage rates from the School Census to the SLS and from the SLS to the School Census are calculated. Recommendations are made to attempt to improve the scope and quality of the data for this and subsequent years.

1 Background

1.1 Education data sets

Until now the only data on educational experience and attainment of SLS members has been the 1991 and 2001 census data on educational attainment. In 1991 only tertiary qualifications were noted. In 2001 people reported which of a list of qualifications they had attained, ranging from O-grades to degree level, but with no details or indication of when they were attained. To augment this, data were obtained from ScotXed, the agency within the Scottish Government responsible for collecting and coordinating data from schools. These consisted of the following:

- School Census data for every pupil in Local Authority (LA) funded schools
- Data on attendance, lateness and exclusion from school for the same pupils
- Attainment data originally collected by the Scottish Qualifications Authority (SQA) giving details of the results for all SQA accredited qualifications for candidates the school years 2007-8 to 2010-11.

The School Census data were obtained for censuses conducted in the September of 2007-2010. Attendance and lateness data were collected for these same school years, although the collection was done at the start of the following year. The SQA data were for qualifications examined in the equivalent school years.

The next section summarises, very briefly, the way in which these education data were linked to the Scottish Longitudinal Study (SLS) data. Full details for each year are provided in internal documentation written by the SLS data base manager, Joan Nolan. SLS users, including those preparing an application, who wish to access this material should approach their support officer for guidance.

1.2 Summary of linkage methods

The SLS-DSU team received the complete School Census data. Records with the confidential SLS dates of birth were selected from the School Census data for each year. This was the starting point of linkage to the SLS and the procedure below was carried out for each year.

The fields *date of birth, gender* and *postcode* were to be used to allow the NHS Central Register (NHSCR) to identify the SLS identifiers (SLSNOs) corresponding to the identifier in the School Census, the Scottish Candidate number (SCN).

Some School Census records had identical SCN, date of birth, gender and postcodes, as can be the case when a pupil attends more than one school. These were identified, and one record from each set was sent to NHSCR. Duplicate SCNs with different linkage information were retained, as a link might be established with one, but not another. The records were matched on the NHS system at NHSCR where a flag is held to identify SLS members who have been linked from the 1991 or 2001 censuses or from births or immigration records. The records held at NHSCR hold multiple postcodes as people move between GP practices, so the School Census postcode can be matched to any of these. NHSCR then returned a file with SCNs and SLSNOs, which they hold for traced SLS members, to allow the School Census data to be merged with the SLS.

Reasons for the records not being linked include:

a) Incorrect entries for any of the files used in linkage either in the records held by ScotXed, by the SLS-DSU or by NHSCR.
b) A pupil may not be in the SLS either because they failed to complete 2001 census or failed to be added as a new entry when registering with a GP after arriving in Scotland from another part of the UK or abroad.
c) Records (including same-sex multiple births) where two or more SLS members have the same values on all linkage variables.

The data on exclusion and attendance and SQA attainment data files included SCN and were thus linked to the SLS via the School Census. Note, however, that the SQA data also contains the three potential linkage variables, so it may be possible to link this directly to the SLS using a process similar to that for the School Census data. In anticipation of this the dates of birth and postcodes from the School Census were checked against those available from the SQA data for those cases that linked successfully via their SCN. Only 27 out of 15,580 individuals had different dates of birth on the two systems (<0.2%). These records appear to be mismatches that should be excluded from future analyses (see section 4.1 and Table 16).

2 School Census data (Table H01)

2.1 Overview

School Census data currently held at the SLS-DSU (Table H01) contains data for the four years 2007-2010. Schools complete a census record for all pupils attending school on the School Census date in September of each year.[1] ScotXed supplied the complete School Census data for all pupils for these years to the SLS-DSU, but Table H01 contains only those records where the pupil had one of the 20 SLS dates of birth.

The majority of pupils have a single School Census record in a year, but in a small percentage of cases there is more than one record within a School Census year with the same SCN number. This can be the case when a pupil attends more than one school. From the 150,101 School Census records, 709 records involved a duplicate SCN number (347 pairs and 5 sets of triplicates). All such sets had identical values of gender and date of birth, but involved different schools for the same SCN number. All but 38 of the 352 sets of records had identical postcodes. The 709 records comprised records from 272 pupils. The majority consisted of secondary pupils (n=132) and there were also 102 pupils who had one or more records from a Special School. These all appear to be pupils who are registered at more than one school in the September of the School Census year.

In Scotland, pupils start school in August if they reach their birthday by the end of the preceding February. They may leave school at the end of May if they reach their 16th birthday between 1st March and 30th September of the same year. Those who reach their 16th birthdays between 1st October and the end of February may leave after the Christmas holidays. Thus most pupils will have 11 years of compulsory schooling to the end of S5 when they should be in school at the start of each of year, but some will be eligible to leave at the end of S4 and others will

[1] *Census dates in these three years were Monday 17/9/2007 Friday 19/9/2008, Monday 21/9/2009 and Thursday 23/9/2010.*

be eligible to leave before the Christmas holidays in S5. The majority will stay on for a further one or two years, but in some cases they may finish their final years of compulsory schooling at a Further Education College.

The School Census records report the stage of schooling as Primary 1-7, (P1-P7) Secondary 1-6 (S1-S6) plus codes for adults (AD) post S6 years (S9)[2] and those for pupils in special education (SP). We can define **stage cohorts** by the stage of the pupils at their first School Census record (see notes to Table 1). We can also identify **age cohorts** of pupils, by their dates of birth according to those we would expect to be in school at each of the School Censuses. This agreed with the **stage cohort** for 93.4% of records in P1 to S6. Those in a different **age cohort** were predominantly older than their expected stage (5.24%) rather than younger (0.26%). The percentage of older than expected pupils was most strongly predicted by their month of birth, with those born in January and February (so only just aged 4 yrs when due to start school) being those most likely to be older than their expected stage. The other factor influencing the percentage of older pupils was local authority, with higher percentages being found in the Highlands and Islands and in some cities. Details are in the Appendix Table A1.

We do not expect every pupil to appear in each year. There are 16 cohorts of children which can be linked to the SLS - 13 school years (P1 to P7 and S1 to S6) in 2007, augmented by 3 years of new entries in subsequent years - but only 13 of these cohorts would be expected to have a record in any given year, and only 10 would be expected to appear in all four years (see table 1).

Table 1 illustrates the structure of the data and gives the number of pupils in each of the 16 stage cohorts by the pattern of their later stages of education. Pupils with a first entry as adults (54 cases) or to a Special School (444 cases) are excluded from this table. We can see that the majority of pupils follow the expected pattern of stages over the four years, though the percentage leaving the system increases to around 5% at the upper primary years. These will include those moving to independent schools as well as those leaving Scotland. Table 1 also shows the stages for which we would expect to have attainment data from the SQA, see section 5 below.

2.2 Linkage from School Census to SLS data

A file of linked SLS numbers and SCNs was obtained from the SLSNO-SCN links that had been found in any of the four years of the School Census data. This file had one record for each unique SCN sent to NHSCR in any of the School Census years - a total of 48,233 records of which 42,270 (87.7%) had been matched successfully to an SLS member.

