The Scottish Government

Meeting the Needs for Longitudinal Data on Youth Transitions in Scotland – An Options Appraisal

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Meeting the Needs for Longitudinal Data on Youth Transitions in Scotland - An Options Appraisal

A joint report to the Scottish Government Schools Directorate and Lifelong Learning Directorate

by

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CONTENTS

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The Scottish Government is making this research report available online in order to provide access to its contents for those interested in the subject.

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EXECUTIVE SUMMARY

Chapter One   Introduction: Aims and Objectives of the Options Appraisal

1.   The Scottish Government Schools Directorate and Lifelong Learning Directorate commissioned the Centre for Educational Sociology and BMRB to carry out an appraisal of the options for meeting the needs for longitudinal data on young people's experiences in secondary school and subsequent transitions to further/higher education, training and employment.

2.   The Scottish Government has funded the Scottish School Leavers Survey (SSLS) since the mid 1970s. The SSLS is a longitudinal study of nationally representative samples of young people in Scotland. The SSLS has given Scotland an enviable resource for the longitudinal study of young people's transitions, but young people's transitions, survey methodology and the policy environment have all changed since its basic design was developed. In recent years the SSLS has also suffered from declining response rates with consequent issues of bias and small numbers. The most recent contract for the SSLS ended in 2007 and it was seen as timely to review how the evidence needs on young people's transitions could best be met in the future.

3.   The options appraisal was therefore commissioned to undertake a critical examination of a range of options on how to meet the needs for longitudinal data on young people and make recommendations on any future longitudinal study. Early in the project it was agreed with the Scottish Government that the project would focus on developing detailed options.

4.   This options appraisal has included: consultation with external stakeholders and the Scottish Government; investigation of administrative data; investigation of longitudinal studies; a review of the latest survey design literature, and a focused review of the youth transitions literature. Based on these activities, options for longitudinal data collection, analysis and reporting study were developed, assessed and costed.

Chapter Two   Background: Longitudinal Studies, Young People's Transitions and the Policy Context

5.   Longitudinal studies are concerned with the behaviour of individuals over time, and offer a way to analyse change and dynamic behaviour. Repeated contacts enable analysis of individual's transitions, including their movement in and out of education, employment and unemployment, and capture the sequential ordering of events and influences in their lives.

6.   Longitudinal studies are important for policy analysis because they document change over time, and also because they enable the influence of policies and practice to be isolated from confounding influences such as social background and context.

7.   While a longitudinal study offers the best approach to understanding young people's transitions, it poses several challenges, in particular, the potential for the attrition of participants over the course of the study. Other issues include cost and the need for a long-term commitment to funding.

8.   Young people's transitions are becoming more protracted, more diverse and more complex in a context where pathways in education and in the labour market are becoming more flexible. Initial labour market destination is no longer an adequate indicator of their longer term position in the labour market, and labour market careers must be followed for a number of years before stable 'outcomes' of different educational pathways can be observed.

In addition, understanding young people's pathways requires longitudinal data on 'soft skills', their goals and motivations, and on their perceptions of the available educational and labour market options.

9.   There is increasing polarisation between those who remain in education and gain qualifications and those who leave school as soon as they can. Poorly qualified young people run a high risk of marginalisation in the labour market and in society. The concept of young people not in education, employment or training has gained prominence over the last two decades as a key indicator of an unsuccessful post-school transition. The antecedents of this are varied but include young people's earlier experiences of education and previous transitions such as the move from primary to secondary school.

10.   Social origin continues to influence young people's transitions after they have entered the labour market. The transition from education to work and adult life is a critical phase when inequalities may be challenged or reinforced so that a longitudinal study needs to be able to monitor inequalities in both the transition process and in transition outcomes.

11.   Scottish policy aims to create more flexible and individualised provision within an 'integrated landscape of learning' that will enable all young people to access a wider range of learning opportunities, to become lifelong learners, to develop their skills and, by doing so, help to raise the skills base in Scotland and contribute to economic success at an individual and societal level. These themes underpin key Scottish Government policy initiatives and provide the policy context for a longitudinal study of young people's transitions.

Chapter Three   The Experience of Longitudinal Studies Internationally

12.   There are a number of longitudinal studies around the world that focus on the pathways young people take as they complete compulsory education. The options appraisal examined their key design elements and how successful they have been in retaining study members.

13.   Relevant features identified from these studies were:
- high initial response rate by making a first contact within the school setting;
- mixed-methods of administration provide better response rates than postal questionnaires;
- the importance of regular contacts to maintain a study identity;
- the benefits of surveying parents, and gaining active parental support;
- the use of incentives to increase response rates;
- the use of endorsements of the aims of the study by respected organisations in order to gain support of schools and raise the profile of the study.

Chapter Four   Consultation on a Longitudinal Study of Youth Transitions

14.   External stakeholders were unanimous in their view that a longitudinal study of young people's transitions in Scotland is necessary. They supported a study that would track individuals' routes through different activities and statuses and enable a better understanding of young people's pathways and outcomes. Overall, Scottish Government staff supported a longitudinal study although a minority wondered if their information needs could be met from other data sources or from a different approach.

15.   Policy and analytical staff at the Scottish Government focused on the need to provide the Government with the capacity to evaluate the impact of its policies and interventions.

16.   There was a demand for more data on young people's wider experiences at school (including in relation to the four capacities set out in a Curriculum for Excellence), on their attitudes, aspirations and motivations, the guidance and support they had received at school and beyond, as well as data on wider aspects of their lives including participation in leisure, cultural and volunteering activities, on health and on housing and living arrangements.

17.   Better data on government-supported training and other training was identified as a need as was more data on finance and funding, especially the impact of different funding policies on young people's attitudes to, and participation in education and training. There was interest in tracking the destinations and outcomes of young people who followed different post-school learning routes.

18.   Certain groups of young people were identified as being of particular policy interest including those who are not in education, training or employment, or at risk of being so, and sub-groups within this category. The recruitment of sufficient numbers of young people in disadvantaged or vulnerable groups and their retention during the study were seen as crucial aspects that a new study must deliver.

19.   Common themes expressed by stakeholders and Scottish Government staff were:
- Scotland needs a longitudinal study to follow young people's transitions through an increasingly diverse education and training system and a more complex economic and social world.
- As youth transitions become more complicated, prolonged and differentiated, a longitudinal study is necessary to enable understanding of these transitions.
- Respondents identified the lack of a continuous picture of individuals' movement through the system and a longitudinal study was seen as necessary to identify and track individuals' transition pathways, including alternative and cross-sectoral routes.
- It is essential that a longitudinal study includes **all** young people, including those in the independent sector. Without this comprehensive coverage it would be impossible to compare the outcomes of different groups of young people and to assess whether inequalities are declining or not, or to compare the alternative routes that are increasingly available to young people.
- Most thought that a new study should contact young people earlier, when they are still in compulsory education, to track and assess the effect of the reforms of compulsory schooling and the growing curricular flexibility and differentiation within this stage on young people's later experiences and outcomes.
- There was substantial support for a survey sweep at around the age of 27, 28 or 29, when graduates would be more likely to have started to establish themselves in a career, and to enable the study to pick up on those returning to education.

20.   There is a need for better and more active dissemination of a new longitudinal survey than is currently the case in respect of the SSLS. Concise briefings covering the findings and highlighting their policy relevance were suggested rather than longer descriptive reports of each sweep. A new name for the study would be required.

21.   There was limited awareness of SSLS including of the research that has used SSLS data. Respondents suggested that a study website would be helpful including the facility to carry out analyses. There was also support for the idea of staff (whether internal or external to the Executive) with a remit to undertake analyses as required by policy teams.

22.   There was a strong feeling that for a new study to be successful new management arrangements are necessary, a central element of which would be the existence of specific individuals or groups with a remit to develop and promote it.

Chapter Five   Options for the Design of a Longitudinal Study

23.   The options appraisal examines a number of design issues relevant to a longitudinal study and considered their advantages, disadvantages and implications.

24.   The key design issues considered are:
- The age range to be covered.
- Timing and frequency of contact(s) in compulsory education.
- The timing and frequency of contacts after S4.
- Frequency of the recruitment of new cohorts.
- Interim measures.
- Survey methodology, including the potential for carrying out the first sweep in school.
- The design of the sample, including whether it should be random, clustered and/or boosted.
- The sampling frame.
- The extent to which information can be derived and linked from existing administrative sources including legal issues.

Chapter Six   Design and Guideline Costs

25.   We recommend consideration of two main design options:
- Design A: first survey young people while they are still in compulsory education with subsequent surveys at key points up to their mid or late 20s. 1st contact to be carried out in a sample of schools. Use of mixed methods in post-16 survey sweeps. Measures to maintain contact with sample members between sweeps.
- Design B: first survey young people in the year after compulsory education as in SSLS but change the data collection strategy to mixed methods and boost sample numbers in certain sub-groups of young people. Subsequent surveys at key points up to their mid or late 20s, with interim measures to maintain contact with sample members.

26.   We recommend the use of administrative data as an integral part of both designs to: provide background details for selecting a cohort sample; track sample members at later stages of the study to alleviate problems of non-response; and to link information from administrative sources to survey data.

27.   Ballpark costings are provided for these options, based on an achieved sample of 10,000 at sweep 1.

28.   Design A provides the optimum design for a longitudinal study of young people's transitions to meet the needs expressed by policy and analytical staff, and stakeholders.

29.   If Design A is commenced immediately, by 2008 it can provide valuable information on early secondary school experiences. However, under Design A, data on 16/17 and 18/19 transitions will not become available until at least 2010 and 2012. To secure data on these

transitions in the short term we recommend that Design B be conducted as an interim measure in parallel with Design A.

Chapter Seven   Sample Maintenance and Attrition

30.   Problems associated with non-response were a major issue for the former SSLS, and the resolution of these problems is a major aim for the proposed longitudinal study of young people.

31.   The proposed design for the new study has a gap of two years between the initial interview conducted in school and the first follow-up interview conducted in the respondent's home. Contact must be maintained with respondents during this time so that they will not forget about the survey. The young people will be becoming more mobile at around this time and maintaining regular contact will increase the likelihood of tracing those who move. Accordingly, we recommend that a number of steps are taken to maintain contact with participants and build a study identity between sweeps, including the creation of a study website.

Chapter Eight   Dissemination, Use and Management Issues

32.   A longitudinal study represents a considerable financial investment and attention needs to be given to maximising the visibility and profile of the study, to the reporting and dissemination of its findings and to facilitating access to the data for further analysis.

33.   We recommend a study website to publicise the study to (potential) users and stimulate their engagement with it. It should contain information about the survey, research findings and possibly data to access.

34.   An active dissemination strategy, with staff to implement it, is essential for a successful study. The dissemination strategy should include the publication of findings in formats that would engage the interest of stakeholders, for example, summary briefings and short issues papers.

35.   A strategy for data analysis should be developed that would specify what is required in terms of basic reporting at each sweep but that would also set out the further longitudinal analysis of issues of interest to policy makers and stakeholders that might be undertaken.

36.   A range of users should be encouraged to use the longitudinal study data for secondary analysis. This requires attention to deriving variables, including contextual variables, anonymising records, and comprehensive documentation. Another aspect is the provision of staff to respond to requests for information from those who are not able to analyse the data themselves.

37.   Workshops and other measures to support the analysis of data on young people's transitions could be developed in conjunction with other measures to stimulate quantitative data analysis such as the Economic and Social Research Council (ESRC) Researcher Development Initiative.

38.   Securing the endorsement of national bodies, local authorities, professional groups and voluntary organisations is a way of ensuring that the study is viewed as high profile, relevant and useful. Such awareness and endorsement needs to be actively pursued.

39.   Experience shows that the success of a longitudinal study is dependent on there being a committed group or organisation that will promote it, 'nurture' it and develop its potential. The ESRC is currently developing a model for the governance of longitudinal data based on the concepts of 'ownership' by the funders of a study and 'stewardship' by some appropriate organisation. This could be a helpful starting point in considering the most appropriate management and governance arrangements for a new longitudinal study.

40.   The ESRC could be approached for some element of co-funding of the proposed longitudinal study. This would be in keeping with the ESRC's National Data Strategy which recognises the need for collaboration with other bodies, including the devolved administrations, in developing a strategic approach to data resources for the social sciences.

Chapter Nine   Conclusions and Recommendations

41.   The consultation process found strong support for a longitudinal study. Other approaches such as cross-sectional surveys and administrative data would not meet the data needs in respect of young people's transitions. Only longitudinal data enable understanding of transitions, provide a continuous picture of individuals' movement through the system ('learning journeys') required for policy development, and enable an assessment of the cumulative impact of government initiatives on young people's outcomes.

42.   We make the following recommendations:
- The Scottish Government should continue to fund a longitudinal study and it should consider exploring the possibility of some element of co-funding with the ESRC.
- Design A which first surveys young people when they are still in compulsory education best meets the need for longitudinal data on their transitions; it is our preferred option.
- Within Design A, the number and timing of contacts within the compulsory stage would need further consideration in the light of available resources and developments in a Curriculum for Excellence and other related initiatives.
- We recommend that there should be at least four further survey sweeps after S4: at ages 16/17, 18/19 with subsequent sweeps possibly at 22/23 and 26/27. The timing of these later two sweeps would be best decided in relation to relevant policy developments nearer the time of these sweeps.
- If the Scottish Government decides to proceed with Design A, it should seriously consider carrying out an interim study to fill the gap in data between that collected by SSLS and the data that will be collected under Design A. The design and methodology of this interim study could follow Design B (first survey young people in the year after compulsory education using a mixed methods approach with a boosted sample).
- New cohorts should be recruited on a 4-yearly basis.
- A longitudinal study should aim to include different groups of young people and should cover both publicly-funded and independent schools.
- The potential of administrative data to enhance the survey should be utilised. In this regard, measures to support and take forward the work of the Managing Information Across Partners (MIAP) project would be extremely helpful.
- To make the most of its investment in a longitudinal study, the Government should develop a strategy to maximise its profile, disseminate the findings widely and encourage others to use the data. This strategy should include a number of elements.

- The Government should review the management and governance arrangements for a longitudinal study. A key consideration should be to ensure that arrangements support the active promotion and development of the study and provide continuity and commitment in its management.
- The Government should ensure a strategic approach to the longitudinal research it commissions, for example, through developing the work of its Longitudinal Research and Analysis Network.

CHAPTER 1
INTRODUCTION: AIMS AND OBJECTIVES OF THE OPTIONS APPRAISAL

1.1   The Scottish Government Schools Directorate and Lifelong Learning Directorate commissioned the Centre for Educational Sociology and BMRB to carry out an appraisal of the options for meeting the needs for longitudinal data on young people in Scotland, in particular in relation to their post-school transitions.

1.2   The two Directorates are responsible for policies that have an impact on young people through their school years and beyond into their post-school experiences of education, training and employment, and need the capacity to evaluate the impact of their policies on the post-school transitions of young people.   They recognise that data on young people's transitions are also required by a wider user group of policy makers and practitioners, academics and researchers.

1.3   The Scottish Government (and previously the Scottish Office) has funded the Scottish School Leavers Survey (SSLS) since the mid 1970s. The SSLS is a longitudinal study of a nationally representative sample of young people in Scotland. It collects data on young people's experience and attainment in compulsory secondary education and their subsequent transitions through post-compulsory education, training and the labour market including related information such as family background. The young people are first surveyed in the year after the end of compulsory education and several times thereafter - as young people's transitions have become more protracted, the age range of SSLS has been extended and recent cohorts have been followed up to the age of 23-24 (Appendix 1 gives further information about the SSLS). The intention has been that SSLS should provide data not only for the Scottish Government but also for provider agencies as well as the academic and research community.

1.4   The SSLS has provided a rich source of data over the years and has given Scotland an enviable resource for the longitudinal study of young people's transitions. But much has changed since its basic design was developed including significant changes in the nature of young people's transitions, in survey methodology and in the policy environment.

1.5   In recent years the SSLS has also suffered, in common with other postal surveys, from declining response rates at the first contact with consequent issues of bias in subsequent sweeps. In particular, low response rates and attrition have been an increasing problem in respect of less qualified young people and those not in education, training or employment, and those from lower social classes. An additional problem is the small cell size for groups of particular policy interest such as those young people not in education, employment or training, and looked after children. There are also issues about the age range covered by SSLS; the extent to which it captures the processes of transition; the quality of information about training and employment; and the retrospective nature of some of the attitudinal data.

1.6   The most recent contract for the SSLS ended in 2007 and it was seen as timely to review how the evidence needs on young people's transitions could best be met in the future.

1.7   The options appraisal was therefore commissioned to undertake a critical examination of a range of options on how to meet the needs for longitudinal data on young people, and make recommendations on any future longitudinal study. While the continuation of SSLS in some form was not ruled out, it was envisaged that the options appraisal would examine different approaches, taking into account the current and developing data collection

environment. At an early stage of the project, it was agreed in discussion with the Scottish Government that the project would focus on developing, in some detail, different options for a potential new longitudinal study rather than investigating the full range of possible alternative approaches.

The options appraisal

Aims

1.8 The stated aims of this options appraisal were as follows:

- Analyse the needs for longitudinal data of existing and potential users in the Scottish Government and the wider community on young people's experiences in secondary school and subsequent transitions to further/higher education, training and employment.
- Examine different options for collecting, analysing and reporting longitudinal data about young people, and evaluate their potential for meeting the needs of users.
- Clarify the costs and benefits of each option, and make recommendations.

1.9 Specific objectives of the options appraisal were:
- to examine and recommend options for meeting data needs, giving consideration to:
  - subject coverage
  - study design
  - sample sizes, including sub-samples for certain target groups
  - sampling strategy
  - lower and upper age limit of participants
  - data collection methods
  - data issues
  - frequency
  - uses for the data
  - outputs and dissemination
- to provide a cost-benefit and a risk analysis for each option;
- to examine the extent to which the SSLS meets evidence needs in its existing form, could meet these needs in a revised form, or should be replaced by a new study or studies;
- to examine the extent to which there are other sources of data available now, or under development, that meet the evidence needs of policy-makers and other users;
- to consider the potential benefits and practical issues involved in matching individual records from any longitudinal study commissioned by the Scottish Government with records from other data sets;
- to consider the opportunities of working with other UK Government departments, Research Councils (particularly the ESRC), or others, to create an infrastructure for longitudinal data collection in Scotland or across the UK, including opportunities for co-funding future longitudinal research;
- to provide recommendations on the way in which the Scottish Government can set and adjust strategic priorities for any longitudinal study over time.

Methods

Consultation with external stakeholders and the Scottish Government

1.10 A key element of the options appraisal was to consider the needs of the Scottish Government and those of the 'wider user group' in respect of longitudinal data on youth transitions. The Scottish Government had already undertaken an initial information gathering exercise internally about the evidence needs of policy teams and this information was made available to us. This was supplemented by two seminars that the research team held with policy teams and analysts from the Schools and Lifelong Learning Directorates as well as discussion in the research advisory group. Three interviews or meetings were also conducted with Scottish Government staff on issues in respect of administrative data.

1.11 A number of external users and potential users of longitudinal data on young people's transitions were identified in consultation with the Scottish Government. These external stakeholders included academic users, national organisations and bodies in Scotland as well as the Department for Education and Skills (DfES)[1] and the ESRC. A total of 38 organisations and individuals were consulted (Appendix 2 provides details).

1.12 Chapter 4 summarises the views expressed by policy makers, analysts and stakeholders. Most of those interviewed had heard of the SSLS although their knowledge of it varied widely from those who were aware of its existence but had never drawn on it, through to those who had an in-depth knowledge. We have not attempted to weight the views of stakeholders, for example, by their knowledge of SSLS, or of youth transitions or by the type of organisation concerned; this approach was agreed with the Government. Given the large degree of commonality in stakeholders' responses, this would not have been a productive approach or made any substantial difference to the findings.

1.13 It was evident that the consultation process itself raised awareness of the SSLS, the existence of relevant reports and papers and its potential for analyses of interest to the stakeholders interviewed. A small number of those consulted were in a position to make comparisons about the use and value of SSLS over the last decade or so with the position earlier, in the 1980s. While the limitations of poor response rates in the most recent surveys were acknowledged, stakeholders specifically noted the decline in the visibility of the SSLS and the apparent decrease in the number (and value) of publications coming across their desks.

1.14 Depending on stakeholders' level of awareness of SSLS, information was sent to them in advance of the interviews (see Appendix 1). Stakeholders were interviewed using a mix of telephone and face-to-face interviews. The average length of interview was 50 minutes.

1.15 Appendix 3 contains the topic guide used for the interviews. As well as discussing stakeholders' views and preferences in respect of a longitudinal study, stakeholders were also asked about the value of cross-sectional approaches and administrative data and the extent to which these approaches would meet their data needs. In summary the interviews covered the following topics:
- views on the purpose and design of a longitudinal study of young people's transitions, including whether a longitudinal study is needed and a comparison of longitudinal vs. cross-sectional approaches;
- coverage of the survey, in terms of which young people they would like included;

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[1] Now called the Department for Children, Schools and Families (DCSF).

- the timing and frequency of surveys;
- the topics on which stakeholders need information;
- their uses for the data;
- the extent to which their data needs and uses have changed over time;
- their views on the need for comparability of data - over time and nationally and internationally;
- their preferences in respect of how the data might be analysed, on access to the data, on dissemination of findings and preferred types of outputs.

Investigation of administrative data

1.16   The remit of the options appraisal included consideration of the potential contribution to a longitudinal study of the administrative data that are increasingly available. More generally, it was also expected to consider the development of options in the context of a changing data environment, for example, the "Managing Information Across Partners" (MIAP) strategy which aims to develop systems for sharing data across education and lifelong learning providers in Scotland. The MIAP strategy is part of the Open Scotland Information Age Framework (OSIAF) which provides common frameworks for sharing person-level data between government departments.

1.17   The research team investigated a number of potential administrative data sources through a review of websites and published documents and a small number of meetings or telephone interviews with relevant personnel. The administrative sources that can provide linkable data for a longitudinal study are listed in Appendix 4.

1.18   The administrative data were considered in relation to their use in:
- providing a sample frame;
- enabling the tracing of non- respondents;
- enabling the linkage of a range of additional information on respondents.

1.19   At present the legal position regarding administrative data sharing and linkage is not well defined. There is considerable impetus within the UK government and Office for National Statistics (ONS) to clarify these issues and move forward the use of administrative data.

Investigation of longitudinal studies

1.20   Other longitudinal studies in Scotland, the UK and internationally were reviewed in relation to design and methodology, and approaches to analysis, dissemination and user engagement (see Chapter 3).

Development of options for a longitudinal study

1.21   In addition to the activities outlined above, the research team also undertook a review of the latest survey design literature and a focused review of the youth transitions literature. Based on all of these activities, and the experience of members of the research team, several options for longitudinal data collection, analysis and reporting were developed, assessed and costed (Chapters 5 and 6).

CHAPTER 2
BACKGROUND: LONGITUDINAL STUDIES, YOUNG PEOPLE'S TRANSITIONS AND THE POLICY CONTEXT

2.1   In the previous chapter we referred to the changes in young people's transitions and significant developments in policy since the inception and initial design of the Scottish School Leavers Survey in the late 1970s. In this chapter we provide an overview of these changes and outline some of the main implications for the design of a longitudinal study of youth transitions. Before doing so, however, we outline the key elements of a longitudinal research design.

The value of a longitudinal research design

2.2   Longitudinal studies are concerned with the behaviour of individuals over time and offer a way to analyse change and dynamic behaviour. The essential feature of longitudinal research (or more precisely *prospective* longitudinal research) is that the same individuals are contacted at a number of time points. These repeated contacts enable analysis of individuals' transitions including their movement in and out of education, employment, and unemployment and capture the sequential ordering of events and influences in their lives. Another key advantage of the longitudinal approach is that it offers the possibility of untangling cause and effect, including the evaluation of policy interventions as well as the results of strategic behaviours by individuals. As such they offer a way to advance the knowledge base on which policy decisions are made.

2.3   Most surveys, however, for reasons of cost and logistics, are conducted at single points in time. These cross-sectional studies provide information on populations at a specific time point (sometimes referred to as a 'snapshot') and, as such, cannot shed much light on issues related to change. Repeated cross-sectional surveys where different people are surveyed at various time points are possible and these can be used to examine change over time but only at the cohort or **aggregate** level. They do not provide information on change at the individual level and do not enable an understanding of an individual's transition through different activities and statuses. Moreover, while cross-sectional surveys can collect retrospective data, a critical issue is the accuracy of recall and the extent to which respondents' interpretations of their own past behaviour and attitudes are coloured by subsequent events and outcomes. The latter is a particular concern when trying to collect data on opinion, attitudes and motivations. Cross-sectional surveys are therefore not satisfactory vehicles to measure attitude change and they do not permit analysis of cause and effect.

2.4   Unlike cross-sectional or one-off data collections, longitudinal studies are important for policy analysis not only because they document change over time, but also because they enable the influence of policies and practice to be isolated from confounding influences such as social background and context. Each longitudinal record contains information about the past social and educational background of that individual as well as their current occupational or educational status. Allowance can therefore be made for relevant aspects of background when investigating the impact of policy or practice on outcomes.

2.5   Bynner (1996, p 6) argues for the importance of longitudinal data for studying how some people become socially excluded:
> *"to understand the process involved in life histories we need to collect data from the same individuals across time and over an extended period of time...Cross-sectional*

data collected on repeated occasions enable us to monitor the effects of societal change on the prevalence of population characteristics...[but] longitudinal data are essential to measure changes in individuals within the population as...these incorporate the information essential to gain any purchase on causal processes; we need to know about sequences of life experiences and events, and which individuals are affected by environmental changes, while others remain impervious to them".

2.6   Transitions are inherently a longitudinal process and so longitudinal data are necessary to analyse and understand the transitions of individuals over time and answer questions about the impact of policy interventions on young people's outcomes.

Challenges of a longitudinal research design

2.7   While a longitudinal study offers the best approach to an examination of young people's transitions, it does pose several challenges. The potential for attrition or drop-out of participants over the course of a longitudinal study (compared with cross-sectional studies) is perhaps the greatest challenge; attrition not only reduces sample numbers but is likely to result in bias since certain respondents are more likely to drop out than others. It is therefore important that measures are put in place to minimise attrition.   Cost is another issue: longitudinal studies are expensive and by their nature require a long-term commitment to funding. Equally, given their nature, there is a considerable time lag from the start of a study until the final data and results become available (although each sweep builds up the longitudinal picture as well as providing a 'snapshot' of the particular time point).   The volume and complexity of the data collected over an extended time period means that attention needs to be given to data management and this has implications for costs and staffing. Staffing can be an issue since a longitudinal study requires personnel with a high level of expertise in survey and quantitative research methods and the existence of sufficient funding to maintain a reasonable level of continuity in staffing.

The changing nature of young people's transitions

2.8   Young people's transitions in Scotland have changed significantly since the beginning of the SSLS in the late 1970s. The last two decades of the 20th century saw a transformation in the nature of young people's transitions in the wake of changes in the labour market, in compulsory and post-compulsory education and in higher education (Croxford et al 2006). From a position where the majority of young people left school at the end of the compulsory stage, most now continue at school. In 2006, for example, 76% of the cohort in Scotland stayed on for a fifth year at school, a level that contrasts markedly with a figure of 37% in 1980 (Scottish Office 1992, Scottish Executive 2007b). Post-compulsory education itself has become more diverse, offering a wider range of educational options in schools and in further education. In Scotland, further education has played a central role in providing an alternative post–compulsory route for young people who previously would not have continued in, or returned to, education. Higher education has moved from an elite experience to one that is undertaken by almost a half of young people in Scotland: in 2004-05 the participation rate in higher education[2] was 46%; this compares with 19% in 1987-88 (Scottish Funding Council 2005, Tinklin and Raffe 1999).

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[2] Participation as measured by the Age Participation Index; this is the percentage of young Scots under 21 who entered higher education anywhere in the UK for the first time in a particular year as a percentage of the population of 17 year olds in the same year.

2.9   Changes in the Scottish labour market have altered the nature of the 'entry' jobs available to young people and have resulted in the increased casualisation of employment for early entrants to the labour market (Elias and McKnight 1998). The concept of the youth labour market itself and an 'ordinary job' has changed with a substantial proportion of entry jobs being associated with a training programme such as Skillseekers or Modern Apprenticeships (Howieson et al 2000).

2.10   A feature of young people's transitions is the increasing polarisation between those who remain in education and gain qualifications and those who leave school as soon as they can, often with few qualifications. These poorly qualified young people run a high risk of marginalisation in the labour market and in society more generally (Chisholm, 1999; Hodgson, 1999; Jones, 2002; Howieson and Iannelli 2004). The concept of young people not in education, employment or training has gained prominence over the last two decades as a key indicator of an unsuccessful post-school transition. It is recognised that the antecedents of this are varied but include young people's earlier experiences of education and previous transitions such as the move from primary to secondary school (Scottish Executive 2006a, HM Inspectorate of Education 2006).

2.11   Overall, young people's transitions are becoming more protracted, more diverse and more complex in a context where pathways in education and in the labour market are becoming more flexible. They increasingly involve a series of 'mini-transitions' which do not always follow a linear path with some young people moving in and out of education, training, employment and unemployment. Young people move through 'intermediate' statuses such as training programmes and new types and levels of education or training, and may experience 'dual' statuses such as various combinations of learning and work. This raises questions about the most appropriate timing and age to survey young people to capture their key transitions.

2.12   Given that both the starting and end points of the transition process are increasingly indeterminate, what is now the appropriate age range for a longitudinal study? The starting point might be defined as the point at which educational pathways start to diverge or branch as young people's subsequent selections and choices may be oriented towards different types of destinations. But it is not necessarily easy to determine this in a flexible education system. Equally, the end point of a longitudinal study of transitions is not obvious as the labour market moves further from a model of stable, permanent employment. Young people's initial labour market destination is no longer an adequate indicator of their long- or even medium-term position in the labour market. Their labour-market careers must be followed for a number of years before stable 'outcomes' of different educational pathways can be observed. This applies at all levels, for example, recent research on graduates' career paths concluded that *'graduate career paths evolve slowly, and some take five years or longer to settle in to their careers - for some it involves further study, for others .... False starts or a rethink of their early career choices'* (Purcell and Elias 2004, p 15.).

2.13   It is increasingly accepted that young people's progress and outcomes are shaped by personal characteristics as well as by systemic, institutional and contextual factors (Sweet 2006). It seems that high self-esteem, confidence and self awareness combined with planning and decision making skills and a good understanding of educational and work opportunities are associated with more successful transitions. These factors can be summarised in the concepts of self-efficacy and career-management skills and they also link to current notions of employability. To understand young people's pathways means that a longitudinal study requires data on these 'soft skills', on young people's goals and motivations and on their perceptions of the available educational and labour-market options. This type of data is much more reliable if collected *before* the relevant choices are made.

2.14   Partly because of the increasing length in the transition-to-work stage, young people's move to independent living has also been changing. Young people stay at home longer and when they move, they do so more often to live with friends or to co-habit than to marry (Bynner et al 2002). Equally, as the move from education to work is prolonged, it increasingly influences, and may be influenced by other transitions to adulthood, including family and household transitions. To understand young people's movement through education, training and employment, it is necessary to take account of the other types of transitions that they experience (Bynner et al 1997, Raffe 2003). Various 'critical incidents' may occur that act to alter the course of their lives (Gallacher et al 2000). This illustrates the dynamic nature of the process and underlines the value of a longitudinal approach to the study of young people's transitions.

2.15   While transitions are increasingly individualised, at least in the sense of offering more scope for differentiated pathways, the influences of gender, social structure and ethnicity remain strong, as do the constraints of local labour markets and opportunities. Social class inequalities in educational participation and attainment, for example, remain higher in Scotland than in the rest of the UK. The Scottish class gap is relatively favourable up to the end of compulsory education but thereafter widens significantly (Raffe et al 2006, Iannelli forthcoming). Social origin continues to influence young people's transitions after they have entered the labour market. The transition from education to work and adult life is a critical phase when inequalities may be challenged or reinforced, so that a longitudinal study needs to be able to monitor inequalities in both the transition process and in transition outcomes.

The policy context

2.16   A number of wide-ranging developments in the schools and lifelong learning policy areas contribute to the policy context for a longitudinal study of young people's transitions. Policy developments in other areas are also relevant, especially since a feature of Executive policy is to emphasise an integrated, cross departmental approach, as evidenced, for example, in its social inclusion policies that encompass a cross-cutting set of initiatives that span a number of ministerial portfolios.

2.17   The policy context might be summarised as one in which the aim is to create more flexible and individualised provision within an 'integrated landscape of learning' that will enable all young people to access a wider range of learning opportunities, to become lifelong learners, to develop their skills and, by doing so, help to raise the skills base in Scotland and contribute to economic success at an individual and societal level. The intention is not only to enable young people to achieve in terms of formal attainment, but also in respect of broader employability skills including the self management skills seen as necessary for effective planning in the future. The various policies also seek to motivate young people to become lifelong learners by making their initial educational experience enjoyable and stimulating.

2.18   These themes underpin, for example, Determined To Succeed (Scottish Executive 2002a), Ambitious Excellent Schools (Scottish Executive 2004a), a Curriculum for Excellence (Scottish Executive 2004b), More Choices, More Chances (Scottish Executive 2006a) and Lifelong Learning Strategy (Scottish Executive 2003 and 2006b).

2.19   Determined to Succeed, for example, is a key element of the Scottish Government's policy to develop a more enterprising culture in Scotland with the aim of contributing to economic growth. Determined to Succeed seeks to develop more enterprising attitudes, skills

and behaviour among school children in Scotland through the provision of enterprise activities, work-based vocational learning, career education and through encouraging enterprising approaches to teaching and learning.

2.20   A Curriculum for Excellence sets out for the first time the values, purposes and principles for the curriculum for children and young people from 3 to 18 in Scotland. It defines the purposes of education as being to enable all children and young people to become: successful learners; confident individuals; responsible citizens; and effective contributors to society (Scottish Executive 2004b).

2.21   A group of young people of particular policy concern are those who are not in education, training or employment or who are in danger of falling into this status. The Social Justice Strategy aims to halve the proportion of 16-19 year olds who are not in education, employment or training and this target is also one of the six high level indicators to assess the progress of the Executive's lifelong learning strategy (Scottish Executive 2003).   The Executive has recently published a wide ranging strategy to reduce the proportion of young people who are not in education, employment or training (Scottish Executive 2006a).