Some limited information was available from NHSCR on the reasons why matches were not found. The largest specific reason, accounting for 29% of missing matches, was where a record matched to more than one person at NHSCR. These cases would include same-sex multiple births. Perhaps those records where NHSCR can identify multiple births could be linked to the SLS and marked as a member of a pair of twins and both matches returned. For a further

[2] *There does not seem to be any distinction between S9 and AD. Both may have previous secondary records, so they have been grouped together in this report as "adults".*

Table 1. Structure of School Census Data by cohort

STAGE COHORT	-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13
2007 School Census				p1	p2	p3	p4	p5	p6	p7	s1	s2	s3	s4	s5	s6
2007 Exam results expected																
2008 School Census			p1	p2	p3	p4	p5	p6	p7	s1	s2	s3	s4	s5	s6	
2008 Exam results expected																
2009 School Census		p1	p2	p3	p4	p5	p6	p7	s1	s2	s3	s4	s5	s6		
2009 Exam results expected																
2010 School Census	p1	p2	p3	p4	p5	p6	p7	s1	s2	s3	s4	s5	s6			
2010 Exam results expected																

Number of pupils	cohort -2	cohort -1	cohort 0	cohort 1	cohort 2	cohort 3	cohort 4	cohort 5	cohort 6	cohort 7	cohort 8	cohort 9	cohort 10	cohort 11	cohort 12	cohort 13
All	3005	2878	2903	3020	2994	3001	2919	3050	3226	3206	3412	3261	3376	3367	2582	1535
subgroups by attendance pattern																
G1: All years as expected	3005	2769	2691	2721	2712	2737	2656	2745	2940	2918	3195					
G2: Special school after 2007		4	4	8	6	9	6	17	22	21	23					
G3: Enter after 2007		41	39	83	93	122	119	122	109	120	89					
G4: Leave before 2010		55	150	195	176	125	130	159	145	140	88					
G5: Irregular pattern		9	19	13	7	8	8	7	10	7	17					

Notes:

1) A cohort is defined by the stage of the pupil at their first entry. Thus a pupil with a first census record in 2007 and P1 will be in cohort 1, as will be a pupil with a first record in 2008 at P2. A pupil with a first census record in 2009 at P1 will be in cohort -1 and one in P3 will be in cohort 1.
2) Patterns of attendance are only given for stage cohorts that do not include any S5 to S6 as this would involve potential school leavers, which would require a different analysis.
3) Pupils entering in Special Schools (n=444) and those entering as adults (n= 54) are not included here.
4) G1 includes all pupils with patterns of stages like P1 P2 P3 P4 or P5 P6 P7 S1 for cohorts 1 to 9 or similar incomplete patterns for cohorts -2 to 0
5) G2 includes pupils who moved to special schools from mainstream after their first year.
6) G5 includes those skipping or repeating grades.

12% it was noted that the record was matched at NHSCR but not flagged as an SLS member. These records may link at a later year, particularly after the 2011 Census link is established in the SLS.

The linkage file was the final one after the 2010 data had been obtained. As records from each School Census are added, the linkage file can be amended so that a pupil's data from earlier years might be linked at a later year. An example of where this might arise would be a change of postcode that subsequently matched to NHSCR. After each linkage exercise a further check was made to ensure that all previous matches were valid. For example, a new pupil may have entered with an identical date of birth, gender and postcode to a previous record with a different SCN. This would cause a previously linked record to be identified as a duplicate, and thus put the validity of the previous match in doubt. All such records were coded as unmatched. At time of writing this process was only partially completed, but further changes are likely to involve very few pupils.

Table 2 gives the number of School Census records with SLS dates of birth received for each year, and the number and percentage of records that were successfully linked to an SLS member

Table 2. Numbers and percentages of School Census records linked to SLS

		Linked to SLS		Not linked to SLS	
School Census year	All records received[1]	n	%	n	%
2007	38,137	34,238	89.8%	3,899	10.2%
2008	37,481	34,015	90.8%	3,466	9.2%
2009	37,104	33,373	89.9%	3,731	10.1%
2010	37,022	32,849	88.7%	4,173	11.3%
Unique SCN any year	48,233	42,270	87.6%	5,963	12.4%

[1] *Within-year duplicates where a pupil was attending more than one school are counted only once.*

Table 3 presents data on the major factors from the School Census influencing the linkage rates. The most important factor is the number of School Census records available for linking. This is unsurprising since pupils with multiple records will have extra opportunities to link. The linkage rates for those at school in 2010 are expected to improve as School Census data for later years are added.

Crude matching rates by stage are highest (around 90%) for the stages P4 to S3, which are never part of incomplete cohorts (see Table 1); data not included in Table 3. After adjusting for this there was little variation in matching rate by stage. Other factors that influence the proportion of linked records are ethnic group and national identity. Non-white and Non-Scottish groups have lower linkage rates, perhaps as a result of their being less likely to be permanently resident in Scotland. Rates are also somewhat lower for those with free school meal registration reported at any of their School Census years. There are also variations by local authority with lower linkage rates in the East of Scotland compared to West, with Glasgow City being the West of Scotland exception.

Table 3. Proportion of pupils in School Census, by pupil and area characteristics and numbers and percentage with successful links to the SLS

	Total	Matched Number	Matched Percent
All records	48,233	42,270	87.64
Number of School Census records available for matching			
1	7,703	5,828	75.66
2	6,793	5,671	83.48
3	6,493	5,779	89.00
4	27,244	24,992	91.73
Ethnic background			
White - UK	42593	37804	88.76
Black - African	219	161	73.52
Black - Caribbean	12	10	83.33
Black - Other	49	31	63.27
Asian - Indian	238	193	81.09
Asian - Pakistani	720	601	83.47
Asian - Bangladeshi	34	29	85.29
Asian - Chinese	163	144	88.34
White - Other	1251	962	76.90
Not Disclosed	363	310	85.40
Mixed	426	355	83.33
Asian - Other	240	172	71.67
Travellers	65	40	61.54
Not Known	1552	1219	78.54
Other	308	239	77.60
National identity			
Scottish	34,188	30,844	90.22
English	1,249	845	67.65
Northern Irish	42	23	54.76
Welsh	47	31	65.96
British	7,434	6,285	84.54
Irish	46	34	73.91
Not Disclosed	921	816	88.60
Not Known	2,668	2,184	81.86
Other	1,638	1,208	73.75