2.22   Among the goals of the Lifelong Learning Strategy are the improvement of the skills base and employability of individuals and the widening of access to further and higher education (Scottish Executive 2003). Easing the transition between further education and higher education is seen as having a central role to play in achieving wider participation in higher education. The Lifelong Learning strategy seeks to make all Scots lifelong learners who are 'able to move easily into and through the learning landscape' (Scottish Executive 2006b).   Among the issues identified in the recent consultation document on Lifelong Learning are: the impact of funding and delivery mechanisms on individuals' participation; the influence of information, advice and guidance on individuals' choices; the role that community learning and development can play in engaging the more disenfranchised in learning; and the construction of an integrated landscape of learning where different types of learning are recognised and different paths well signposted for learners and potential learners. The Scottish Credit and Qualifications Framework is a central plank of this integrated landscape. The merger of the Funding Councils to create a single body responsible for further education and higher education represents another aspect of this integration.

2.23   A Smart, Successful Scotland (Scottish Executive 2004c), the Scottish Government's strategy for the Enterprise Networks, echoes the themes above: the need to develop enterprising and entrepreneurial attitudes; to encourage a commitment to lifelong learning; and to develop Scotland's skills base, through, for example, the provision of high quality vocational training such as Modern Apprenticeships, and enhancing the skills and learning of those who are already in employment; the latter to include effective career planning support. A Smart, Successful Scotland also aims to close the opportunity gap in economic opportunities and positively promote equal opportunities.

2.24   The policies outlined above provide a basis from which to identify a range of issues that a longitudinal study should cover, for example:
- young people's experiences, attitudes and aspirations during the compulsory stage of secondary schooling and their impact on aspirations and choices at 16 and subsequent outcomes;
- monitoring participation in the growing and diverse range of learning and training pathways and how this varies across different groups of young people;
- the drivers and barriers to participation in post-compulsory education and training;
- measures of self esteem, motivation and employability;

- short, medium and long term employment outcomes and how these outcomes relate to the different education and training paths taken by young people;
- information on progress in later years of those brought into education, training and employment through policies to address social inclusion and widen access, and their longer-term outcomes.

2.25   It is important to distinguish between evaluations of specific government programmes that examine the short-term impact of a particular policy initiative and what a longitudinal study can offer in respect of policy development. A longitudinal study offers a more strategic approach that can provide a system-wide and longer-term perspective on the **cumulative** impact of a range of policy changes on young people's transitions. It is this bigger picture that a longitudinal study should be designed to assess.

2.26   In summary, the nature of young people's transitions and the policy environment suggest that a longitudinal study should:
- cover all stages of young people's transition process, including transitions through intermediate or dual statuses; and it should allow for 'reverse' transitions from work to education as well as vice versa;
- provide data on the processes of transition as well as the starting points and outcomes;
- provide longitudinal data that tracks individuals through all their transitions, in order to identify individual itineraries and to analyse the determinants of successful transitions;
- include data on 'soft skills' as well as formal attainment;
- include subjective attitudinal data collected before key decisions on transitions are made;
- provide data on multiple outcomes of transitions, including 'soft' outcomes as well as a variety of labour-market outcomes;
- provide data on key family and household transitions;
- include the necessary data (eg gender, social background, ethnicity/nationality) for the measurement of equity issues;
- cover the full range of young people, so that inequalities can be measured against the full cohort;
- cover the different sectors of education and training as a basis for a system-wide perspective;
- provide regular data that are comparable over time, as a basis for measuring trends in transitions and to assess the impact of policy change.

CHAPTER 3
THE EXPERIENCE OF LONGITUDINAL STUDIES INTERNATIONALLY

3.1   There are a number of longitudinal studies around the world that focus on the pathways young people take as they complete compulsory education. As part of this options appraisal we have examined a number of contemporary studies from different countries to identify their key design elements and how successful they have been in retaining study members. In particular we have focused on the current major longitudinal studies in the USA, Australia and England. In addition to this, we have also looked at a smaller-scale study of young people that has been running with great success in Edinburgh.

USA - Education Longitudinal Study of 2002 (ELS:2002)

3.2   The Education Longitudinal Study of 2002 (ELS:2002) is the fourth large scale cohort study tracking young people and their progress through compulsory education and on to post-secondary education and/or the workforce conducted in America. The first study started in 1972 and subsequent cohorts began in 1980 and 1988.

3.3   The first wave of research of the current study was conducted with young people in 10th grade when they were 15/16 years old. Subsequent waves of research have taken place in 2004 (17/18 years old) and 2006 (19/20 years old). At present one or more follow-up studies may be conducted starting four or more years later. However, it is most likely that there will just be one follow-up in 2012 when respondents will be 25/26 years old and transcripts from their higher education courses will also be available.

Initial wave of research

3.4   ELS: 2002 adopted a two stage sample design with schools selected first and then 10th grade pupils selected randomly within each school. Independent schools were selected at a slightly higher rate than other schools in order to ensure adequate sample numbers as they traditionally had a lower co-operation rate. In total, a response rate of 62% was achieved for the school sampling stage. Schools that were willing to assist in the study were required to provide a full list of enrolled pupils from which the final pupil selection took place. Approximately 26 pupils were selected from each school.

3.5   After pupils had been selected consent letters were sent to parents informing them of the study. The majority of schools were happy for this letter to require only passive or implied consent (ie unless parents actively opted their child out of the study, their consent would be assumed). However, a minority of schools were unhappy with this approach and insisted that parents had to actively *opt in* to the study. As might be expected the response rate for young people at these schools was significantly lower than at schools with a passive or implied consent procedure. The study directors believe that this was not because parents at these schools were less happy to take part in the study - the numbers of opt outs were in fact similar at both sets of schools - but that parents lacked the initiative to actively put their child forward for the study as the procedure required.

3.6   The survey of the sampled young people was administered in schools using paper questionnaires and comprised a number of elements including tests in maths and English as well as a self-completion questionnaire. Parents of young people who took part in the study

then became eligible to be interviewed themselves. The parental interview collected background information about household characteristics and was completed using a mixed methodology of telephone and postal self-completion interviews.

3.7   As with previous studies, the first wave of research for ELS:2002 was conducted with young people on site within schools on an initial survey day. Subsequent "mop up" days were then arranged as necessary to collect information from young people who were not present at the initial survey day.

3.8   Incentives were only paid to young people when it was felt that the response rate was likely to be depressed by external factors. When schools required active consent from parents a survey day prize draw with two $20 prizes was conducted to encourage participation. When a school would only allow the survey to be conducted out of school hours (after school, weekends or holidays) each participating student was offered $20.

Response

3.9   There was a very high response rate of around 87% for young people at schools that agreed to take part in the survey. A large amount of the non-response can be directly attributable to schools that required active consent from parents. However it should be remembered that the study did encounter relatively high levels of school level non-response prior to this stage. This will largely be a result of the high levels of burden placed on schools taking part in the study. In an effort to reduce this, schools were allowed to hold their survey day whenever was the most convenient for them within a 6 month period. In addition to this, study endorsements were also obtained from a large number of relevant groups to emphasise the importance of the study.

3.10   The response rate amongst parents whose child had taken part in the study was encouragingly high at 87%.

Second wave of research

3.11   The second wave of research for ELS:2002 was conducted in 2004 when sample members were 17/18 years of age. As students in America generally stay in education until they are 18 the majority of sample members were once again interviewed in school.

3.12   There were, however, groups of respondents for whom it was not possible to conduct interviews in school. These were:
- respondents at schools who no longer wished to participate;
- respondents who had moved to a new school;[3]
- respondents who had graduated early from High School;
- respondents who had "dropped out" of full-time education.

3.13   These respondents were followed up with interviews outside of school. In the first instance interviews were attempted using telephone data collection. If the telephone interviewers were unsuccessful in finding a sample member, their details were passed to a tracing unit who used various agencies to find a correct address and current telephone number. All sample members who could not be interviewed over the telephone were passed on to field interviewers who attempted to conduct interviews with respondents in home.

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[3] Unless the new school was also participating in the study

Incentives

3.14   At the second wave of research it was intended that all respondents who participated would receive a $20 incentive. However, this had to be confirmed with individual schools and some preferred not to allow students to receive this incentive. Some schools allowed pupils to receive $20 in gift vouchers while others asked for the equivalent sum to be donated to the school library or school council. Fewer than three per cent of schools would not permit incentives of any type.

Response

3.15   The response rate at the second wave of research was 89% although it did vary to a large degree by the type of respondent. Nearly 95% of young people who took part in the initial wave and who were still in the same school took part in the second wave of research. Just under 4 in 5 young people who had left education, either through dropout or early graduation, took part in the second wave (78% and 82% respectively). The hardest group to retain were those young people who had transferred school, but coverage here was still relatively impressive with 71% taking part at the second wave. The overall response rate for ELS: 2002 was 77%. The breakdown of the type of interviews conducted is included in Table 3.1 below.

Table 3.1: Type of interviews

Method	Number of responses	% of responses
In school	11,125	74
Telephone	3,024	20
Face to face	797	5
Postal	43	*

Summary design elements

- First sweep conducted at 16 (2 years before the usual leaving age)
- Sweeps conducted biennially
- First two sweeps conducted in schools
- Passive consent from parents where possible
- Incentives from second sweep onwards
- Extensive procedures for absent pupils
- Parental interview at first sweep
- High response rates in school – declining when attempting to reach those outside of their original schools

Australia – Longitudinal Study of Australian Youth (LSAY)

3.16   The Longitudinal Surveys of Australian Youth (LSAY) is a program of surveys of young people jointly managed by Australian Council for Educational Research (ACER) and the Australian government Department of Education, Science and Training (DEST). The surveys focus on the education and labour market experiences of groups of young Australians, beginning from their middle years of secondary schooling. Data collected

include basic demographic variables, as well as information about educational and labour force participation and experiences extending over a number of years.

3.17   The present form of the LSAY program commenced in 1995 with a national sample of Year 9 students and there have been two subsequent cohorts in 1998 and 2003. The program also brings together earlier longitudinal studies conducted by ACER under the Youth in Transition (YIT) program, and by the Commonwealth under the Australian Longitudinal Survey (ALS) and Australian Youth Survey (AYS) programs. The data collected through LSAY are deposited with the Australian Social Science Data Archive (ASSDA) for use by other researchers.

LSAY 2003

3.18   The third cohort for LSAY in 2003 was timed to coincide with the PISA study in Australia of the same year, so that it could be used to provide the basis for the longitudinal study. As a result of this the PISA sample drawn in Australia in 2003 was actually larger than that required by the OECD.

3.19   All young people who had taken part in the PISA study of 2003 then formed the sample for the 2003 cohort of the LSAY. The first interviews with the young people as part of the 2003 LSAY were actually completed in the same year as PISA in the form of telephone follow-up interviews at home. These first interviews focused on areas that were outside the focus of PISA, including follow-up information about their school and part-time work.

3.20   Subsequently this cohort has been interviewed again in 2004 and in 2005, each time by means of a telephone interview at home.

Response

3.21   The response rates achieved for the 2003 cohort of the LSAY have been relatively high.

3.22   A total of 12,551 respondents completed the PISA study in 2003 and were therefore eligible for the first follow-up interviews in the same year. Of these 932 (7%) either provided incorrect contact details or opted out of any follow-up research. A total of 10,370 interviews were conducted from the useable sample of 11,619 PISA respondents. This equates to an un-weighted fieldwork response rate of 89% and an overall response rate of 83%.[4]

3.23   The second follow-up study was conducted in 2004 when the cohort were aged 16/17 years old, one year after the PISA and initial follow-up wave. Interviews were conducted by telephone in the respondent's home, the same approach as in the 2003 follow-up interviews. A total of 9,378 interviews were conducted from the sample of 10,370 respondents who completed the initial follow-up wave, which is an un-weighted response rate of 90% and an overall response rate of 75%.

3.24   A third follow-up study was completed in 2005 when the cohort was aged 17/18 years old. As with the previous two follow-up surveys, interviews were once again conducted in the respondent's home by telephone. A total of 8,691 interviews were conducted from the sample

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[4] The fieldwork response rate excludes respondents with incorrect contact details and those who opted out after the PISA stage. The overall response rate is based on all pupils who completed PISA and who would have been eligible for the first follow-up.

of 9,378 respondents who completed the previous wave, which is an un-weighted response rate of 93% and an overall response rate of 69%.

Summary design elements

- First sweep conducted at 15/16 as part of PISA
- Initial sweeps conducted annually
- First sweep conducted in school
- Follow-up sweeps conducted over the telephone
- High response rates for follow-up sweeps

England – Youth Cohort Study (YCS)

3.25   The Youth Cohort Study (YCS) series dates back to 1985 when Cohort 1 Sweep 1 took place. YCS is a significant and extensive study of young people's transitions and has informed key policy decisions over a number of years. The first survey (or 'sweep') for each cohort of those sampled takes place in the first year after compulsory education, with subsequent sweeps at varying time intervals; these are usually annually but occasionally take place at shorter intervals). The thirteenth YCS cohort is being conducted in Spring 2007.

3.26   Surveys at each stage provide information about the routes young people follow. The YCS is funded and managed by the Department for Children Schools and Families (formerly Department for Education and Skills (DfES)).

3.27   The primary aim of the YCS is to track young people's transitions from compulsory education into further education, training and the labour market. The longitudinal nature of the YCS enables the Department to establish the education and employment paths that young people take and explore how things develop over time. Finding out about the different routes that young people take helps the Department plan services for different types of young people. It also enables the Department to establish appropriate points in the lives of young people where policy intervention helps to improve their educational and employment outcomes. The YCS was initially modelled on the SSLS and so the similarities between the two are unsurprising.

YCS 13

3.28   Prior to cohort 13 a mixed mode data collection approach had been established for YCS. An initial self-completion postal survey with a web completion option (first introduced at YCS12), was supplemented by a telephone interview stage to increase response rates among non-responders for whom a telephone number could be identified.

3.29   However, as with SSLS, response rates had been declining steadily over time. In YCS12, this approach resulted in an overall response rate of 46%. While this might be viewed as just about acceptable if replicated across the sample, in fact the response rate varied substantially by Year 11 attainment, ranging from 19% among those with no qualifications to 63% among those with 8+ A*-Cs. Since the initial sample for YCS had been selected to be representative by attainment, this design has led to sample sizes for those with low attainment being too small for analysis at subsequent waves of the survey.

3.30   Consequently there have been a number of changes to the traditional design of the YCS to ensure that there are sufficient numbers of young people from all levels of attainment. The main changes that have been made are:

- the issued sample is no longer broadly representative of Year 11 attainment and instead low attainers have been over sampled;
- data collection at sweep 1 will now take place via face to face interviews rather than using a mixed mode approach;
- the issued sample size has been reduced from approximately 25,000 to 10,000.

3.31   The issued sample size can be reduced since face to face data collection has significantly higher response rates than postal, telephone or web surveys. Adopting a face to face data collection strategy also changes the way in which the sample was selected for this cohort as there is a need for respondents to be clustered (for YCS 13 this was by postcode sector). At present there has been no decision made about the data collection methods that will be used for subsequent waves.

Summary design elements

- Declining response rates for traditional approach (like SSLS)
- Particular problems for low attainers and those not in education, training or employment
- New approach adopted 2007 (cohort 13) with face to face survey in home
- Reduced initial sample size but significantly higher response rates
- Sample skewed to over represent low attainers
- Initial sweep in first year after compulsory education (16/17)

England – Longitudinal Study of Young People in England (LSYPE)

3.32   The Longitudinal Study of Young People in England (LSYPE) was designed to meet a need for information to support government policy development around young people's transitions from compulsory education into further education, training and the labour market. While existing research (including the Youth Cohort Studies) had previously provided important information in this area there were still important gaps. In particular, it was felt that it was important to track the development of young people from their early teens, while they were still in education, rather than just studying them at the post-16 stage. In addition to this, LSYPE also collects background information about the young person's circumstances, including interviews with the parents/guardians with whom they are living.

3.33   The target population for LSYPE comprised all students in Year 9 schools in England. In practice, and largely for practical reasons, the survey population excluded pupils in small schools, boarders and foreign nationals residing in England solely for the purpose of attending school. As fieldwork for LSYPE was conducted face to face at the young person's home a two stage sample design was used with schools adopted as primary sampling units to allow for some clustering of addresses.

3.34   In the maintained sector, schools classed as 'deprived' (and hence students attending deprived schools) were sampled at higher rates than other schools (and pupils attending other schools). Furthermore, in the maintained sector the numbers of students belonging to various minority ethnic groups were also boosted. On average around 33 pupils were selected at each school.

3.35   Fieldwork for the first wave of LSYPE took place in Spring/Summer 2004. Interviews were conducted in the young person's home via Computer-Assisted Personal Interviewing (CAPI) with the sampled young person and any parents/guardians living in the same household. Fieldwork for the second and third waves followed a similar model taking place at the same time of year in 2005 and 2006. One slight difference with the third wave of research was that interviews were not required with both parents/guardians and proxy data was collected for any partners.

3.36   The total interview length at Wave 1 was 90 minutes comprising a 35 minute interview with the sampled young person and a 55 minute interview with their parent(s)/guardian(s). At Wave 2 less information was required and the overall interview length was shorter at 70 minutes with an even split between young person and parent(s) of 35 minutes for each. At Wave 3 the questionnaire length was significantly reduced to 35 minutes with 25 minutes for the young person and 10 minutes for the parent.

Incentives

3.37   At the first wave of research all sampled young people were given a £5 gift voucher conditional on them taking part in the study. At Waves 2 and 3 the incentive remained the same but instead it was given unconditionally to all young people. Fieldwork for the fourth wave of LSYPE is about to begin and the incentive has been increased now to £8.

Response

3.38   At the first wave of research 15,770 interviews were completed at households[5] from an initial sample of just over 21,000 with an un-weighted response rate of 74%. At the second wave of research interviews were completed at 13,539 households to give an un-weighted response rate of 86% and an overall response rate of 64%. In the third wave of research interviews were conducted at 12,435 households for an un-weighted response rate of 92% and a cumulative response rate of 59%.

Content

3.39   Young people in LSYPE have been interviewed every year from Year 9 onwards. These interviews have focused on what happens at school, their plans for the future and various risk behaviours among many other topics. In addition, the parents/guardians of young people have also been interviewed at each wave and this has allowed for detailed background information to be built up.

Summary design elements

- First sweep conducted at age 13/14
- Sweeps conducted annually
- Interviews conducted in home
- Both parents and young people interviewed
- Comprehensive information collected about most aspects of young person's background
- Very high response rates (exceeding initial plan)
- Incentives paid to young person

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[5] In total 40,828 individuals were interviewed

Scotland – Edinburgh Study of Youth Transitions and Crime (ESYTC)

3.40   The Edinburgh Study of Youth Transitions and Crime (ESYTC) is a longitudinal study involving an entire year group of children, namely those eligible to start the first year of secondary education in the City of Edinburgh in 1998. The overarching aim of the study is to increase understanding of criminal behaviour among young people. The cohort comprises approximately 4,300 young people who were aged between 11½ and 12½ years at the start of the study. Annual sweeps of data collection are conducted, with the intention of tracking the cohort through their teenage years and into early adulthood.

3.41   Given the size of the cohort, the most feasible and cost-effective method of data collection was via self-completion questionnaires, on an annual basis, within Edinburgh schools. More detailed contextual information on the nature and meaning of young people's offending behaviour was achieved at sweep two by semi-structured interviews with a sample of cohort members. And at the neighbourhood level, the relationship between community characteristics, local crime rates and individual offending is being analysed by means of a Geographic Information System (GIS).

3.42   A unique feature of the study is the number of agencies and data sources to which access was successfully negotiated. The most extensive access negotiations involved the Edinburgh schools, including mainstream secondary schools, independent schools and schools for children with additional support needs. As well as allowing the self-completion questionnaires to be administered to the cohort each year, information was also collected annually from school computer records and, at sweep two, teachers supplemented this information with a short "strengths and difficulties" questionnaire.

3.43   The fieldwork for the first sweep of the study was mainly conducted between September and December 1998. Some schools asked for the administration of the survey to be completed over one or two days to minimise disruption which was also the most efficient approach for the research team. However, other schools preferred the survey to be administered during a particular kind of lesson and this meant that fieldwork within these schools could be spread over a number of weeks (depending on timetables) which was slightly less efficient for the research team.

3.44   The next 5 sweeps of the study (2 to 6) were also conducted in schools and again every effort was made to ensure that disruption to schools was kept to a minimum with researchers working to a schedule that the schools preferred. From sweep 5 onwards the number of young people who were no longer in school began to increase as their compulsory education ended. Attempts were made to survey those young people who had left school via postal questionnaires and some telephone interviews but, as might be expected, this was significantly less productive than attempting to survey the young people in school.

3.45   The seventh sweep of the research is due to take place in 2007 when study members will be 20. As study members will no longer be in school the data collection strategy has been revised. At this sweep sample members will be interviewed using a combination of web-based questionnaires and computer-assisted interviewing.

Response

3.46   The success of the access negotiations was such that every school in the maintained sector in Edinburgh agreed to take part in the study. There was also a good level of response among schools in the independent sector which are usually among the more reluctant to participate in research.

3.47   Response among pupils in participating schools was generally very high for the first three sweeps, with around 95% of eligible pupils taking part in the study. At sweeps 4 and 5 response began to decline as more young people were no longer in school but response rates were still high at 93% and 89% of eligible cohort members respectively. Sweep 6 was conducted in 2003 when sample members were 16 and therefore a proportion had by now left compulsory education. As a result of this the response rate declined and 80% of sample members completed the survey at this sweep.

Summary design elements

- Attempted census of all S1 pupils in Edinburgh
- Sweeps initially conducted annually
- Interviews conducted in school for early sweeps
- Very high response rates in schools (all maintained schools agreed to take part)
- Later sweeps required interviewing outside of schools and response rate was more challenging

CHAPTER 4
CONSULTATION ON A LONGITUDINAL STUDY OF YOUTH TRANSITIONS

4.1   A key element of the options appraisal was to consider the needs of the Scottish Executive and those of the 'wider user group' in respect of longitudinal data on youth transitions and in this chapter we report on the responses of external stakeholders and of policy and analytical staff in the Scottish Government. As outlined in Chapter 1, we interviewed a range of external stakeholders including academics and a number of national and public bodies, drew on a prior internal information gathering exercise in the Scottish Government supplemented by two seminars with policy teams and analysts in the Schools and Lifelong Learning Directorates and discussion with the research advisory group.

4.2   As we noted in chapter one, most of those interviewed were aware of the SSLS but their knowledge of it varied widely. The consultation process brought the SSLS and its potential use to the attention of stakeholders, highlighting issues about its lack of visibility in recent years.

4.3   We now report on the key points arising from the consultation with external stakeholders. We do so without commenting on their responses, but consider them and the issues they raise later in relation to the options that we have developed. Also, as we pointed out in chapter one, as agreed with the Government, we have not weighted the views of stakeholders, and in any case, there was a large element of unanimity in their responses.

The responses of external stakeholders

The need for a longitudinal study

4.4   Stakeholders were asked if they thought that a longitudinal study of young people's transitions in Scotland is necessary. All of them responded positively and supported the funding of such a study. The caveat added by those who had more detailed knowledge of the SSLS was that a new study would have to deliver a more robust sample.

4.5   There were several common themes which emerged in respect of stakeholders' support for a longitudinal study. One was that now, more than ever, Scotland needs a longitudinal study to follow young people's transitions through an increasingly diverse education and training system and a more complex economic and social world. A second theme was that as youth transitions become more complicated, prolonged and differentiated, a longitudinal study is necessary to enable *understanding* of these transitions. There are two aspects to this: an understanding of the reasons behind individual young people's transitions – why did they make certain 'choices', and who and what influenced them? A second aspect of understanding transitions better is the need to gain a greater understanding of progression patterns and 'learning journeys'. Although there is considerable information about how many young people are in a particular status at any one time, stakeholders identified the lack of a continuous picture of individuals' movement through the system. A longitudinal study is necessary to identify and track individuals' transition pathways, including alternative and cross-sectoral routes.

Coverage

4.6   While the transitions of disadvantaged young people (including low attainers, those with low socio-economic status, and those not in education, training or employment or likely to be so) were a concern for all stakeholders, virtually all of them thought that it is essential that a longitudinal study includes **all** young people. Without this comprehensive coverage it would be impossible to compare the outcomes of different groups of young people and to assess whether inequalities are declining or not.

4.7   It was also seen as necessary to include all young people to enable a comparison of the alternative routes that are increasingly available to young people e.g. the outcomes of those who choose the work-based route via Modern Apprenticeships, compared with those who go into HE; a comparison of those who enter the labour market when they have achieved Higher National qualifications with those who continue on to a degree.

4.8   While entering higher education might be seen as a successful outcome, the point was made that in a time of mass higher education, the higher education sector and higher education student body is so differentiated that, on the one hand, it may no longer be appropriate to make a key distinction between those who are in higher education and those who are not and, on the other hand, there is an increasing need to look *within higher education* and examine the experiences and outcomes of different students.

4.9   Stakeholders thought that a future longitudinal study should continue to include the independent school sector as is currently the case in the SSLS. The Scottish Council of Independent Schools (SCIS) strongly supported the inclusion of independent schools. Overall, it was felt that this is necessary to provide a full picture of education and the experience of young people in Scotland. It was also pointed out that it is important to have the capacity to make comparisons between publicly-funded and independent schools.

4.10   A number of stakeholders identified specific groups of interest to them, including young people from minority-ethnic backgrounds; young people with disabilities; and 'looked after' children. They hoped that a new longitudinal study would be designed both to identify these young people and also to provide sufficient numbers to enable meaningful analysis, something that is not possible using the SSLS.

Age

4.11   Currently the SSLS first surveys young people in the year after S4 (the end of compulsory education) when they are approximately age 16/17. The most recent survey design includes three subsequent sweeps at the ages of 18/19, 21/22 and 23/24. Only a minority of stakeholders were satisfied with the present starting point of 16/17, most thought that a new study should contact young people earlier when they are still in compulsory education. This view reflected, in part, the perceived need to assess and track the effect of the reforms of the compulsory schooling system and the growing curricular flexibility and differentiation within this stage on young people's later experiences and outcomes.

4.12   The desire for earlier contact with young people also reflected the recognition that to understand their later outcomes, it is necessary to gather contemporaneous data on their experiences, attitudes and expectations at an earlier stage.

4.13   Stakeholders' views were more mixed about the best timing for a survey within the compulsory stage. There was some interest in a survey trying to pick up on the transition from primary to secondary. A number of stakeholders noted that earlier contact with young

people might encourage them to 'buy into' the study and contribute to better response rates to later sweeps.

4.14   Nearly all stakeholders thought that a new longitudinal study should continue until the young people were at least in their mid 20s in view of the more prolonged nature of youth transitions. But there was substantial support for a sweep beyond this at around the age of 27, 28 or 29, a point at which graduates would be more likely to have started to establish themselves in a career and to enable the study to pick up on those returning to education.

Data needs

4.15   It was not part of the remit of the options appraisal to consider questionnaire content in any detail but rather to explore with stakeholders their general data needs of a new longitudinal study. The SSLS currently collects information on young people's attainment in secondary education; their experience and views of secondary school; their educational, training and employment activities after leaving school (up to their mid 20s); and a variety of background information including ethnicity, parental education and social class, personal and family circumstances and housing tenure.

4.16   These were all areas identified by stakeholders as relevant to them although sometimes expressing the need for better data on particular areas, for example, in respect of additional support needs, government-supported training, and on young people in the labour market after 18/19.

4.17   They also identified a number of other areas for inclusion or which they thought should have much greater emphasis; this largely reflected the desire to gain a better understanding of young people's transitions. The aspects identified by stakeholders fall into several broad areas:
- The need for more data on young people's attitudes, motivations, aspirations and expectations. This was seen as critical to understanding their transitions, in particular, to enable examination of the interaction between attitudes etc and their movement between statuses. Related to this is information on sources of influence (both informal via family and friends and formal via career guidance interventions).
- The need for data on young people's wider achievement and 'soft skills', not just on their attainment of qualifications. The four capacities set out in a Curriculum for Excellence were mentioned specifically.
- The value of assessing aspects such as individual's self esteem, self efficacy and resilience.
- The need to gather data other than the strictly educational, training and employment aspects, to be able to understand transitions and outcomes, for example, young people's leisure activities, who they socialise with, family relationships.
- The need to ensure that activities are captured at sufficiently frequent intervals to be able to track individuals' routes, distinguish specific pathways and identify alternative and cross - sectoral learning routes.
- The ability to distinguish within the group of young people not in education, employment or training.

Contact with parents/carers

4.18   A number of stakeholders suggested that it would be valuable to collect data directly from young people's parents/carers on, for example, their involvement in their child's

education and their aspirations for their child as well as information about their own education and employment and other data about the family.

Dissemination and use

4.19   Stakeholders felt strongly that much more attention and resource needs to be given to the marketing, dissemination and use of a new longitudinal study than has been the case with the SSLS, especially in more recent years. The publicising and marketing of a longitudinal study, arrangements for data analysis, reporting and dissemination of findings, and the availability of data for secondary analysis, were all areas that stakeholders believed need to be reviewed. This view was shared by those who had considerable knowledge of SSLS and those who were less familiar with it.

4.20   The current system of reporting, funded as part of the SSLS contract, was seen as inadequate and as not able to meet the needs of various user groups. The lack of funding for longitudinal analysis as part of the contract was noted as a specific gap since it has meant that one of the key potential benefits of SSLS has not been realised. The common view was that instead of long descriptive reports on a cross-sectional basis, it would be better to focus on the production of short summary briefings and perhaps issues papers for general dissemination. This should be combined with a process that would identify and fund more in-depth analysis of specific issues of interest to policy makers and stakeholders.

4.21   The necessity for a much more proactive and dynamic approach to the marketing of a longitudinal study and dissemination activities was suggested by stakeholders. The creation of a dedicated website for the study was a common suggestion and the examples of websites for other studies such as Growing Up in Scotland, the LSYPE and the British Household Panel Study were mentioned. It was also felt important that the Scottish Government (or whoever is responsible for the study) should be active in briefing the media and in feeding relevant findings through to the range of relevant groups and organisations.

4.22   There was support for the idea of staff, within or external to the Executive, who would be available to carry out analysis at the request of stakeholders. Several thought that some public bodies and voluntary organisations in Scotland might be willing to contribute to the funding of such a facility.

4.23   While stakeholders from academic backgrounds were most concerned about the need to facilitate the secondary analysis of survey data, interest in this was not confined to them. It was suggested that the best approach would be a website with easily understood and navigable data files along with good documentation and a library of key derived variables. It was again noted that a number of other studies have taken this approach.

4.24   Stakeholders thought that at a time when evidence-based policy and practice is a dominant model, a range of professionals should be made aware of the data, its potential to inform their policy and practice and that mechanisms should be established to educate them about how to use the findings and how to access the data directly. Several stakeholders commented on the approach that has been taken to publicising the Standard Tables and Charts (STACS) data and its use to the teaching profession.

4.25   Stakeholders involved in the training of teachers and other professionals identified the potential value of having datasets from a longitudinal study to use in their teaching and for students to access.

4.26   Finally, a new name for the study would assist in publicising it and promoting its relevance to a range of organisations.

Management

4.27   Stakeholders with knowledge of SSLS commented on what they perceived as the lack of any real drive or impetus behind the study in recent years. Responsibility for SSLS has been shared between the former Scottish Executive Education Department and Enterprise and Lifelong Learning Department and no-one has had a full-time remit for it.   As already described, the contract for SSLS has been limited, focussing on the collection of data and a descriptive report of each sweep.   There was a strong feeling that for a new study to be successful new management arrangements are necessary, a central element of which would be allocating responsibility for the study to specific individuals or groups with a remit to develop and promote it.

4.28   The role of individuals or groups external to the Scottish Executive in the management and development of a new longitudinal study was raised, including some quite fundamental questions about the ownership and direction of a longitudinal study.   Several stakeholders felt that the Scottish Executive does not have the critical mass of staff to support and develop a quantitative longitudinal study and that different models of management and governance should be explored.   We consider this in chapter 8 in the context of the ESRC's model for the governance of longitudinal data.

4.29   In discussing the management of SSLS and any new study, stakeholders raised wider questions including the place of a study of youth transitions alongside the other surveys that the Scottish Executive funds, and suggested that it is timely for the Executive to develop an overall strategy for its longitudinal data.

The response of Scottish Government staff

4.30   The response of staff from policy teams and analysts in the Scottish Government was similar in many respects to that of the external stakeholders.   As in the previous section, we outline the views expressed without commenting on them.

The need for a longitudinal study

4.31   Overall, there was interest in a longitudinal study that would track individuals' routes through different activities and statuses and enable a better understanding of young people's pathways and outcomes.   In one of the seminars with the SG, for example, it was noted that in preparing the recent consultation on Lifelong Learning it had proven difficult to find information on individuals' 'learning journeys'.   However, support for a longitudinal study was not unanimous; a minority of staff wondered whether their information needs could be met just as well from other data sources or from a different approach, for example, cross-sectional surveys. (See Chapter 2 for an outline of relative merits of longitudinal and cross-sectional approaches).

4.32   Attitudes, attitudinal change and the interaction with and impact on behaviours was another area identified by policy and analytical staff where a longitudinal study could provide valuable information.   A longitudinal study could also provide evidence of the longer-term impacts of earlier policy initiatives and inputs on young people's transitions and outcomes, for example, a Curriculum for Excellence and policies to assist young people at risk of not participating in education, employment or training. Education, enterprise and lifelong learning, culture, sports, volunteering and rural affairs were all areas of policy where staff could identify significant benefits that a longitudinal study could bring to the development of their policies.

Data needs

4.33   Data needs centred on providing the Government with the capacity to evaluate the impact of its policies and interventions.

4.34   There was a demand for more data on young people's wider experiences at school (including in relation to the four CfE capacities), on their attitudes, aspirations and motivations, the guidance and support they had received at school and beyond, as well as data on wider aspects of their lives including participation in leisure, cultural and volunteering activities, on health and on housing and living arrangements. Better data on government-supported training and other training was identified as a need as was more data on finance and funding, especially the impact of different funding policies on young people's attitudes to, and participation, in education and training.   There was interest in tracking the destinations and outcomes of young people who followed different post-school learning routes.