	Total	Matched Number	Matched Percent
Local Authority *(ordered by % matched)*			
East Dunbartonshire	1118	1032	92.31
North Lanarkshire	3370	3078	91.34
East Lothian	952	861	90.44
North Ayrshire	1317	1189	90.28
Inverclyde	779	702	90.12
Renfrewshire	1715	1542	89.91
East Renfrewshire	1155	1035	89.61
Falkirk	1445	1286	89.00
Aberdeenshire	2417	2150	88.95
Stirling	873	776	88.89
South Ayrshire	1051	933	88.77
Midlothian	780	692	88.72
Fife	3539	3130	88.44
Dundee City	1271	1124	88.43
W Dunbartonshire	875	773	88.34
East Ayrshire	1264	1116	88.29
Perth & Kinross	1276	1124	88.09
Angus	1116	979	87.72
South Lanarkshire	3008	2638	87.70
West Lothian	1789	1565	87.48
Clackmannanshire	479	419	87.47
Edinburgh, City of	3234	2827	87.41
Aberdeen City	1593	1392	87.38
Dumfries & Galloway	1413	1225	86.69
Scottish Borders	1081	930	86.03
Argyll & Bute	815	695	85.28
Highland	2214	1871	84.51
Moray	857	710	82.85
Glasgow City	4666	3849	82.49
Shetland Islands	259	211	81.47
Orkney Islands	177	144	81.36

2.3 Variables available from the School Census

Table 4 gives the variables available from the linked School Census file, with notes. A few variables only used for administrative or linkage purposes have been removed from this list as they will not be of interest to SLS users. This table also gives information on the restrictions that are placed on the use of the data as follows:-

- **Restriction level 1:** Most highly disclosive, available only to selected staff at the SLS-DSU in preparing data for support officers. E.g. Data of birth of SLS member

- **Restriction level 2:** Available to support officers to prepare data for users, but not given in full detail to users. For example, Census Output Area can be used to link to characteristics of the area, but only the characteristics and not the output area code are supplied. In some circumstances, such as the need to identify grouping variables, unidentifiable codes for such a variable may be provided.
- **Restriction level 3:** Available to users for use in analyses, but no detailed output based on these variables is allowed to be taken out of the SLS-DSU safe setting or used in published reports.

Note that when dates have restriction levels 1 or 2, the year and month of the date may be supplied to the user. In some tables these are available as specific variables.

Table 4. Variables currently available from School Census data

Variable	Notes
SCN	Hashed Scottish Candidate Number
ADMISSIONDATE	Date of admission to school where census took place (restricted=2)
ATTENDANCESSU	Pupil attendance at Special Schools/Units. No of openings (half days) per week, range 0-10. Only 1.6% of matched records have >0, and 0.8% >0 and <10. But this is more than records 0.9% with a special education (SP) code (see above)
CENSUS_YEAR	Year in which School Census took place (2007-2010)
DOB	Date of birth (restricted=1)
ETHNICBGROUND	Ethnic background roughly census groups plus extra categories for travellers
FREESCHOOLMEALREG	Free school meal registered
FTENTS	FTE of other Non-teaching staff. This is a class-level variable, primary only.
GENDER	Student gender
IEPINDICATOR	Individual education plan. Applies to approx. 5% of pupils 2007-9, not available in 2010
LACODE	Local authority (Separate table has codes for these)
LEVELOFENGLISH	Level of English as an additional language. All years approx. 6% with English other than first language.
MAINDIFFICULTY	Main difficulty in learning. Only for those with record of needs (RON). 2007 only.
MAINSTREAMINT	Pupil attendance at mainstream schools. No of openings per week, range 0 to 10. Generally either (10-ATTENDANCESSU) or (9-ATTENDANCESSU), with the latter probably referring to schools that have only 9 openings per week – e.g. closing on Friday afternoons.
NATIONALIDENTITY	National Identity. Scottish/English/British/Welsh/Irish/NI/ other etc.
POSTCODE	Postcode (restricted=2)
REGCLASS	Class name. Registration class, school-specific. Primary schools only. (restricted=2)
RONINDICATOR	RON record of needs -indicator. 2007/2008 only numbers v small smaller in 2008 – being phased out?
SCN	Hashed Scottish Candidate Number. (restricted=1)
SEEDCODE	Hashed seed code (School identifier). There are 2619 unique codes and number of census records per school range from 1 to 467 with Q1, Q2, Q3 (14,36,70) (restricted=2)
STAGE	Student stage. Codes for P1-P7 S1-S6 adult (AD or S9) and Special Schools (SP).
TWOORMORETEACHERS	Identifies classes with two or more teachers present at all times. Primary schools only – not Special Schools.

2.4 Linkage rates from SLS to School Census

We can also investigate linkage rates for SLS members whom we would have expected to be in the School Census. We know that these will exclude pupils at schools that are not state-funded as those records were not available in the School Census.

We would expect SLS members with dates of birth from March 1990 to February 2006 to be in one of Cohorts -2 to 13, as shown in Table 1. The School Census data included some adults and some (very few) younger children who may have started school early. Excluding those with birthdates without that range we have 48,127 unique SCNs in the School Census, 42,198 of which were matched to an SLS member. However, the four oldest cohorts include pupils who would be in S5 or S6 at the time of one or more of the School Censuses, so some of the missed links may be due to these pupils having left school.

The total number of SLS records with birthdates in this range was 60,589. Children who have died or left Scotland need to be excluded from this total. Pupils were excluded if they had died or emigrated before September 2010 (n=392) or if their migration data indicated that they were out of Scotland for all or part of the time between August 2007 and September 2010. A more detailed analysis might be possible where the age of each pupil and his or her death or migration dates would be taken into account. However the migration data uses records as to when an SLS member registered or de-registered with the NHS in Scotland, so it may not coincide exactly with arrival or departure if (for example) a pupil starts school before they register with a GP, so there may be limitations as to what could be achieved. The simpler approach indicated that 7,528 SLS members were not alive in Scotland during the full range of dates when they could have completed the School Census. Despite this, 1,264 of these matched to the School Census data, but to calculate linkage rates, we have excluded all cases not in Scotland according to this approach. This gave 53,061 SLS records that we might have expected to link with School Census records, of which 40,931 had a School Census record. Thus the overall linkage rate was 71.1%. However, this range of ages includes pupils up to S6, some of who will have left school by the dates of the School Censuses. We cannot define Stage Cohorts for all the SLS records because we do not know the stages for those who did not match to the School Census. However, we can define Age Cohorts, to match each stage, as discussed in section 2.1, according to the age criteria for starting and leaving school.

Table 5 and Figure 1 give linkage rates by age cohort whether the SLS member was captured at the 2001 Census. For those age cohorts from 0 to 11 (notation as in Table 1) the linkage rates were between 80 and 90%, and higher for those captured in the 2001 census. The rates for cohorts -2 to 0 (Table 1 notation) will be expected to improve with further School Census years.