4.35   Policy and analytical staff identified certain groups of young people as being of particular policy interest, including those who are not in education, employment or training and sub-groups within this group; looked after children; young people with Additional Support Needs; those from socio-economic disadvantaged backgrounds; and young people from rural areas and their patterns of migration. For most of these groups, sample size is a key consideration. The recruitment of sufficient numbers of young people in disadvantaged or vulnerable groups and their retention during the study were seen as crucial aspects that a new study must deliver.

Age

4.36   There was consensus among policy and analytical staff that a new longitudinal study should contact young people at an earlier age and stage than happens under the current SSLS arrangements (the first sweep of SSLS is at 16/17). This view was shared across policy areas. The reasons given echoed those of the external stakeholders already reported above. While there was unanimity that a new study should start earlier, opinions differed on the most appropriate age and stage. Suggestions ranged from P7 to S3 with considerable support for two survey sweeps during the compulsory stage of schooling.

4.37   It was generally thought that respondents should be surveyed until at least their mid 20s if response rates could be maintained; there were more mixed views about a later sweep when respondents would be in their late 20s.

Coverage

4.38   There was more debate among policy and analytical staff than among external stakeholders about the coverage of a new study (ie should it include all young people or focus on specific groups?) But the general view was that while it is essential for a new study to provide the capacity to examine the transitions of disadvantaged and vulnerable young people, much of the information that is required is also needed for all young people. It would be impossible, for example, to assess the value of alternative learning pathways without a comparison with the more common routes. Also at a time when increasing proportions of young people gain formal qualifications, it is important to examine their outcomes and understand why some may make more successful transitions than others.

4.39   The question of the inclusion of independent schools in the sample was raised and the general view seemed to be that their inclusion is necessary to have a full understanding of Scottish education.

Contact with parents/carers

4.40   In common with some external stakeholders, there was support for surveying young people's parents/carers, at least in conjunction with the first survey sweep of the young people.

Dissemination and analysis

4.41   Policy and analytical staff made similar points to those of external stakeholders about the need for better and more active dissemination of a new longitudinal survey than is currently the case in respect of the SSLS. Concise briefings covering the findings and highlighting their policy relevance were suggested rather than longer descriptive reports of each sweep. A new name for the study would be required to reflect better the focus on transitions and the linkage between earlier schooling and later outcomes.

4.42   There was limited awareness of SSLS including of the secondary analysis of SSLS that has been carried out and the resulting publications. Staff suggested that a study website would be helpful including the provision of the facility to carry out analyses. In common with external stakeholders, there was also support for the idea of staff (whether internal or external) with expertise with the data to have a remit to undertake analyses as required by policy teams.

Management

4.43   It was felt that the division of responsibility between the former Scottish Executive Education Department and the Enterprise and Lifelong Learning Department for the management of SSLS has not been helpful and has contributed to a lack of 'ownership'. But apart from the joint responsibility, another factor is that it has not been a central remit of the staff concerned.

Qualitative add-on projects

4.44   While policy teams identified the need for robust quantitative data on large representative samples, there was also interest in additional in-depth qualitative work with sub-groups who could be identified from the main study.

Implications of the consultation

4.45   The requirements of the Scottish Government and external stakeholders of a longitudinal study of young people's transitions have a range of implications for a new study.

4.46   The wish for more attitudinal questions and questions on wider aspects of young people's lives beyond education, training and employment requires some re-design of the questionnaire content. The re-design of questionnaire content is not part of the remit of this options appraisal but rather would be most appropriately considered if and when a study is commissioned.

4.47   A second requirement concerns better and more robust information on certain groups of young people. This requires changes to the design and administration of the study including the choice of sampling frame, sample selection, the other data that should be linked into the survey; and the administration of the survey. These are all issues that we have responded to in the development of the options.

4.48   Other requirements of the Scottish Government and stakeholders suggest the need for a new approach to the analysis of data and changes to the nature of the contract for the study. In particular, much more longitudinal analysis is necessary to track young people's transitions and examine the relationship between their early circumstances and experiences and their later outcomes. It is also clear that there needs to be a shift of emphasis away from a focus on data collection to one which considers the analysis, dissemination and use of the data as an equal part of the total process. New management arrangements that would enable the active development, promotion and utilisation of any new longitudinal study need also to be considered.

4.49   Clearly the longitudinal study needs to provide data that is comparable over time if it is to monitor trends in transition and to assess the impact of policy change. A further consideration is whether the data collected in Scotland should be comparable across the territories of the UK and with other countries to enable national policy-makers and researchers to understand Scotland's experience in the context of global trends and to 'benchmark' its performance against that of other countries.

CHAPTER 5
OPTIONS FOR THE DESIGN OF A LONGITUDINAL STUDY

5.1   In this chapter we discuss the key issues in the design of a new longitudinal study and make recommendations.   In developing these design options we have drawn on the consultations with the Scottish Government and external stakeholders, reviews of similar longitudinal studies, nationally and internationally, and our investigation of administrative data. We have also drawn on our own expertise as a research team in longitudinal research and survey methodology.

5.2   We first present an overview of the different design options (Figure 5.1) and then discuss each in turn considering their advantages, disadvantages and implications.   The design options cover:
- Age range
- Timing and frequency of contact(s) in compulsory education
- Timing and frequency of contacts after S4
- Frequency of the recruitment of new cohorts
- Interim measures
- Survey administration, including the potential for carrying out the first sweep in school.
- Design of the sample, including whether it should be random, clustered and/or boosted.
- Sampling frame
- Extent to which information can be derived and linked from existing administrative sources

Age range

5.3   As noted in the previous chapter, stakeholders suggested that a new longitudinal study should contact young people while they are still in compulsory education, which is earlier than has been the practice with the SSLS.   Opinion, however, varied about the most appropriate age and stage at which the study should start, ranging from P7 to S3. In considering this question, we return to the focus of the study: it is about '*youth transitions*'.

5.4   Youth, as an economic and social concept, refers to a separate stage in the lifecycle between childhood and adulthood. As such it is a period of transition where young people have to negotiate a complex set of changes at the individual, institutional and societal level as they move from dependence to independence. This move generally involves at least four distinct aspects: finishing full-time education; settling into a more or less stable source of livelihood through employment and/or career choice; moving from the parental home and setting up new living arrangements; and forming close personal relationships outside of their family (OECD 1996). A consideration of what 'youth transitions' refer to therefore helps to set the parameters for the study. While it is important to examine the antecedents of young people's choices and destinations, a decision has to be made as to what are the core concerns of a study of youth transitions and what is feasible within the available resources. Thus, for example, while a study starting in P1 would provide fascinating data, it would be difficult to argue that the collection of data on the early primary stage has priority in a study that aims to document and understand youth transitions.

5.5   It is also relevant, as we outlined in chapter 2, to consider the concept of a 'branching point' in respect of the most appropriate starting age for a study of youth transitions. This

refs to the stage at which young people's educational pathways start to diverge as they make different choices and follow different routes within the education system, with implications for their future destinations. In Scotland in recent years, the end of S4 has marked the end of compulsory education and the point at which a majority of the cohort is eligible to leave school at age 16. It has also marked the end of the stage in which most young people follow a relatively common curriculum based on the national curricular framework and the point at which they take their first set of external examinations. S4 has therefore been a key 'branching' or transition point and is the reason why the SSLS has surveyed young people after this stage.

5.6   But recent and further possible changes in Scottish education mean that the key transition or branching points that have hitherto applied are now less certain, and this has implications for decisions about the timing of a study of transitions. The status of S4 is set to change in the light of a Curriculum for Excellence (CfE) but the precise implications of a CfE for the timing and frequency of a survey are difficult to determine at this stage. Currently there is uncertainty about what CfE will mean for the nature and timing of curricular pathways and young people's transitions or branching points. A Curriculum for Excellence sets out the purposes and principles for education from 3 to 18 in Scotland and aims to develop a more flexible and personalised curriculum (Scottish Executive 2004). Critically, CfE also conceptualises the stages of secondary education in a different way from previously: 15 or the end of S3 rather than 16 and S4 is seen as the threshold age. S4 will be regarded as part of the final stage of secondary education up to S6. CfE conceives of S3 as the end of a distinct phase of education after which young people will follow more differentiated programmes and greater specialisation on an incremental year by year basis. Thus the end of S3 rather than S4 may well become a key transition or branching point. Nevertheless, a Curriculum for Excellence also envisages that external exams will not take place before the end of S4.[6]

5.7   We suggest that there is therefore a strong case that a new longitudinal study should contact young people while they are still in compulsory education, reflecting the timing of young people's 'branching points' and the need to assess and track the effect of the reforms of the compulsory schooling system and the growing curricular flexibility and differentiation on young people's later experiences and outcomes.

5.8   The end age of a longitudinal study of youth transitions can be seen as when young people have reached independent adulthood. We noted in chapter 2 that young people's transitions are increasingly prolonged. Firstly, it is becoming more common for young people to embark on their post-16 paths later than has traditionally been the case, for example to enter higher education later after a gap year(s) or to undertake work-based training in their later teens rather than at 16. Secondly, it now takes longer for young people, including graduates, to establish themselves in the labour market and short-term destinations do not necessarily provide a good indication of medium and longer-term outcomes (OECD 1996, Bynner et al 2002, Purcell and Elias 2004). A third consideration is the policy interest in the motivations, experiences and outcomes of those who return to education in their 20s, perhaps after an unsatisfactory period in the labour market. A further issue in assessing the age at which the study should end is the practical questions: how long can one sustain the participation of respondents in a study and what are the costs of doing so? Overall, the mid to late 20s would seem to be a reasonable outer bound of a longitudinal study of youth transitions.

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[6] These are the intentions of CfE but how schools implement educational reforms in practice may differ from the original plans; this was the experience in the Higher Still reform and the Action Plan and National Certificate.

Figure 5.1: Design options for a longitudinal study

OPTION	Advantages	Disadvantages
Timing of contact(s) in compulsory education		
S1 & S3	Potential to examine pupils' views of Primary/Secondary transition, and experiences up to S3 (end of a CfE stage). Capture early career choices, subject choices, and factors leading to non-participation in education, employment or training	2 sweeps in compulsory stages cost more than 1 sweep. S4 exam results not available for linkage for a considerable time after survey.
S2 & S4	As S1 & S3, plus S4 stage of a CfE starts. S3/S4 exam results can be linked	2 sweeps in compulsory stages cost more than 1 sweep. Longer period elapsed since Primary/Secondary transition
S3 only	1 contact less expensive than 2. Potential to examine pupils' experiences and choices at end of S3 (end of a CfE stage).	Less information about experiences and choices in early stages of secondary school. S4 exam results not available for linkage for a considerable time
S4 only	1 contact less expensive than 2. Potential to examine pupils' experiences and choices at a CfE transition point S3/S4 S3/S4 exam results can be linked	Less information about experiences and choices in early stages of secondary school.
S4+1 year	1st contact point for SSLS – consistent with time-series S3/S4 exam results can be linked immediately	Too late to capture timely explanations of young people's choices – only retrospective information. Limited information on their school experience and lack of prior data to use to control for later outcomes
Timing & frequency of post-S4 contacts		
age 16/17 (ie S4+1 as above)	Key transition point at start of adulthood S3/S4 exam results can be linked Continuity with SSLS	No disadvantages identified
age 18/19	Key transition point between school, HE and training SQA results in S5-S6 and FE can be linked Continuity with SSLS	No disadvantages identified
age 22/23? **OR** age 23/24?	Some young people may finish HE or training by this age – capture outcomes Some early entrants to labour market may have returned to education Some previous SSLS surveys at this age Most young people may finish HE or training by this age – capture outcomes Some previous SSLS surveys at this age	Too soon to capture outcomes of late entrants to FE/HE or Government-supported training, especially gap year students & false-starters. Destinations of graduates may be temporary at this stage – not time to get settled in careers A gap of 4 years between this sweep and the previous one at 18-19
age 26/27?	Capture longer-term outcomes in labour market, housing, family formation & life-style. Pick up later entrants to education and training	Sample attrition more likely over time 5 post-S4 sweeps may be too costly

OPTION	Advantages	Disadvantages
Recruitment of new cohorts		
Every year	Allows for timely evaluation of policy interventions	Very costly, and burdensome on all involved. Time to analyse data is too short before next survey
Every 2 years	Earlier SSLS were 2-yearly Not as costly/ burdensome as annual surveys Frequency allows for consolidation of expertise, interest and awareness of survey Allows for timely evaluation of policy interventions	Cost and burden influenced by both frequency of cohorts and frequency of sweeps
Every 3, 4 or 5 years	Recent SSLS have had 4 year gaps Not as costly/ burdensome as annual or bi-ennial surveys Allows analysis of longer term effects of social and policy change	Long gap between surveys and sweeps associated with loss of expertise, interest and awareness of survey Long gap makes data less relevant to policy makers
Interim S4 cohort (5 years since last SSLS)	The most recent SSLS cohort was recruited at S4+1 in 2003. The earliest that a new cohort can be recruited is 2008. An interim S4 cohort surveyed at 16/17 and 18/19 etc will provide data on post-16 outcomes with a gap of 5 years between cohorts	This option is proposed to run in parallel with the recruitment of a new cohort in the early stages of secondary school
Methods of administration		
Postal questionnaire	Method used for SSLS - Sent to home address - Cheaper than other methods of administration	Low response rates leading to poor quality data
Questionnaire administered at school	Administered within school by survey organisation. Relatively low-cost data collection with very high response rates/minimal attrition Potential for drawing large within-school samples Easy identification and follow-up of non-attenders who may be truants	Needs 2-stage sample – selecting sample of schools – to be cost-effective. Potential burden on schools
Telephone interview	Contacted at home address Better response rates than postal questionnaire, and more potential for filtering questions. Cheaper than face-to-face interviews	More expensive than postal questionnaire. Potential problem of obtaining telephone numbers for some respondents
Face-to-face interview	Better response and data quality than postal questionnaire. May be the only way of obtaining response from hard-to-reach groups	Most expensive option Potential problem of obtaining addresses, and finding respondents at home. Fieldwork may be more convenient and cheaper if sample is a school cluster rather than random.
Internet survey	Cheapest option for some respondents. May be more attractive to some young people than other survey methods. Better response and data quality than postal questionnaire.	Not everyone has access to a computer. Problems of obtaining accurate email addresses.
Mixed methods	Most effective option may be to use a range of the above options ie 1st telephone interview, but use other methods if can't get telephone number	Need to analyse responses gained from different methods to control for resulting bias.

OPTION	Advantages	Disadvantages
Sample		
Random – all Scotland	Ideal for postal questionnaire survey – no design effects	More costly for methods that include face-to face interviews because of dispersal of the sample across Scotland
2-stage cluster sampling	Focusing on selected schools (or selected post-code sectors) brings reduced cost for face-to-face methods. Cluster based on sample of schools best suited to administration within school S1-S4 Post-code sector sampling best suited to administration at home at post-16 stages	Clustered sample brings danger of design effects because pupils in a school are more homogenous than population as a whole (smaller design effects for post-code sector sampling)
Sample of schools + sample of pupils	As above	As above + small sample If administered within school, some disruption to schools in drawing random sample
Sample of schools + whole year group	As above + larger sample size within sample schools, and less disruptive to schools. Provides capacity to analyse non response to later sweeps + construct weights Enables over sampling of groups of interest in later survey sweeps	Slightly more costly because slightly larger sample numbers
Boosted sample of those at risk of non - participation in education, employment or training & other sub-groups	Larger sample numbers of sub-groups of interest, at later sweeps of the survey.	Initial target sample is biased (eg in favour of low attainers and areas of deprivation) and needs weighting to compensate.
Sampling frame		
Administrative data from schools via ScotXed	Pupil-level data for all pupils and all stages at publicly-funded schools, including name, address and telephone number. Includes SCN for data linkage, and pupil characteristics to inform weighting and boosted samples.	Less information available for independent schools and special arrangements will need to be made to collect these. Need to address legal and practical issues re use of unique pupil identifiers
SQA data used for sample	Method used for SSLS Covers all pupils attempting NQ. Includes name, date of birth and SCN	Does not include pupils not presented for NQ (eg low attainers and those sitting other exams). Limited coverage of independent schools For SSLS the details were updated by schools

OPTION	Advantages	Disadvantages
Linking administrative data		
ScotXed data on (1) pupil characteristics (2) attendance etc	Includes ethnicity, 1st language, free-meal entitlement, additional support needs, other schools attended Included termly data on attendance/absence and exclusions. Available at all school stages. Can be linked using SCN	Less information available for independent schools and special arrangements will need to be made to collect these. Needs derived variables to be defined. Need to address legal and practical issues re use of unique pupil identifiers
SQA data	All NQ per year, including details of subject, level of course, institution and result. Available to link to all survey sweeps. Can be linked using SCN.	Needs some work to derive cumulative attainment variables, institution types and progression within subject/faculty. Does not include non-SQA exams
Data from other agencies eg SFC, HEFCE, UCAS	Data on educational courses attempted and qualifications achieved in post-compulsory stages. Should be possible to link by SCN if MIAP strategy progresses.	Data linkage not yet tried and tested. May need permission of respondent.
Data on Government-supported training from Scottish Enterprise	Data on government-supported training including date started, date completed and qualifications achieved – solving problem of lack of awareness by trainees. Should be possible to link by SCN if MIAP strategy progresses.	Data linkage not yet tried and tested. May need permission of respondent.