Figure 1. Linkage rates (%) by age cohort (see table 1)

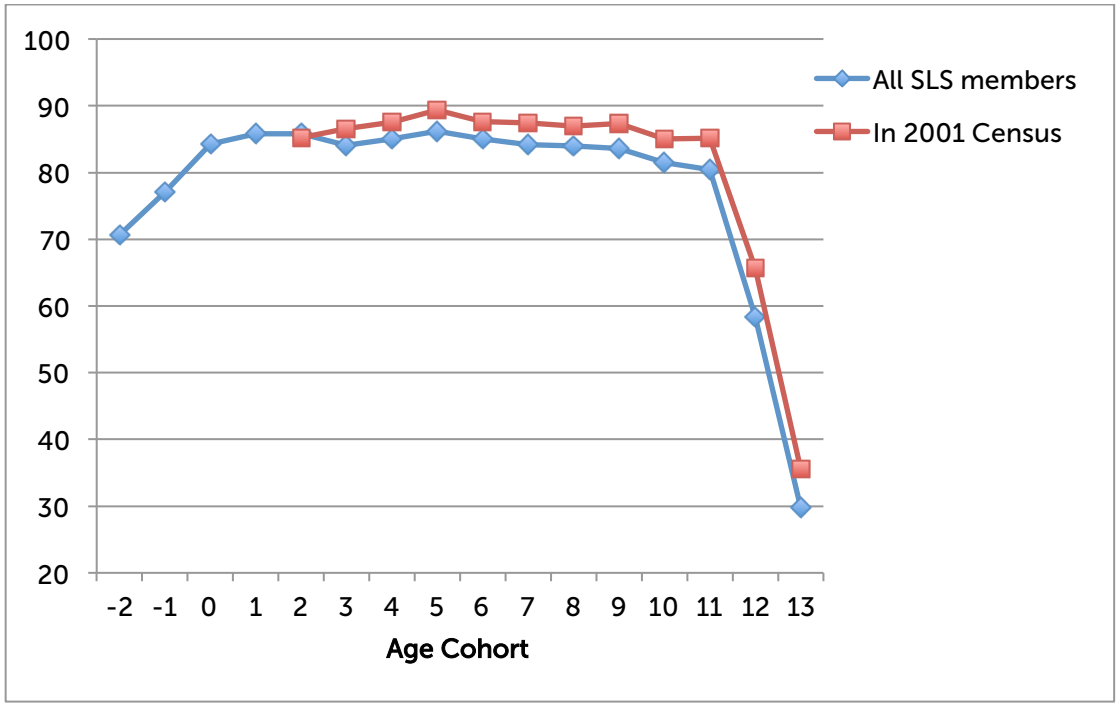

Table 5. Linkage rates from SLS to School Census by age cohort and whether present in 2001 Census

		Cohort expected defined by age group from SLS																
		-2	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	All
All	Total	3057	2899	2920	2992	3019	3022	2991	3122	3350	3337	3550	3490	3606	3633	3936	4137	53061
	% in School Census	71.0	77.3	84.6	86.1	86.2	84.4	85.6	86.74	85.4	84.8	84.6	84.1	82.0	80.8	58.6	29.7	77.1
In 2001 Census	Total	.	.	.	.	483	2473	2440	2542	2713	2730	3042	2924	3007	3038	3155	3204	31751
	% in School Census	.	.	.	.	85.3	86.7	87.7	89.5	87.7	87.5	86.9	87.4	85.0	85.2	65.5	35.5	79.6
Not in 2001 Census but born before	Total	.	.	.	.	115	549	551	580	637	607	508	566	599	595	781	933	7021
	% in School Census	.	.	.	.	80.0	74.3	76.0	74.8	75.7	72.5	70.9	67.0	67.1	58.3	30.5	9.6	58.3
Born after 2001 Census	Total	3057	2899	2920	2992	2421	.	.	.	.	.	.	.	.	.	.	.	14289
	% in School Census	71.0	77.3	84.6	86.1	86.7	.	.	.	.	.	.	.	.	.	.	.	80.9

For those SLS members present at the 2001 Census and not in the last two cohorts, Table 6 gives details of factors influencing the linkage rates. The results are consistent with what we would expect from two mechanisms:

1. No school Census records from independent schools, leading to lower rates in Edinburgh and in more advantaged households
2. Lower linkage rates for those who are not permanently in Scotland – lower rates for those born elsewhere.

Table 6. SLS member in 2001 Census within cohorts 2 to 11, proportion matching to School Census by 2001 Census characteristics

	SLS members	
	Total	Percent matched
All records	25280	86.9
Cars available to household		
None	5256	87.6
One	11151	89.3
Two	7640	84.1
Three or more	756	77.2
Ethnic background		
White Scottish	21252	87.8
Other white	916	78.8
South Asian	359	82.7
Black African/Caribbean	34	85.3
Chinese	83	75.9
Mixed/Other	139	79.9
Country of birth		
Scotland	23774	87.4
Other UK and Eire	732	81.8
elsewhere	774	77.3
Household tenure		
Owned: Owns outright	1613	79.4
Owned w/mortgage	14260	87.6
Social rented	6425	88.3
Private rented	1317	83.8
Head of household socio-economic position		
Higher prof & managerial	2907	79.4
Lower prof & managerial	5262	85.9
Lower tech/intermediate	6902	89.4
Routine/Semi routine	6614	89.9
Never worked	552	83.9
Long-term unemployed	317	88.0
Full-time students	246	86.2

	SLS members	
	Total	Percent matched
Local Authority *(ordered by % matched)*		
Edinburgh	1862	78.1
East Renfrewshire	539	83.1
Argyll & Bute	422	83.2
Glasgow	2617	83.5
East Dunbartonshire	596	84.4
Aberdeen City	864	84.8
Stirling	411	85.4
Perth & Kinross	649	85.7
West Dunbartonshire	464	86.0
Clackmannanshire	254	86.6
Renfrewshire	966	87.2
South Lanarkshire	1487	87.4
East Lothian	515	87.6
Midlothian	430	87.7
Dundee City	660	87.7
Angus	568	88.0
South Ayrshire	561	88.1
West Lothian	953	88.1
Falkirk	768	88.2
Moray	431	88.2
Aberdeenshire	1234	88.2
Inverclyde	452	88.5
Highland	1104	88.5
Orkney Islands	90	88.9
Borders	567	89.4
East Ayrshire	656	90.2
Western Isles	123	90.2
North Lanarkshire	1755	90.3
North Ayrshire	700	90.4
Dumfries & Galloway	699	90.6
Fife	1762	91.5
Shetland Islands	121	95.0

3 Attendance data (Table H02)

3.1 Linkage of attendance data to School Census

For those pupils in the School Census, attendance data corresponding to the year of the census was linked via their SCN. A total of 154,496 attendance records were obtained for the four years. Note that the attendance data were collected at the end of the school year of the School Census and the collection year (at ScotXed) was thus one year later (2008-2011). When a pupil moved schools during the year, they had a record for each school for that year but a School Census record only for the year they were at that school on the census date.

The attendance records were merged with the School Census by SCN and year. The attendance data did not include the school SEEDCODE, so it was impossible to link with this. Thus, to examine linkage rates, a single School Census record and a single attendance record was taken for each pupil and year, ignoring census records for those attending more than one school.

Table 7. Numbers of linked records for attendance data merged with School Census records, one record per SCN number in each source

All records	All years	2007	2008	2009	2010
		n	n	n	n
Both census and attendance	153401	38997	38385	38051	37968
Only census	450	168	95	95	92
Only attendance	1095	367	236	248	244

It is important to remember that attendance data are only available for pupils with at least one School Census record.

A total of 450 records had School Census data for a year but no attendance records for the corresponding year. The missing attendance was most often at the end of a pupil's sequence of years and disproportionately at the upper secondary classes. These may be pupils who were expected to attend but had in fact left school. Those without attendance records included the small number of pupils coded as ADULTS or S9. Others may be due to clerical errors. All such records were deleted from the following analyses and it would be recommended that they should also be removed from the School Census. A further 245 attendance records recorded zero attendance for the pupil in that year; these records were also removed from the analyses below.