Options for the timing and frequency of contacts in compulsory education

5.9   We have suggested that a new study should start in the compulsory stage of secondary education but the timing and frequency of contacts at this stage are not easy to determine. We suggest that there are several possible variations in respect of the number and timing of contacts:

- S1 and S3
- S2 and S4
- S3 only
- S4 only

5.10   One obvious consideration in deciding the number and timing of contacts is cost: if the initial sweep is S1 or S2 then another contact would be necessary at least two years later to collect information on young people's more recent experiences and views and also to maintain contact with them.

5.11   As discussed at various points in this report, data on young people's school experience and earlier attitudes and aspirations are necessary to understand their post-school transitions, and this is the rationale for recommending that the longitudinal study should start in the compulsory stage of schooling. But what is the appropriate balance? As noted in chapter 1, this appraisal aims to analyse the needs for longitudinal data on young people's experiences in secondary school and subsequent transitions to further/higher education, training and employment. To achieve this aim, is it sufficient to contact young people towards the end of compulsory education (in S3 or S4) or is a prior contact necessary? A contact in S1 (perhaps in October/November) would, for example, provide an opportunity to collect information about young people's experience of the primary - secondary transition; and their expectations of secondary school, attitudes to education and aspirations at their

entry to the secondary stage. This would provide useful baseline information. A second sweep in S3 would help monitor the greater personalisation and choice envisaged in a Curriculum for Excellence. But more intensive surveying in the lower secondary school would alter the focus of the longitudinal study of young people's post-school transitions to some extent.

5.12   Whether one or two contacts take place in the compulsory stage of school, there would need to be a contact in either S3 or S4. Which would be better? A survey towards the end of S3 would provide the opportunity to collect contemporaneous data on young people's experiences and views at the end of the first stage of their secondary education. On the other hand, surveying them in S4 would gather data on the new provision that they have embarked on while also asking about their early experiences at school.

5.13   A factor to take into account is when attainment data for most young people will be available. Currently most young people take the bulk of their first external exams at the end of S4. Initial results are available from SQA in September and post appeal results early in the following year. If the intention of a Curriculum for Excellence not to bring forward the timing of external exams is realised then this timescale will continue to be the case. This would mean that for young people surveyed in S3 there will be a gap of at least 18 months before their attainment data are available.

Recommendations
- ***The initial contact survey should take place during the compulsory stage.***
- ***If possible, there should be two contacts in the compulsory stages, S1/S2 and S3/S4.***

Options for the timing and frequency of post S4 contacts

5.14   The most recent SSLS cohorts have been surveyed four times, at the ages of 16-17; 18-19; 21-22 and 23-24. We have reported the strong support among stakeholders for an earlier sweep and also the considerable interest in maintaining contact with young people up to their mid or late twenties. But extending the study at both ends and maintaining the SSLS practice of survey sweeps at two yearly intervals is likely to be prohibitively expensive. It may be necessary to consider a trade off between the age range covered and the number of sweeps. It may be appropriate to survey respondents less intensively after 18-19 (while taking measures to maintain contact details) to enable the age range covered to be extended into the mid/late twenties.

5.15   Taking account of both substantive and financial considerations, we suggest that the initial post S4 contacts should be at the ages of 16-17 (the year after compulsory education) and two years later at 18-19. These contact points are well established by SSLS and all of those consulted during the research thought that they continue to be appropriate time points at which to monitor young people's transitions. Surveys at these points capture young people's movements out of school into and through other forms of full-time education and/or the labour market and training, employment and unemployment. Continuing to survey young people at 16-17 and 18-19 will also provide continuity and comparability with the earlier data collected by SSLS. The maintenance of the time series of youth transitions in Scotland (which dates from the mid 1970s) is a unique resource for the country and there is a strong argument for seeking to preserve it, certainly at these ages.

5.16   If it is decided that the cohort will be first contacted in the compulsory stage, it would not be necessary to make decisions about the number and timing of sweeps after the ages of

18-19 until at least 2012 so there is scope to review this. Apart from consideration of the more protracted nature of young people's transitions, another factor to take into account is comparability with SSLS. We suggest that comparability is less of an issue at these later sweeps since the contact at 23-24 is a recent addition to SSLS and response rates have been poor. Considering these various factors, we suggest that a minimum of two sweeps after the ages of 18-19 would be necessary, possibly a sweep at age 22-23 followed by another at 26-27. This, however, is only a tentative suggestion at this stage.

Recommendations
- *We recommend that there should be at least four survey sweeps after S4.*
- *The first two sweeps should be at ages 16-17, 18-19.*
- *Subsequent sweeps could possibly be at 22-23 and 26-27.*

Options for the recruitment of new cohorts

5.17   For a number of years the SSLS recruited a new cohort every two years; this changed latterly and there was a gap of four years between cohorts 3 and 4. There has been no fixed pattern in terms of the gaps between different cohorts in the American and Australian longitudinal studies. The American studies have had the longest gaps between cohorts with studies being carried out in 1972, 1980, 1988 and 2002. The current series of Australian studies have smaller gaps and have started new cohorts in 1995, 1998 and 2003. In England, YCS initially started with annual cohorts but since 1992 these have been biennial with the exception of cohort 13 which was pushed back by a year to coincide with LSYPE.

5.18   In considering how often a new cohort of young people should be surveyed, there are several issues to take into account: what is timely from a policy and research perspective? what is affordable? and what is administratively feasible? We have proposed extending the cohort (starting earlier and finishing later) so from a cost and an administrative perspective it would be better to have longer gaps between each cohort. We suggest the recruitment of a new cohort every four or five years. This suggestion for longer gaps between cohorts was generally viewed favourably in the consultation process, and was seen as reflecting the policy cycle.

5.19   Tables 5.1 - 5.3 give an overview of possible options in respect of the frequency and timing of surveys and the recruitment of new cohorts.

Table 5.1: One initial sweep in compulsory education

	Sweep 1 S4/14-15	Sweep 2 16-17	Sweep 3 18-19	*Sweep 4* *22-23*	*Sweep 5* *26-27*
1st cohort	2008	2010	2012	*2016**	*2020**
2nd cohort	2012	2014	2016	*2020**	*2024**
3rd cohort	2016	2018	2020	*2024**	*2028**
etc					

* provisional only

Table 5.2: Two initial sweeps in compulsory education

	Sweep 1 S1or S2	Sweep 2 S3 or S4	Sweep 3 16-17	Sweep 4 18-19	*Sweep 5* 22-23	*Sweep 6* 26-27
Cohort 1	2008	2010	2012	2014	*2018**	*2022**
Cohort 2	2012	2014	2016	2018	*2022**	*2026**
Cohort 3	2016	2018	2020	2022	*2026**	*2030**
Etc						

* provisional only

Table 5.3: Initial sweep in the year after compulsory education (post S4)

	Sweep 2 16-17	Sweep 3 18-19	Sweep 4 22-23	*Sweep 5* 26-27
Cohort 1	2008	2010	2014	*2018**
Cohort 2	2012	2014	2018	*2022**
Cohort 3	2016	2018	2022*	*2026**
Etc				

* provisional only

Interim Measures

5.20   The contract for SSLS has now ended (March 2007). Table 5.4 shows the coverage of the two most recent cohorts of young people: members of cohort 3 were last surveyed in 2006 at the age of 22-23 while cohort 4 was last surveyed at age 18-19 in 2005.

Table 5.4 Most recent SSLS cohorts and survey sweeps, and proposed interim cohort

	Finish S4 in June of …	Sweep 1 (recruitment) Age 16-17	Sweep 2 Age 18-19	Sweep 3 Age 21-22	Sweep 4 Age 23-24
SSLS Cohort 3	1998	1999	2001	2004	2006
SSLS Cohort 4	2002	2003	2005		
Interim Cohort	*2007*	*2008*	*2010*	*2014*	

5.21   If a new longitudinal study starts in the compulsory stage of schooling then there will be a considerable gap in the data on young people's transitions in Scotland. The very earliest that a new study could be commissioned and in the field is likely to be 2008; this means that the earliest point at which data would be available on young people at age 16-17 is 2010 or alternatively 2012 (tables 5.2 and 5.3). This means a gap of **at least seven years** in the data available from SSLS and the new longitudinal study. We recommend that if the Scottish Government decides to proceed with an initial contact at the compulsory stage, it should seriously considering carrying out an interim study to fill the gap in data between SSLS and the new study. The design and methodology of the interim study could be the same as that of Design B (see chapter 6).

Recommendations
- *There should be a 4-year gap between cohorts*
- *As an interim measure, a new cohort of those in S4 in 2007 should be surveyed in order to reduce the gap in data since the most recent SSLS cohort.*

Options for survey administration

5.22   In the past, the SSLS has been conducted by postal questionnaire. It first contacted young people in the year after the end of compulsory education when a proportion had already left school and a questionnaire was posted to them at their home address. This method of contact has become less effective in recent years because of problems associated with low response rates. However, timing the first contact with young people while they are still in compulsory education opens up the possibility of administering the survey to them in school.

5.23   The key advantage of this approach would be the benefit in terms of response rate. A recent example of a survey administered to a national sample of pupils in schools across Scotland achieved a response rate of 89%; this was without any follow-up procedures to capture those absent on the day (Howieson et al 2006). The ESYTC is another example of a survey that has gained the co-operation of schools and been successfully administered to pupils in the school setting. The ESYTC is particularly interesting since it is a longitudinal study, it has annual sweeps, and it includes the whole of an S1 cohort in schools in Edinburgh. In the publicly-funded schools, the survey achieved a 99.4% response rate to the first sweep and 96% at sweep 2 (McVie 2001).

5.24   The main potential disadvantage of a school-administered questionnaire is the possible burden on schools and their willingness to participate. Several interviewees noted, for example, the negative response of some schools to participation in the Scottish Survey of Achievement (SSA). However a longitudinal survey would differ in certain key respects from the SSA in terms of the demands it might place on schools. The SSA is demanding in that it entails pupils taking attainment tests in a particular subject, as well as filling out questionnaires; it also requires teachers to assess the levels of attainment of sample pupils. Its sample design means that schools have to extract specific pupils from their class. A longitudinal study should be less demanding on schools than the SSA since it would only require pupils to complete a questionnaire and would not involve any teacher assessment.

5.25   Assessing the response of schools to the idea of a survey administered on school premises was not part of the remit of the Options Appraisal. However, a small number of head teachers with whom we have had informal contacts indicated that they would be willing to participate in such a survey. The Association of Directors of Education in Scotland and the Scottish Council for Independent Schools were also positive about a school-based survey. They perceived a longitudinal study of youth transitions as a worthwhile exercise to be involved in and one that could provide them with critical information about the outcomes of schooling. Several commented that it would be helpful if they had easy access to the findings of the study and the scope to identify analyses of specific relevance to them.

Methods for administering the survey in school

5.26   We believe that there are two main options for administering the survey in school to pupils. The first is a paper self-completion questionnaire for the young people to complete

and the second is a web-based questionnaire to be completed online. We have provided costs for both approaches.

5.27   Each option has potential strengths and weaknesses. Paper-based self-completion questionnaires have been used in many school surveys and most schools will be used to the administration procedures. Typically the survey agency commissioned will produce the paper questionnaires and these will either be sent to the school in advance of the survey day or brought to the school on the survey day by the administrator. It is less demanding for the school for the survey organisation staff to administer the questionnaire. Although this is more expensive, it is important in minimising demands on the school and in reassuring pupils about confidentiality. Questionnaires can then be completed by pupils in an appropriate lesson and the only facilities that are required are an appropriate room and the supply of pens. This means that the survey burden for schools can be largely kept to a minimum.

5.28   One of the key drawbacks to using paper based self-completion questionnaires is that data quality is not as high as interviewer-administered and electronic questionnaires. There is no check to ensure that individual items are completed correctly or indeed completed at all. In addition to this, any routing in the questionnaire must be kept to a minimum. These errors or omissions in the data then require edit procedures to be set up which can add greatly to the research costs.

5.29   In a web-based approach data quality is greatly enhanced as the survey software ensures that individual questions are completed correctly. In addition to this, web-based questionnaires can incorporate more complex routing and text substitution in their design.

5.30   The web-based approach also has significant cost and time savings in comparison with paper-based self-completion questionnaires. The cost of programming and hosting a web-based questionnaire is significantly lower than that of printing and scanning the equivalent number of paper questionnaires. The difference in our guideline costs between using a web-based questionnaire and paper questionnaires for an achieved sample size of 10,000 interviews is around £45,000.

5.31   Obviously the web-based approach requires schools to have IT resources and Internet access available for use in survey administration. Where schools have good facilities, a web-based approach should help to minimise the demands on them. In these schools pupils could log onto a website and complete the questionnaire on-line at a time convenient to the school, perhaps as part of a PSE or other class. The questionnaire could be hosted on the survey organisation's website or elsewhere.

5.32   However, while we envisage that all schools will have at least some IT resource and internet access at the time of the new study, the extent of this will vary. Schools with fewer resources would find it significantly more difficult to set aside time for their computer rooms to be used to complete a survey. This would then have the potential to introduce quite serious bias in to the study as school level non-response could be associated with the availability of IT resources within the school. It remains to be seen whether developments associated with GLOW, the national schools intranet, which aims to offer access to all young people in publicly-funded schools in Scotland schools by 2009/2010, might help to facilitate access.[7]

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[7] LTS, the managing agent for GLOW has indicated that it would be happy to discuss the possibility of GLOW being used as the platform in schools for the longitudinal study.

Confidentiality

5.33   Respondents to any survey need to be assured that their responses will be treated in confidence but in a school based survey it is even more critical to reassure young people about confidentiality. If young people are to respond fully and honestly to questions about their school experience they need to be confident that their teachers and other school staff will not see their answers. In addition to the normal statements about confidentiality, various strategies can be used to reinforce the principle of confidentiality, for example, only survey staff being present when young people complete a paper based questionnaire and the provision of envelopes so respondents can seal their completed questionnaire. A web-based questionnaire where respondents send the completed document straight to an external website can also provide reassurance.

Pupils Opting –in

5.34   While pupils in schools are to some extent a 'captive audience' for a survey, it is clearly a fundamental principle they and, depending on their age, their parent/carer must consent to participation. We suggest that this should be done on an opt-out consent method rather than an opt-in basis. Evidence suggests that the requirement to opt-in to a study results not only in lower response rates but may skew the sample because certain sub-groups in the population are less likely to opt-in. The experience of the ESYTC gives an indication of impact of the opt-out consent method on response rates. In this case, the ESYTC team sent out letters to parents explaining the study and offering them the possibility of opting their child out of the study. This resulted in an overall opt out rate of only 3% (McVie 2001).

Coverage of young people

5.35   While a survey administered in school offers the enormous advantage of high overall response rates, the problem of contacting those who are absent or in alternative provision remains. There is also the question of whether a study should cover young people in special schools.

5.36   In respect of absentees, they need to be identified and asked to complete the questionnaire on a subsequent occasion by the most appropriate method. In all likelihood this would best be achieved by following up the young person away from the school as this would minimise the disruption that would be caused to lessons etc. by holding a second survey day on school premises.

5.37   As absentees will potentially be of high interest for the study we would recommend that extensive efforts be put in place to follow up these young people. We would expect that multiple methods of data collection would need to be employed to reach absentees. While initial attempts would be made using postal questionnaires (likely to be completed by some absentees) telephone and face to face follow-ups would be required to gain the participation of the more reluctant.

Pupils who move schools

5.38   Pupils who move schools are a group of interest in policy terms, for example, frequent school moving can be associated with low attainment and increase the likelihood of them not being in education, training or employment after leaving school.   We suggest that a longitudinal study should aim to follow up respondents who move schools within Scotland even if they subsequently attend a school not in the sample.

Pupils not in school

5.39   A longitudinal study will also need to consider specific arrangements to include those pupils who do not attend mainstream schooling on a regular basis. This group includes pupils who are in alternative educational provision, those who have been excluded and chronic truants. These are among the groups of most interest in policy terms.

5.40   Interviewing young people who are in alternative educational provisions can follow a similar model to that of the young people in mainstream education. The institutions would be contacted by researchers in the first instance in order to gain co-operation, and then the survey would be administered on site. Special measures may be required for young people with additional support needs including the interviewer on site reading out the questions to respondents.

5.41   However, interviewing chronic truants and the long term excluded will require extra measures and, as a result, will be considerably more costly than interviewing other pupils. Potential approaches for interviewing all absentee pupils are detailed above and it must be assumed that these particular groups of absentee pupils will require the most proactive data collection with telephone and face to face follow ups.

Pupils with additional support needs

5.42   SSLS has not included special schools which cater exclusively for young people with additional support needs although those pupils who had been presented for SQA awards are likely to have been included.[8] SSLS has included young people with additional support needs attending mainstream schools; this has become increasingly common in a policy context which promotes the 'mainstreaming' of school pupils with such needs (Scottish Executive 2002).