Each SCN on the attendance record had corresponding School Census data for at least one of the four years, but 1,095 records had no census data for a census year for which they had attendances. These might be pupils who arrived in Scotland later in the year or transferred from another education sector. Their School Census data could be recovered from other years.

This left 154,251 attendance records corresponding to 150,146 individual pupil/years. The majority (97.4%) of pupils attended a single school in the year, while the remainder (3,859) attended from 2 to 5 schools. It would have been helpful to have the seed codes attached to the attendance records as well as to

the School Census data in order to identify which of the attendance records corresponded to the school where the pupil was recorded in the Census. Potentially, even without seed codes, the availability of dates of admission to each school may enable this to be reconstructed.

3.2 Variables available for attendance data

Table 8 lists variables available from the attendance records along with some comments and table 9 gives summaries of absence and lateness rates.

Table 8. Variables available in the attendance data

Variable	Label *(plus notes)*
SCN	Hashed Scottish Candidate Number
GENDER	Student gender *Agreed with census for all but 14 records*
STAGE	Student stage *Coded as for School Census (Table 4) agrees with school census for majority of cases, with differences most often just one stage*
POSATT	Possible half-day attendances to date *Number of half days when the school was open during the period of the pupil's attendance*
ATTENDANCE	Attendance *Number of half days that the pupil attended*
WORKEXP	Work experience *Number of half days*
LATE1	Arrives before 50% of opening *Number of half days that pupil arrived late but before half of the session was over*
LATE2	Arrives after 50% of opening *Number of half days that pupil arrived late but after half of the session was over*
SICKWITHEDPROV	Sickness with educational provision *Number of half days*
SICKNOEDPROV	Sickness with no education provision *Number of half days*
FAMHOLAUTH	Family holidays authorised by school *Number of half days*
FAMHOLUNAUTH	Family holidays not authorised by school *Number of half days*
EXCEPDOMCIRCAUTH	Exceptional domestic circumstances (authorised) *Number of half days*
EXCEPDOMCIRCUNAUTH	Exceptional domestic circumstances (unauthorised) *
TRUANCY	Truancy, including unexplained absence *Number of half days*
TEMPEXCL	Temporary exclusion *Number of half days* *This agrees fairly well with the exclusion data below. 3,906 records have both TEMPEXCL=1 and the exclusion records for the year, 9 have TEMPEXCL=1 but no exclusion records and 12 have the opposite*
OTHERAUTH	Other authorised absence *Number of half days*
OTHERUNAUTH	Other unauthorised absence *Number of half days*

NOTE: None of the variables in this table are subject to any restrictions (see notes before Table 4.

Table 9. Absence rates for all records over all years. Ordered by most likely reasons for absence

(For codes see Table 8)	Average absence rates (%)	Percentage of pupils ever absent for given reason
Absence (any reason)*	**9.15**	**95.70**
SICKNOEDPROV	3.50	72.64
OTHERAUTH	1.43	38.12
TRUANCY	1.21	28.97
FAMHOLUNAUTH	0.43	17.47
WORKEXP	0.20	6.85
OTHERUNAUTH	0.15	5.08
EXCEPDOMCIRCAUTH	0.13	6.85
FAMHOLAUTH	0.10	4.06
TEMPEXCL	0.09	2.56
EXCEPDOMCIRCUNAUTH	0.04	2.04
LATE2	0.02	3.80
SICKWITHEDPROV	0.02	0.21
	Average rate of lateness (%)	Percentage of pupils ever late
LATE1	1.77	56.75
LATE2	0.02	3.80

* 1.82% of absences unaccounted for

3.3 Exclusion data (Table H03)

Data indicating when a pupil was excluded from school were provided, comprising 9,347 records of exclusion episodes. Pupils often had more than one episode in a year, counting only one episode per pupil/year gave a total of 3,918 pupil/years affected. Also pupils often had records in more than one year and 2,688 individual pupils contributed to the exclusion data. Numbers and % exclusions are shown in Table 10, exclusions by stage in Table 11, and variables available are given in Table 12.

Table 10. Number and percentage of pupils with exclusions

Number of exclusions	All years combined	2007	2008	2009	2010
1	1357	642	574	520	485
2-4	745	342	297	266	269
5-9	358	128	100	90	86
10-19	172	25	27	29	18
20-100+	56	4	6	4	6
Total	2,688	1,141	1,004	909	864
All pupils		38483	37709	37346	37261
Exclusion %		2.96	2.66	2.43	2.32

Table 11. Number and percent of pupils excluded per year by stage, averaged over 4 years. A pupil excluded on one or more occasions is counted only once.

	P1	P2	P3	P4	P5	P6	P7	S1	S2	S3	S4	S5	S6	Special
Number	15	24	53	60	103	132	219	477	752	1006	788	132	38	1314
% excluded	0.13	0.21	0.46	0.52	0.90	1.13	1.84	3.88	5.94	7.81	6.07	1.26	0.56	8.30

Rates are highest in secondary years S2 to S4 and particularly high in children in Special Schools.

Table 12. Variables available from the exclusion records

Variable	Label *(plus notes)*
SCN	Hashed Scottish Candidate Number
CENSUS_YEAR	Year in which School Census took place.
GENDER	Student gender
STAGE	Student stage
INCIDENTTYPE	Incident type
REMFROMREG	Flag to indicate whether student was removed from the register
STARTDATE	Date exclusion from school started (restriction level=2)
FINISHDATE	Date exclusion from school ended (restriction level=2)
APPEAL	Flag to indicate whether the decision to exclude was appealed against by the parent or pupil
NOPROVDAYS	Records the number of half days absence due to temporary exclusion with no adequate alternative education provision provided
INTALTPROV	Record the nature of the main alternative provision of education used during a temporary exclusion

NOTE: For definition of exclusion level, see text above table 4. Although STARTDATE and FINISHDATE will not be available to users, the year and month of STARTDATE can be supplied for each exclusion record along with the number of days per exclusion.

Table 13 lists the most frequently cited reasons for exclusion. Unlike in Table 11, each episode of exclusion, rather than each individual pupil, is counted in this table.

Table 13. Most frequent reasons for exclusion by number of exclusions

Reason for exclusion for incidents with >=50 exclusions	Number of exclusions
General or persistent disobedience	2315
Verbal abuse of staff	1922
Insolent or offensive behaviour	1191
Physical assault with no weapon against pupil	930
Fighting	687
Damage to school property	294
Verbal abuse of pupil	292
Refusal to attend class	283
Physical assault with no weapon against staff	214
Threat of physical violence, no weapon, against staff	104
Threat of physical violence, no weapon, against pupil	100
Threat to school property	79
Substance misuse – alcohol	62
Substance misuse – not alcohol	62
Physical assault using improvised weapon against pupil	59
Threat of physical violence using weapon or improvised weapon, against pupil	50
Other reason (not detailed)	625
Other (see list on RHS)	368

Other reasons with smaller numbers
Physical assault using weapon against pupil
Fire raising
Physical assault using improvised weapon against staff
Threat of physical violence using weapon or improvised weapon, against staff
Theft from staff
Spitting
Theft from pupil
Damage to personal property of pupil
Physical assault using weapon against staff
Malicious communications against staff
Malicious communications against pupil
Indecent exposure
Damage to personal property of staff
Threat to personal property against staff
Parental non-cooperation
Slander and libel (incl. website) against staff
Sustained peer exclusion for the purpose of causing significant distress
Threat to personal property against pupil
Threat of sexual violence against pupil
Threat of sexual violence against staff
Slander and libel (incl. website) against pupil
Extortion from pupil

4 Data from the Scottish Qualifications Authority

4.1 Overview

Scottish Qualifications Authority (SQA) data were made available from ScotXed for all qualifications for which pupils were submitted in the years 2007 to 2010. Linkage to the SLS was via the SCN, which had been linked to the SLS by the procedures described above. The data analysed here consisted of records which had linked to the School Census records in at least one of the Census years.

Figure 2: Structure of SQA data

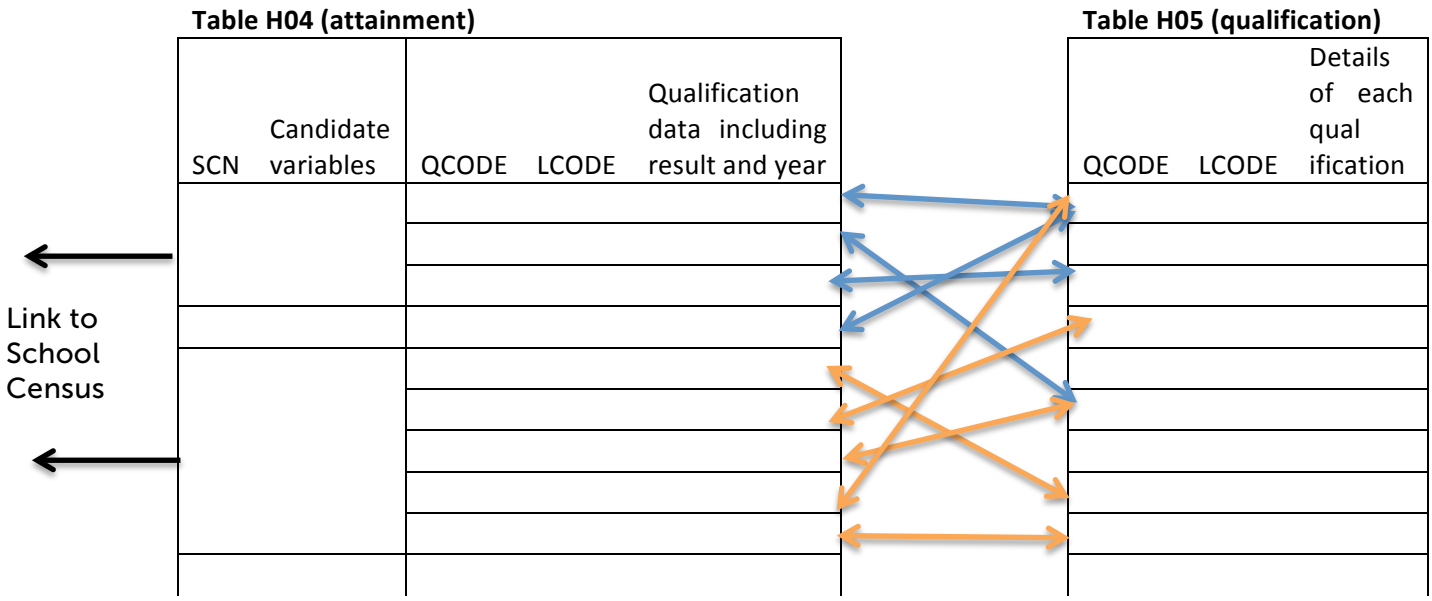

Figure 2 illustrates the structure of the data available to users. Table H04 (attainment) contains a record for every qualification for which a candidate was registered in any of the four years (2007-2011). There are currently no candidate-level variables (apart from the SCN) available to users, though DOB (date of birth) GENDER and POSTCODE were supplied on the original data file and are available to SLS-DSU staff. These data were checked against the corresponding variables from the School Census.

For those pupils who were linked to the SLS via their SCN, there were 27 individuals who had different dates of birth in the two sources. A total of 22 individuals had a different gender in the SQA data and the School Census, 13 of those were among the 27 with discrepant dates of birth, leaving only 9 discrepancies on GENDER alone from the remaining 15,533 candidates (0.06%). Different postcodes were found for 945 individuals (6%), including the vast majority of those with discrepant dates of birth, though a different postcode does not imply a different individual. Further investigation (see Table 16 below) found that the 27 cases with discrepant dates of birth were associated with mismatches between the stage on the School Census and the SQA data. Thus attainment data from these 27 pupils has been excluded from the tables below.

The three variables DOB, GENDER and POSTCODE were used by NHSCR to link the School Census to the SLS data. Thus, as well as checking existing links, it

would seem to be possible to link the attainment data directly to the SLS in the same manner as was done for the School Census. This would allow SQA data for pupils from private schools to be linked to the SLS. The complete set of attainment data are currently available at the SLS-DSU, but they are not included in the data analysed for this report which only includes those who have linked to the School Census data for the LA schools.

The variables QCODE and LCODE were used to link each of the attainment records to one of the records in Table H05, which gives details of each qualification.

4.2 Attainment data (Table H04)

The individual attainment data (Table H04) consists of 460,437 records for 32,345 candidate/years. Candidates can have many qualifications per year, the median number being 9.

Table 14 lists the variables available for each qualification. The variable SEEDCODE is the identifier for the centre for the individual qualification. There can be more than one such code for a pupil in any year. Pupils had from 1 to 3 such codes, although the majority have qualifications from just one centre. Each centre code can be classified according to the type of funding. A separate table is available to SLS-DSU staff to enable this information to be provided to users.

Table 14. Variables available for attainment (table H04)

Variable	Label
SCN	Hashed Scottish Candidate Number
ESTAGE	Stage of candidate
ESTATUS	Status of entry – mostly "certificated", but also smaller number of codes such as "withdrawn" and "awaiting result"
LCODE	Level code
QCODE	Qualification code
RDATE	Result date (restriction level =2)
RESULT	Result
SEEDCODE	Hashed seed code of school or centre identifier for qualification (restriction level = 2)

NOTE: For definition of exclusion level, see text above table 4.

In Table 15 the candidates for each year have been classified by the combination of the centres for the qualifications in that year and by whether their data linked to the School Census data in that year. The link may have been established in a different year from the qualifications. We can see that pupils taking qualifications at LA schools and those who take some at LA schools and some at FE colleges have very high linkage rates. As would be expected, linkage rates are lower for those who do not take any qualifications in a school centre in that year. The total number of records from independent schools are few because the data analysed here relates only to pupils who have attended a LA school in at least one of the years 2007-2010. The 108 with qualifications from Independent schools are most likely to have moved from LA schools to Independent schools in previous years. A further SEEDCODE could be obtained from the SQA via ScotXed that would give the establishment where each candidate is based. This would be a useful check on the accuracy of these data.