5.43   We suggest that a new study should consider including young people with additional support needs in mainstream schools and units attached to mainstream schools. But to do so effectively, it has to be recognised that this will require additional resources. For example, to ensure the meaningful participation of young people with mild to moderate learning difficulties, it would be necessary to employ various strategies such as extra survey staff to act as readers or to administer the survey on an individual basis using CAPI. If and when a longitudinal study is put out to tender, these would be aspects that organisations tendering should be asked to address. But we would point out that there is a limit to what a general survey can do before it becomes prohibitively expensive or tokenistic - for some young people a specific study designed to address their circumstance and needs would have to be funded.

Using mixed methods for administering the survey

5.44   Mixed methods of administering the survey are most appropriate for surveying young people outside of the school context – especially (but not exclusively) for surveys at the post-compulsory stages.   Respondents are contacted at their home address using a mixed methodology of telephone, postal, web and face to face interviewing. The principle behind this mixed-method approach is to ensure a high level of coverage while at the same time maintaining cost efficiencies.

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[8] This is because the SQA record is used as the sample frame for SSLS.

5.45   Response rates using mixed methods are considerably higher than surveys carried out by postal questionnaire alone. If there is a telephone number for the young person s/he can be interviewed by telephone, but where this proves impossible the survey team can send an interviewer to "chase" and carry out a face-to-face interview. Experience with the YCS found that telephone numbers were only available for a minority of the sampled young people (30%). In addition to this there was actually a marked difference in the availability of telephone numbers by attainment (telephone numbers were available for 40% of the young people with 8+ A-C GCSEs compared with 11% of those with no qualifications). Given that having a telephone number significantly increased the response rate across all groups, this exaggerated a trend that was already present in the postal-only respondents that made up the bulk of the YCS sample.

5.46   However, for the Scottish sample there will be telephone numbers for a larger proportion of respondents, and we are proposing a face-to-face "chase" for non-responders, so the difference between attainment groups should not be pronounced. In addition, all respondents can be given the option of an internet questionnaire. Further details of this method, with appropriate cost estimates, are shown below as a section of our recommended options.

5.47   While a major advantage of using a mixed-method approach is higher response rates at a reasonable cost, care must be taken in questionnaire design because different modes of data collection can sometimes produce different results. It is therefore important to ensure that the questionnaire is designed using "unimode construction", that is the writing and presenting of questions to respondents in a way that produces (as far as practicable) a common mental stimulus regardless of survey mode (Dillman 1978). The main principles of unimode construction are
- Making the response options the same across all modes.
- Not changing the basic question structure from mode to mode.
- Reducing the number of response categories to achieve mode similarity.
- Dealing effectively with routing on the self-completion questionnaire.

5.48   These principles will have to be followed when designing the questionnaire for the follow-up sweeps, in particular, the questionnaire structured for telephone interviewing as this approach differs most from the other forms of data collection.

Recommendations
- ***Surveys at the compulsory stages should be administered within the school context by a survey organisation using paper and internet questionnaires. Mixed methods should be used to contact non-attenders and those in alternative educational provision.***
- ***Surveys at the post-compulsory stages should be administered by mixed methods including telephone interviews, face-to-face interviews, postal and internet questionnaires, in order to maximise response.***

Sampling Options

Sample design

5.49   The overall aim of sample design is to achieve a nationally-representative sample of young people in Scotland so that findings of the survey provide a representative picture of young people's experiences and pathways. However, creating a nationally-representative sample is problematic because of differences in response rates. In recent years, the SSLS had

very low response rates from some groups of young people, and this meant that the sample did not adequately represent the low attainers, truants or those not in education, training or employment or those at risk of being so, even after applying weighting procedures. Achieving high response rates is the most important way of reducing this problem.

5.50   Ideally, the overall sample size of the study will be fairly large, in order to cover the main variations in young people's experiences, including urban and rural differences. We estimate that an achieved sample of 10,000 at sweep 1 will provide a good level of coverage of those young people at risk of not engaging in education, employment or training. However, there are issues concerning geographical variations in the composition of the population. For example, young people from minority ethnic groups form a significant minority of the school population (over 10,000 secondary school pupils in Scotland were from minority ethnic groups at the 2005 school census (Scottish Executive 2006c)). But they tend to be fairly concentrated in particular areas and schools, for example, they were 10% of the Glasgow secondary roll, compared with 3% in the country as a whole. Thus, a simple random sample of the whole of Scotland, such as that used in the SSLS, produced relatively small sample numbers of minority ethnic pupils. On the other hand, young people living in the rural areas of Scotland are sparsely distributed and attend relatively small schools.

5.51   We believe it is essential for the longitudinal study to cover the whole of Scotland so that policy issues such as migration from rural areas can be investigated. We are aware that some surveys restrict their samples to the mainland areas of Scotland south of the Great Glen in order to reduce field work costs, but we do not believe this practice is appropriate for a longitudinal study of Scottish young people.

5.52   It may be possible to boost the initial samples to ensure that sub-sample numbers in particular categories are large enough for special studies – for example, young people who live in areas of deprivation or young people from minority ethnic groups could be over-sampled in order to ensure large numbers for analysis. However, boosting the sample in this way would alter the overall representativeness of the sample, and care would be needed to identify and document over-sampled sub-groups.

5.53   The target population from which the sample for the new study would be drawn is the cohort of young people in the same year stage (eg S4) of compulsory schooling in Scottish schools, including both publicly-funded and independent schools, but not special schools.[9] The proposed sample includes pupils with additional support needs in mainstream schools, but excludes pupils in special schools, and children educated at home because in each case sample numbers would be too small for analysis, and a disproportionate amount of survey resources would be needed to include them. (Special studies based on boosted samples would be more appropriate for these groups).

5.54   To some extent, the sample design is dependent on the methods to be used to administer the survey. The SSLS is a postal questionnaire survey, and for this type of survey a random sample is ideal because all addresses in Scotland can be reached by post at no extra cost to the survey. However, as we have noted, response rates to postal questionnaire surveys have been poor. Other methods of administering the survey are recommended in order to ensure the highest possible response rates, but these are more labour-intensive and so require some clustering of the sample in order to be cost-efficient. For example, if the first contact of

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[9] In the past, the sample for the SSLS has been drawn from the whole population of S4 pupils, with sample members drawn from every secondary school in Scotland, excluding Special Schools. It was a simple random sample, drawn on the basis of birth-date: for example, selecting pupils born on the 5th, 15th and 25th days of each month provided a 10% sample of the S4 population. Sample details for the selected birthdates were provided from administrative records.

the survey is to be administered within the school, it becomes necessary to select a sample of schools in which to conduct the survey. In this case, a 2-stage process of selecting a sample is needed, and the most appropriate method seems to be first to select a representative sample of schools, and then a representative sample of pupils within each school. The main disadvantage of a sample that is clustered by school is that this type of sample tends to be associated with a "design effect" because the within-school sample of pupils is more homogeneous than pupils in the overall population, and the design effect must be controlled for in all analyses.

5.55 Similarly, if the first (or subsequent) contacts are to be administered at the home address by mixed methods that include face-to-face interviewing with hard to reach groups, it is more cost-efficient to have the sample clustered by geographical areas rather than scattered across Scotland. In this case, an alternative method of sampling would be to cluster by post-code sectors (as has been done in YCS). Clustering by post-code sector is more efficient for fieldwork where mixed methods of survey administration are used, including telephone interviewing backed up by face-to-face interviewing. There is some indication from BMRB's work in England that there are lower design effects where samples are clustered by post-code sector.

Selecting a sample of schools

5.56 At the 2005 school census, there were 442 secondary schools in Scotland – 385 publicly-funded schools and 57 independent schools (Scottish Executive 2006c). A decision needs to be made as to the number of schools to include in the sample – and this is a trade-off between reducing survey costs on the one hand, and reducing the design effects of clustering on the other. Although in general selecting fewer schools will reduce both the operational and fieldwork costs, pupils selected from the same secondary school will tend to be more homogenous than pupils in the general population. The design effect of selecting a sample that is clustered in this fashion is equivalent to a reduction in the total sample size. Keeping everything else constant, the fewer schools selected the higher the design effects due to clustering and the smaller the effective sample size.

5.57 With this in mind, we propose that 150 schools (approximately one third of Scottish secondary schools) should be included in the surveys of each cohort – 130 publicly-funded schools and 20 independent schools (see Table 5.5). The school-roll size and socio-economic characteristics of secondary schools vary enormously across Scotland, and it will be important that the sample of schools selected for the survey should be representative of this range.

5.58 The method of sampling needs careful consideration. One approach would be to take a simple random sample of schools. In this case, we must take account of the fact that there are a larger number of small schools than large schools. So, the proportion of pupils sampled within each school would need to be constant, otherwise the sample of pupils might be un-representative because the larger number of small schools (mostly rural) would have a greater chance of selection than the smaller number of larger schools (in city areas). Another method of selecting schools might be to choose a sample stratified by known characteristics, including size, geography and local-area deprivation. A further possibility is to sample secondary schools with probability proportional to the number of pupils, in which case, if the same number of pupils is selected within each school, each pupil will have the same chance of being selected in the sample; however, a disadvantage of this approach is that it might reduce the representation of small rural schools. The SSA already has an established

methodology for selecting schools, and any future longitudinal survey should learn from this experience.

Approaches to securing the participation of schools

5.59   The main source of non-response at the first sweep of the research, and therefore potential bias, will be schools which refuse to participate. While there will also be non-response from parents who opt out of the study and from young people who cannot be located, these will be of a significantly lesser order. As such, achieving the participation of the proposed 150 schools will need to be the main target at the first sweep of the survey. To achieve this we recommend that a reserve sample of schools is drawn at the same time as the main sample to compensate for any problems that might be encountered at the fieldwork stage.

5.60   A recent report for DfES by the University of Surrey and BMRB set out a number of ways in which school level response rates can be increased (Sturgis, Smith and Hughes 2006). This research was commissioned as a critical review of the very low participation rates among English schools in PISA 2003, but contains useful observations and recommendations at a more general level. One of the report's key findings was that schools felt overburdened by the number of research requests that they receive and this is something that, anecdotally, we understand is also happening within Scottish schools. We suggest that the Executive should review its other school based research so that, as far as possible, schools are not asked to take part in more than one survey in any year. It would help to encourage schools to participate if they could be reassured that efforts are being made to rationalise and co-ordinate the demands being made on them in respect of the variety of national and international surveys in existence.

5.61   Ensuring that the study is high profile and viewed as relevant and useful will also be an important factor in increasing schools' participation. In addition to the support of the Government, it will also be beneficial to secure endorsements from other relevant parties such as local authorities. In the American study ELS:2002 the sampled schools received letters from responsible officers at the state and/or district level endorsing the study and a large number of endorsements were gained from various professional and voluntary organisations such as the American Federation of Teachers, National Association of Independent schools and the National Parents and Teachers Association. We suggest that similar endorsements should be secured for any new longitudinal study from the relevant organisations and groups in Scotland.

5.62   Flexibility in approach and a respect for the concerns that the schools have in taking part in the research will also help to increase participation. The ESYTC managed to recruit all mainstream schools in Edinburgh for the study, in part due to the flexibility they were able to show. The structure of the study was such that schools were given a relatively long fieldwork period within which they could conduct the survey. In addition to this, the research team negotiated with the schools as to whether the survey would be conducted in a single day or spread over a number of weeks to suit timetable patterns. While there were practical benefits for the research team in conducting the survey over one or two days, school preferences were paramount.

Sample Size

5.63   We estimate that an achieved sample of 10,000 respondents is required for the first sweep of the study, so that there will be sufficient sample numbers of low attaining young

people, and those who are not in education, employment or training, at future sweeps which will inevitably suffer some attrition.

5.64   The 2005 School Census shows the overall number of pupils in a given year stage eg over 60,000 in S1 (Scottish Executive 2006c). If, as proposed, 150 schools are selected then the numbers per year stage in 150 schools will be over 20,000 on average (Table 5.5).

Table 5.5: Estimated sample numbers

National Population (2005 census)	Publicly-funded	Independent	Total
Number of secondary schools	385	57	442
Number of pupils in S1	58879	2846	61725
Average per school	152.9	49.9	139.6
Initial Sample estimate			
Number of secondary schools	130	20	150
Total number of pupils in S1	19881	999	20880
Numbers for administration of 1st contact within school			
Target sample @ 50% of year stage within sample schools	9941	499	10440
Estimated achieved sample based on 97% response rate	9642	484	10127

Pupils in Scotland 2005, Statistical Bulletin Edn/B1/2006/1. Revised version April 2006

5.65   If the 1st contact survey is administered within the school, we can hope for a 97% response rate on the basis of other surveys. Thus, a 50% sample of the year stage in sample schools will be sufficient to provide a sample of 10,000 if the sample is administered within the school.

5.66   However, if the 1st contact survey is administered at home using mixed methods (ie interviews by telephone, face to face, or internet) expected response rates may be between 65% - 70%. In this case, to get an achieved sample of 10,000 it would be necessary to start with an initial sample of 14,250 - 15,250 pupils.

5.67   If we are more pessimistic, and assume that the response rates among young people who are low attainers or not in education, employment or training are as low as 60%, we estimate that the achieved sample numbers at the 1st contact will be will be around 1,400 – which should be sufficiently large for most analyses.

Selecting sample members within schools

5.68   As shown by Table 5.5, a 50% sample of pupils within selected schools should provide a 10,000 achieved sample if the first survey sweep takes place at some point during the compulsory school stages S1-S4. Nevertheless, we recommend that the whole year group of pupils should be included in the initial contact, since it tends to be easier and less disruptive for schools to provide access to a whole year group rather than requiring them to extract individual pupils from a class on a random basis (as is the case with the SSA). We considered an alternative approach of selecting whole classes from the year group, but fear

that the sample would be biased since membership of classes may be subject to ability-grouping. Surveying the whole year group within the sampled schools would reduce the risk of bias.

5.69   A major advantage of surveying the whole year group in the sample of schools is that it would provide the capacity to analyse the nature of non response to subsequent sweeps and to construct weighting variables on a sound basis. It would also provide the basis for over sampling of certain sub-groups in later sweeps of the survey.

5.70   The collection of data on the whole year group in the selected schools also offers the possible basis for a range of other studies on a cost-effective basis. It would be possible, for example, to link the survey data to other administrative data which is routinely collected for the full year group; such a combined dataset would provide a rich resource for cross-sectional analysis of specific issues. It may also be worth exploring the potential of a survey of a whole year group to provide the basis for the selection of samples for other follow-up surveys.

5.71   The main disadvantage is cost; as we detail in the next chapter, we estimate that the difference between surveying a sample of young people (10,000) compared with a year group (assuming 20,000 young people) is in the region of £10,000 and £32,500 depending on whether a paper or web-based the method is used.

Selecting a sample where the 1st contact survey is administered at home by mixed methods

5.72   If the survey is to be administered at home using mixed methods as in Design B, the sample could potentially be drawn as a random sample of young people, as was the design for SSLS. However, the field work costs for a completely random sample would be relatively high, and we recommend that a sample be drawn on the basis of post-code sectors to reduce the field work costs. ScotXed records should be used as a sampling frame to draw random samples by post-code sector. We estimate that a target sample of 14,250 to 15,250 pupils may be necessary to achieve 10,000 respondents in view of the higher levels of refusal or non-response that are likely.

Sample frame

5.73   The sampling frame for SSLS has been the records held by the SQA. These records only cover those who have been candidates for SQA examinations and so exclude the minority of students who have taken examinations offered by other providers as well as pupils who have not been entered for public examinations. Schools are therefore asked to supplement the sample drawn from the SQA records with other eligible students. The SQA record provides the young person's name, home address, date of birth, gender, presenting centre, exam presentations and awards.

5.74   We propose that the data collected as part of the ScotXed data exchange scheme[10] should be used as the sampling frame for a new longitudinal study. The data that ScotXed holds are drawn directly from schools by Local Authorities who make a return to ScotXed, and they offer a number of advantages over the SQA record as a sampling frame. If the first sweep of the longitudinal study is to take place earlier in compulsory education then many young people will not have yet been entered for external exams and so will not have an SQA record. ScotXed data have a further advantage in that they also include pupils who are not

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[10] For simplicity we refer to this as the ScotXed data.

presented for external exams. The ScotXed data therefore offer a more comprehensive sampling frame than the SQA record.

5.75   Another major advantage of ScotXed data as a sampling frame is the additional information that they hold on young people including free school meal entitlement; looked after status; ethnicity; nationality; asylum status; home language; previous school attended; and a variety of information about additional support needs including whether the pupil has an Individualised Education Programme or Record of Needs, the level and nature of their difficulty, the extent of integration, and the extent of support and adaptation needed. This extra information provides the capacity to boost the sample of particular sub-groups of policy concern.

5.76   The main disadvantage of ScotXed as a sampling frame is that it does not include data from independent mainstream schools[11] (it covers publicly-funded schools and independent special schools). The ways pupil data are held by schools in the independent sector are diverse and several different management information systems are used. However, a number of the independent schools, especially the larger co-educational day schools, use the Phoenix Management Information System while others use SEEMIS. These are the two management information systems in use by publicly-funded schools in Scotland from which data are supplied to ScotXed. It would be necessary for any future survey team to work with the independent schools to collect appropriate pupil-level data for inclusion in the sampling framework.