Table 15: Centres where candidates exams were reported (all years combined one record per candidate/year) by whether SQA data could be linked to an SCN number via any of their School Census records

	All	linked	% linked	Not linked
LA school(s)*	29433	29374	99.8	59
LA and FE college(s) **	1493	1485	99.5	8
FE College(s) only **	1164	304	26.1	860
Grant aided school ***	70	70	100.0	0
Independent school(s)	108	29	26.9	79

** Includes a very small number of records from centres classified as "social work"*
*** Incudes codes 9 (FE/HE/SQA) and 10 (FE)*
**** One grant-aided school, which appears in the School Census for historical reasons*

The variable ESTAGE in the SQA data had codes for Secondary years, workplace learning, tertiary education and adults. The stage may be different for the same pupil taking qualifications in more than one centre in a year. Where this was found to be the case, the stage corresponding to a school year rather than workplace or tertiary education was selected. The agreement between this and the variable STAGE from the School Census for all four years combined is given in Table 16. Agreement was reasonable for those with matched dates of birth, but very poor for the 75 records where dates of birth did not match the School Census data. Thus it is suggested that these records are mis-matched on SCN and the attainment data from these 27 cases should be unlinked to the School Census. They are excluded from the analyses below.

Table 16. Comparison of Stage information from School Census and SQA data. The main figure excludes records from the 27 cases where dates of birth did not match, the count of which is shown in brackets.

Totals: matched date of birth (unmatched date of birth)		School Census					
		Primary	S1-S3	S4	S5	S6	Special schools
SQA data	S1-S3	1 (4)	3686 (1)	39	15	3	112 (2)
	S4	0 (12)	64 (3)	12474 (8)	18	8	87 (1)
	S5	0 (20)	1 (2)	64 (1)	8409 (2)	22	52
	S6	0 (15)	1 (5)	3	22	5722	39
	Adult Returner	0 (1)	13	20	8	28	49
	Workplace	0	4	1	3	1	0
	Tertiary education	29	99	18	90	30	12

Table 16 gives the percentage of pupils in each year with attainment data. We can see that very high percentages of School Census records in S4 to S6 have linked attainment data. The raw percentage for Special Schools is misleading because the denominator includes all pupils in Special Schools including those in primary school. Using the expected stage of education derived from the age of the pupil gives much higher rates for those expected to be in S3 (50.3%), S4 (63.4%), S5 (56.2%) and S6 or subsequent years (49.5%).

Table 17. Linkage to School Census records. Number with qualifications in year (N) and N as % of all School Census Records. Records with discrepant dates of birth from the two sources are excluded

	Primary		S1-S3		S4		S5		S6		Special Schools	
Year	N	%	N	%	N	%	N	%	N	%	N	%
2007	10	0.05	1036	10.58	3214	96.98	2076	80.68	1346	87.69	92	24.93
2008	8	0.04	1010	10.58	3150	96.74	2110	83.17	1382	90.15	83	21.50
2009	7	0.04	975	10.35	3068	97.30	2192	85.76	1498	90.73	93	25.41
2010	5	0.03	847	9.41	3187	97.31	2187	85.30	1588	89.87	89	24.18

4.3 Qualification data (Table H05)

The associated table of qualifications (H05) gives details of every qualification. The variables available are listed in Table 18. The variables LCODE and CREDITVAL refer to the Scottish Qualifications Framework (www.scqf.org.uk). The variable QCODE identifies each course and the labels for each code can be examined in the SLS data dictionary (sls.lscs.ac.uk/variables/). The variable QTITLE is, in almost all cases, the same as the label provided in the data dictionary, with discrepancies due to (e.g.) abbreviations of terms.

The file provided contains records for 2,973 individual qualifications. However, this was reduced to 2,818 when records with repeated values of QCODE/LCODE were removed. These appear to be records where qualification details changed between different years. The majority of these duplicated records were due to a change in the code used for "Standard Grade" level, and other differences between duplicated records related only to the end date of the course. After removing these duplicated records, and retaining the most recent record, the qualification file was linked to the attainment data on the common variables QCODE and LCODE.

Table 18: Variables in Table H05 Qualification data

Variable	Description
CREDITVAL	Credit value of course/qualification
EDATE	Course end date
LCODE	Level code
QCODE	Qualification code
QTITLE	Name of course/qualification
QTYPE	Type of course/qualification
RECID	Unique record identifier
SDATE	Course start date

Table 19 gives a summary of all qualifications for candidates who were successfully linked to the SLS, broken down by level of qualification and result. This table summarises overall qualifications without grouping them by candidate. Longitudinal analyses will permit a full qualification history of each pupil to be constructed, but such detailed analyses of these data have not been carried out in this report. In future it would be helpful for computer code to compute a Tariff Score[3] for each candidate to be made available to support officers.

[3] *For details see https://pubxed.scotxed.net/stacshelp/reference/ups.htm*

Table 19: Qualification entries from Candidates entered in years 2007-2010 and linked to SLS data, total numbers by level of qualification and percentages of each level by stage of candidate and result recorded.

		Access 1	Access 2	Access 3	Standard Grade	Intermediate 1	Intermediate 2	Higher[1]	Advanced Higher	Scottish Baccalaureate
	Total entries	907	547	6372	270,725	26,069	45,706	61,718	6,356	25
Percentages entered at each stage of candidate										
Stage	S1-S3	25.0	42.0	20.2	6.0	10.4	2.1	0.1	0.1	0.0
	S4	14.2	38.2	67.2	93.4	58.6	30.6	0.5	0.3	0.0
	S5	10.5	8.4	10.2	0.4	23.9	52.5	62.1	1.0	0.0
	S6	10.8	4.6	1.6	0.0	3.0	12.3	33.2	97.5	92.0
	Workplace	22.5	1.1	0.3	0.2	0.2	0.1	0.2	0.5	0.0
	Adult returner	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
	Tertiary education	17.0	5.7	0.5	0.0	3.9	2.3	3.8	0.7	8.0
Percentage of entries by result										
Result	Withdrawn or no result[2]	1.7	35.4	8.8	0.8	20.3	14.7	16.7	13.9	16.0
	Grades A to C or pass[3]	97.0	64.6	91.2	97.5	73.7	78.8	74.3	77.4	68.0
	Grade D or F[4]	1.3	0.0	0.0	1.7	5.9	6.6	9.0	8.7	16.0

Notes:

1 *Higher (both Higher Still and 'Old' Higher)*

2 *Codes 8, 9, 999. E, W, 94-96, 991-999*

3 *Codes 1-6, 87, A to C ,P*

4 *Codes 7,77, F, D, 800*

5 Recommendations

In this section we bring together the suggestions that have arisen throughout the analyses presented above as to how the Education data available to the SLS-DSU might be improved.

5.1 Drop records for adults from the files available to SLS users

Codes S9 and AD are used for adults who have been taking qualifications in schools. No attendance or exclusion data are available for them, although some have attainment data. These records are unlikely ever to be used in any analyses since they will have no denominator available to calculate rates. Most adults will take their qualifications via Further Education Colleges, and should such data be made available to the SLS-DSU then the small number who are assessed in schools could be added to this.

5.2 Attempt to obtain data from independent schools

Independent schools do not provide individual pupil data to ScotXed, although some limited summary data are available. Thus they probably account for a substantial number of the SLS records who fail to match to the school Census data, and hence, via our linkage methods, to attainment data. There would appear to be two ways in which this deficiency might be remedied.

- It might be possible to obtain some data equivalent to the School Census data from private schools in Scotland.
- The data on dates of birth, postcode and gender on the SQA data for those who do not match to the SLS could be sent to NHSCR to obtain a direct link from the SLS to attainment. We currently hold these at the SLS-DSU although they were not analysed in the present paper. This would link any private school pupil who sat one or more SQA qualification.

5.3 Other variables that could be obtained from ScotXed

School Census data

Further variables that could be requested:-

- Student Looked after – available for all years
- Main home language – for all years
- Other home language – available for all years
- Gaelic education – available for all years
- Student need – category and type – 2009, 2010 as well as any other associated variables. These are a replacement for RON, IEP and MAINDIFFICULTY variables in previous years

Attendance data

- It would be helpful to get the SEED code for the attendance data so as to identify patterns of changing school, and to know which attendance records match with the School Census.

SQA data

- SEED code for both centre where exam taken and location of student
- The qualifications table (H05) might have the year added so as to distinguish between the properties of qualifications in different years.

5.4 Further derived variables

- Since the full School Census data have been made available to the SLS-DSU, it should be possible to derive class-level variables to be added to the School Census data. Suggested variables would be the class size, class size broken down by stage (this will identify composite classes) and perhaps class size broken down by pupil gender.
- From the Attainment data users might find it helpful to obtain the UCAS Scottish Tariff point score (or the Unified points score) used for entry to HE courses. If SAS code (or code in another programming language) could be made available from ScotXed or the Scottish Government, Education, that could be extremely helpful to us.

5.5 Improvements to linkage

- The final checking for duplicate counts needs to be completed. It is suggested that pupils with a unique match to date of birth, gender and postcode in any Census year should be considered as matched, but those without such a match should be considered unmatched. Such a procedure could be run on the combined data.
- SQA data dates of birth could be used as a confirmation of a correct linkage between qualifications and any SQA records who fail to match on date of birth should not be linked.
- In future years it might be possible to break the duplicate ties between same-sex multiple births. Since NHSCR and ScotXed both hold first names, perhaps some non-disclosive data from them could be used to break the ties – for example the first and 3rd letters of each child's name, or the first or second letter and the number of letters in the name.

5.6 Further data collections which might be available from ScotXed

- School leavers and school leavers' destinations. Data are collected on summer and Christmas leavers each year.[4]
- In addition, Careers Scotland collects data on the destinations of school leavers in the September after pupils have left school and in the following March. This survey has been successfully linked to data held at ScotXed (School Census and leavers data from 2007 onwards).[5]
- Looked after children, return available from 2009 includes SCN along with details of support needs and other things.[6]

[4] *see https://www.scotxed.net/ScotXed%20Web%20Parts/School%20Leavers.aspx*
[5] *For details see http://www.scotland.gov.uk/Publications/2007/12/07093501/26*
[6] *https://www.scotxed.net/Data%20Collection%20Pages%20for%20all%20Statistics%20Surveys/Looked%20After%20Children%204.aspx*

6 Appendix

Table A1. Factors influencing the percentage of pupils who are older or younger than expected for their stage.

Table A1.1. Older and younger by stage

School Census Stage	Age expected		Older		Younger	
	number	%	number	%	number	%
P1	10,875	94.20	662	5.73	6	0.05
P2	10,632	93.67	708	6.24	10	0.09
P3	10,623	93.37	738	6.49	16	0.14
P4	10,654	93.25	753	6.59	18	0.16
P5	10,726	93.58	717	6.26	19	0.17
P6	11,000	94.08	675	5.77	17	0.15
P7	11,240	94.66	617	5.20	17	0.14
S1	11,665	94.83	617	5.02	19	0.15
S2	12,005	95.13	586	4.64	28	0.22
S3	12,205	94.58	651	5.04	48	0.37
S4	12,409	95.18	579	4.44	50	0.38
S5	9,825	95.68	374	3.64	68	0.66
S6	6,259	95.34	190	2.89	72	1.10
All stages	**140,118**	**93.35**	**7,867**	**5.24**	**388**	**0.26**

Table A1.2. Older by month of birth

Month of birth	Age expected		Older	
	number	%	number	%
March	14,207	97.23	75	0.51
April	14,518	97.71	117	0.79
May	7,028	97.94	69	0.96
June	14,659	97.32	233	1.55
July	22,017	97.49	240	1.06
August	14,278	97.53	201	1.37
September	22,923	95.61	731	3.05
October	7,131	93.83	389	5.12
November	7,128	91.80	542	6.98
December	6,278	86.39	887	12.21
January	5,234	71.87	1,931	26.51
February	4,717	64.80	2,452	33.69

Table A1.3. Older by Local Authority

	Age expected		Older	
School Census Stage	number	%	number	%
Shetland Islands	651	81.58	133	16.67
Orkney Islands	478	88.68	61	11.32
Eilean Siar	707	88.49	84	10.51
Aberdeenshire	6,658	89.50	720	9.68
Highland	6,229	89.82	647	9.33
Edinburgh, City of	8,806	90.01	794	8.12
Dundee City	3,587	91.62	311	7.94
Angus	3,201	92.30	255	7.35
Scottish Borders	3,125	91.99	247	7.27
East Lothian	2,738	92.59	214	7.24
Jordanhill School - Grant Aided	210	92.92	16	7.08
Aberdeen City	4,373	90.52	324	6.71
West Lothian	5,273	92.44	365	6.40
Clackmannanshire	1,383	93.07	84	5.65
Midlothian	2,173	92.63	132	5.63
Perth & Kinross	3,670	93.86	216	5.52
West Dunbartonshire	2,566	92.70	152	5.49
Moray	2,488	94.06	141	5.33
Dumfries & Galloway	4,170	94.32	230	5.20
Fife	10,373	94.32	532	4.84
Inverclyde	2,293	94.28	112	4.61
Glasgow City	13,178	92.91	547	3.86
Stirling	2,622	95.66	102	3.72
Argyll & Bute	2,432	95.64	92	3.62
North Lanarkshire	10,010	94.58	357	3.37
Falkirk	4,345	95.56	139	3.06
Renfrewshire	5,122	94.75	159	2.94
South Lanarkshire	8,984	95.55	257	2.73
East Dunbartonshire	3,555	96.45	99	2.69
East Renfrewshire	3,597	96.43	100	2.68
North Ayrshire	4,013	96.19	100	2.40
East Ayrshire	3,869	96.65	90	2.25
South Ayrshire	3,239	97.97	55	1.66