5.77   It also must be remembered that the data to ScotXed are supplied by schools and so reflect their knowledge of pupils and their circumstances. In the case of looked-after children, for example, they may not have complete knowledge of this and it may be necessary to supplement it with information from the Local Authority.

Parental information and possible parental interviews

5.78   The SSLS asks young people for information on their parents'/carers' education, status and occupation; these data are used to construct socio - economic variables which are central to the analysis of social inequalities. Since the SSLS is sent to young people at their home it is possible for them to check such information with their parents/carers. Obviously if the survey is administered in school then this is not possible. One strategy would be as part of the briefing process to ask young people to consult their parents about this in advance of completing the questionnaire; this could be reinforced through the communications with parents/carers as part of the consent procedure.

5.79   An alternative approach would be to include a direct contact with parent/carers to collect data on their education and employment history as well as information on their involvement in their child's education and their aspirations for their child. This was an option supported by a number of Scottish Government staff and external stakeholders in the consultation.

5.80   In England parental interviews form an integral part of LSYPE and have also been used in the American study ELS:2002. If parental interviews were to be adopted as part of the new study, we would recommend for reasons of economy that the approach taken should be similar to that of ELS:2002, that is a 15 minute telephone interview conducted at the time of the first sweep. If a sample of pupils has been surveyed then all of their parents/carers

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[11] The SQA record does not provide a comprehensive sampling frame for independent schools either since many pupils are not entered for SQA awards. There is no simple solution to a sample frame for the independent sector.

would be contacted. If a whole year group in the sample schools has participated, the costs of interviewing all parents/carers would be prohibitive and so it would be necessary to sample parents/carers. This would be done by first selecting the sample of pupils to take part in the post S4 sweeps and interviewing their parents/carers.

Recommendations
- ***The size of the achieved sample at the initial sweep should be 10,000 pupils.***
- ***The sample should be representative of the whole of Scotland.***
- ***If the first survey sweep is to be carried out within the school context, the sample should be clustered by school, with a sample of 150 schools selected to provide a nationally representative sample. The whole year group within the sample schools should be included in the initial sample to avoid disruption within the schools.***
- ***If the first sweep is to be conducted at the home address using mixed methods, the sample should be clustered by post-code sectors, to provide a nationally representative sample.***
- ***It may be appropriate to over-sample sub-groups of pupils at the initial stages.***

Options for linkage of administrative data

5.81   There is considerable potential for using factual data from administrative sources to provide components of a longitudinal study of young people's transitions. Administrative data can complement the proposed survey by providing information for sampling and tracing as well as data of a factual nature on qualifications and destinations thus reducing the amount of factual information that needs to be asked in a survey. However, administrative data are not an alternative to a survey because they cannot provide information on young people's attitudes, aspirations and choices, and cannot be used to explain differences in young people's transitions. Possible sources of administrative data at different ages and stages are illustrated by Figure 5.2, and further details of each are listed in Appendix 4.

5.82   We suggest that administrative data should be used for three key purposes:
- To provide background details for selecting a cohort sample, including boosted samples of young people who may be the focus of policy interest, such as those most likely to not to engage later in education, employment or training.
- To track the destinations and statuses of sample members at later stages of the study to alleviate problems of non-response to the survey.
- To use data on education, training and other activities at different stages or phases of young people's transitions that can be linked to survey data within the longitudinal study.

Figure 5.2: Administrative data by age/stage

Ages/stages				
12-18	**ScotXed** *Personal characteristics:* Sex, date of birth, first language, ethnicity, nationality, religion, free school meal entitlement, looked-after status, disability, special educational needs, postcode (to which area deprivation can be linked), *Attendance:* Measures of attendance, different types of absence, and exclusions *Schools attended:* Indicators of pupils who moved schools between stages; school contextual information			
12 onwards	**Scottish Qualifications Authority (SQA)** *National Qualifications:* Record of each NQ attempted and its result at • school • college • training			
15-18	**Careers service survey of school leavers** *Post-16 destinations: education; training; job; not in education, employment or training*			
16+	**Further Education Statistics (FES):** Information on courses attempted at FE college, including level and result	**Scottish Qualifications Authority** Information on national qualifications, Higher National awards and Scottish vocational qualifications	**Scottish Enterprise** Information on government-supported training including type, length and result	
17+	**UCAS** Applications to HE: Information on which courses applied for and which accepted	As above	As above	
17+	**HESA** Higher Education courses attempted, completed or dropped	As above	As above	
18+	As above	As above	As above	**Department for Work and Pensions/ Work Centre Plus** Information on participation in government programmes eg New Deal, Employment Zones and Action Team for Jobs

Policy developments relating to administrative data

5.83   Recent developments in computerised systems for administering education, training and qualifications have made it possible for the Scottish Government to access data from schools, colleges, universities, training providers, the Careers Service, and Scottish Qualifications Authority.   These developments have greatly increased the quality of information on the outcomes of education and training. However, at present data from different sources are not routinely brought together for longitudinal analysis purposes. For example, in Scotland there are no plans to copy practice in England with respect to the

creation of the Department for Children, Schools and Families data warehouse and National Pupil Database (Jones and Elias 2006).

5.84   The use of existing data from a range of sources is part of the Scottish Government's strategy on Managing Information Across Partners (MIAP).[12] The aim of the Scottish MIAP strategy is to *"generate an environment whereby high quality information is available to inform decision-making at all levels in such a way as to provide benefits to all learners and other stakeholders in the Scottish Education Sector"* (Mason 2006).

5.85   The MIAP strategy is part of the Open Scotland Information Age Framework (OSIAF) which provides common frameworks for sharing person-level data between government departments.   An example is the Scottish Exchange of Educational Data (ScotXed) framework which enables the sharing of pupil-level data between schools, local authorities and government departments and agencies.   Already statisticians within the Schools Directorate link ScotXed and National Qualifications data in order to analyse differences in attainment among school leavers (Scottish Executive 2007a).

5.86   However, a recent report on MIAP explored difficulties in linking data from different stages of learning, especially from school to further and higher education, and argued: *"Trying to track learners through programmes of education ... can be difficult. It is however very valuable information. From analysing returns already in existence one can monitor activity in a particular phase of education **but the real added value comes when data sets can be linked across phases of learning**."* (Mason 2006, section 8 – our emphasis).

5.87   The longitudinal study proposed in this report could provide a focus for linking information about Scottish learners across different phases of their learning and transitions. For selected cohorts the study would link factual data collected by different government bodies with survey data from young person on their experiences, their attitudes, aspirations and choices in order to track and explain the routes taken by different types of young people through education, training and the labour market.

Use of administrative data for sample details and weighting

5.88   Throughout its history the sample for the SSLS has been provided from administrative sources. Initially the name, address, sex and date of birth of the sample was transferred manually from school administrative records. From 1993 onwards the sample was extracted electronically from the SQA records, and passed to schools for updating. These methods produced nationally-representative samples of young people in the Scottish S4 cohort, including independent schools.

5.89   We noted earlier that the development of the ScotXed framework provides the opportunity to select samples of young people from publicly-funded secondary schools with more detail, and much less effort, than in the past, and it also provides the opportunity to collect sample details at earlier year stages and has the potential to identify boosted samples of certain sub-groups of young people.

5.90   Linkage of ScotXed data would also be extremely useful in weighting procedures. Data on the characteristics of sample members are useful in order to provide weighting systems to compensate for non-response bias.   In past SSLS a weighting system was developed which compared the numbers of respondents in each category of attainment and sex with the relevant numbers in the S4 population as a whole. Linkage of ScotXed data

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[12] The Scottish MIAP strategy is linked to similar developments across the UK (see http://www.miap.gov.uk/)

would enable the proposed longitudinal study to derive a weighting system based on a wider range of variables (which will be particularly important if the initial sweeps are in S1 or S2, when National Qualifications data are unlikely to be available).

Use of administrative data for tracking sample members

5.91   Reducing sample attrition is very important for the proposed longitudinal study, so that sample members are not lost through non-contact or non-response at later survey sweeps. In some cases administrative data sources may provide a means of renewing contact with sample members, and in other cases they may provide some limited information of the characteristics of non-respondents.

5.92   While young people are under the age of 19, they may be tracked through the ScotXed and Careers Scotland datasets using the Scottish Candidate Number (SCN) as a means of identification.   For example, young people may have changed addresses and schools between the S1 and S6 stages, and this information is recorded in ScotXed returns which include SCN. In addition, Careers Scotland has procedures for contacting young people up to the age of 19, and has particular interest in contacting (and helping) those who are not in education, employment or training.

5.93   At later ages the tracking of non-contacts and non-respondents becomes messier. In the near future, when the system of data sharing becomes better established, it should be possible for a list of SCN to be checked against the records of the Scottish Funding Council, the Higher Education Statistics Agency (HESA) or Scottish Enterprise in order to ascertain whether they are currently recorded in education or training. (It may also be possible for a list of names and other details to be checked against the records of the Department of Work and Pensions (DWP), but this may be more problematic.)

5.94   If prior consent has been given by each sample member, these agencies can be asked to provide status information and new contact details for those tracked through their databases.   However, if the relevant agency is unwilling to provide this information they could be asked to forward a letter to the sample member.

Longitudinal data from administrative sources

5.95   Administrative data can provide valuable factual information about young people's qualifications and destinations.   For example, there are already many analyses of young people's attainment derived from SQA administrative data.   In particular, the factual administrative data can be linked to survey data which provides complementary information such as young people's choices, perceptions and attitudes.

5.96   In England efforts are being made to create longitudinal datasets by linking data from different administrative sources, for example, the National Pupil Database developed by the Department for Children, Schools and Families (formerly DfES) which records pupil characteristics, attendance and attainment at school, linked to the Individual Learner Record developed by the Learning and Skills Council (LSC) which records college courses and achievements including work-based learning, to which data on Higher Education are now being added (see Jones and Elias 2006, chapter 2).

5.97   In Scotland, the linkage of administrative data has not progressed to the same extent as in England, but recent reports commissioned by the Scottish Government MIAP group

suggest some ways forward (Mason 2006). Key requirements of data for developing a longitudinal study are that they should be available at individual-level,[13] and should include a unique identifier in the form of the Scottish Candidate Number (SCN). These issues are discussed in the recent MIAP report (Mason 2006) and further research has been commissioned by the MIAP group to investigate the potential for using the SCN as a unique learner number in tertiary education and training.

5.98   The most detailed and comprehensive data on Scottish young people are those covering the school stages between ages 12 and 17/18; ScotXed data cover all pupils who attend state-funded schools, while SQA data cover all students who study Scottish National Qualifications (NQ) and Vocational Qualifications (SVQ). The main gaps with these data relate to pupils attending independent schools, and students studying for non-SQA qualifications. Some thought needs to be given as to how to collect comparable data on these small minorities of pupils in the cohorts included in the longitudinal study.

5.99   In addition, Careers Scotland holds comprehensive data on young people in state-funded schools from age 12-19 for purposes of providing appropriate careers advice. These data are subsequently linked to information on young people's first destinations after leaving school, collected by Careers Scotland through its annual survey. The Careers Scotland survey contacts each young person directly to find out what they are doing, and an important aim of this survey is to identify young people who are not in education, employment or training so that these young people can be offered help from a careers adviser. Thus, the Careers Service survey of leavers' destinations provides comprehensive coverage of a single piece of information – which can be linked to the proposed longitudinal study using SCN. Independent schools have separate provision for careers advice, and their information on leavers' destinations is provided by each school, rather than by the young person.

5.100 Potentially, individual-level data on young people studying in further and higher education, including qualifications attempted and whether or not they are achieved, should be available from FES and HESA (and also perhaps data on higher education applications from Universities and Colleges Admissions Service (UCAS)), but at present the linkage of these data to ScotXed records is not well established. The recent Scottish MIAP report discusses models for improving the quality of such data and linkage (Mason 2006).[14] The English MIAP is developing Individual Learner Records from data supplied by Colleges and linking these with the National Pupil database. Work is also underway to match HESA data to the National Pupil database for a research study on "Widening participation in Higher Education" (Jones and Elias 2006). Although at present it is not straightforward to link data from school and post-school education sectors, it seems that new frameworks are being developed to facilitate data sharing so that in future it will be possible to link data on Scottish learners from administrative sources for the proposed longitudinal study. Staff at the Scottish Funding Council described to us the work they were undertaking to link data from Further Education Statistics (FES) to data from the Higher Education Statistics Agency (HESA), Universities and Colleges Admissions Service (UCAS) and Students Awards Agency for Scotland (SAAS). At present SCN cannot be used for linkage, and the data link uses surname, initials, gender, date of birth and postcode, but in future the use of a unique learner number will facilitate linkage.

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[13]By contrast, the report by McGregor *et al* (2006) **Evaluation of Measurement Options for those Aged 16-19 Not in Employment Education or Training** (Scottish Executive Social Research) is more concerned with aggregate data for measuring the size of the group of young people not in education, employment or training.
[14] Some of the problems in use of SCN that were identified would not apply to the cohorts of young people in the proposed longitudinal study because all Scottish pupils are allocated SCN at school.

5.101 Similarly, data collected by Scottish Enterprise on young people in government-supported training (GST) could provide valuable information on the experiences of young people in training. Scottish Enterprise holds records of young people undertaking a range of training schemes, such as Skillseekers and Training for Work, including dates of starting, leaving and completing the programme, details of any qualification attempted/completed, and personal details such as date of birth, gender, and phone number. SCN is included in the record so that qualifications can be verified from the SQA and other vocational qualification boards. Data on qualifications are thought to be robust because payment to the Training Provider is dependent on qualifications achieved. Other information recorded by Scottish Enterprise includes whether the young person has "employed-status" as a trainee, information on the employer including Standard Industrial Classification (SIC), and subsequent progression by the young person after completion of a programme. Scottish Enterprise data on government-supported training would be especially valuable for a longitudinal study of young people's transitions in view of the problems with eliciting information on training from surveys. Although linkage of these data to ScotXed is still difficult, staff at Scottish Enterprise explained the moves they were currently making towards an internet-based system of data sharing, and it should be possible for data on government-supported training to be linked to the cohorts included in the proposed longitudinal study. (For example, following the previous SSLS design, a cohort of S4 pupils in session 2007/8 might be surveyed at age 18 in 2011, by which time processes of data linkage should be much better developed.)

Summary of administrative data that should be linked to the survey data

5.102   Administrative data to link with pupils' responses at 1st contact in compulsory stage:
- ScotXed data eg ethnicity, additional support needs, looked after status, FME etc
- SQA records (and other exam boards)
- Careers Scotland database
- Contextual information on the school
- Contextual information on pupils' home area

5.103   Administrative data for updating or new linkage in subsequent sweeps:
- ScotXed data
- SQA records (and other exam boards)
- Careers Scotland database
- Contextual information on neighbourhood
- FES data on participation and attainment in further education
- HE data – UCAS, HESA, SAS
- Scottish Enterprise data on participation and achievement in government-supported training
- JobCentrePlus data on adult programmes

The legal framework for administrative data linkage

5.104   At present the legal position regarding administrative data sharing and linkage is not well defined. Section 33 of the Data Protection Act 1998 states that administrative data may be used, where appropriate, for "statistical and historical research". Sharing of administrative data is also subject to the Human Rights Act 1998, which protects individuals' right of confidentiality.

5.105 Jones and Elias (2006) suggest that the application of the legal framework means that *"departments must be careful to ensure that data sharing is lawful and that confidentiality is*

maintained. In practical terms this means anonymising (or pseudonymising) data before release. Anonymising requires the removal of name, address, full postcode and any other detail or combination of details that might support identification." (p71).

5.106 There is considerable impetus within the UK government and Office for National Statistics (ONS) to clarify these issues and move forward the use of administrative data. Currently, the Statistics and Registration Service Bill is being considered by the UK Parliament (with Scotland included through a Legislative Consent Motion of the Scottish Parliament). The Bill provides for the creation of a new Statistics Board, operating at arms-length from Ministers as a non-Ministerial department, responsible for promoting and safeguarding the quality and comprehensiveness of official statistics. It includes provision for improved data sharing and an enhanced role for the Scottish Parliament in the scrutiny of Scottish statistics.

The pros and cons of administrative data

5.107 A report to the ESRC by Jones and Elias (2006) identified the following benefits of using administrative data for research and analysis:
- 100% coverage of target population;
- Larger sample sizes for sub-groups such as young people not in education, employment or training;
- Attrition is minimized;
- Accuracy – administrative data are less subject to recall error or mis-reporting;
- Timely data – administrative data are regularly updated;
- Non-intrusive;
- Cost-saving – the data already exist;
- Linkable.

5.108 However, we would suggest that administrative data are very limited in scope, and are best used to complement survey data, for the following reasons.
- Administrative data only cover the facts that have been recorded by routine systems in schools, colleges and government agencies for their particular purposes. They tell us nothing about the young people's perceptions of their experiences, problems encountered, their attitudes and aspirations, or their reasons for making particular choices;
- Although the SQA record formal qualifications, administrative data provide no information on informal learning, or wider aspects of achievement;
- They do not provide any information on wider aspects of young people's lives such as family background, health, leaving home, housing choices or other aspects of the transition to adulthood.

Recommendations
- ***Administrative data should be linked to the cohort surveys to complement the information provided by respondents.***

CHAPTER 6
DESIGN AND GUIDELINE COSTS

6.1   In the light of the options discussed in the previous chapter, we recommend two main designs for a new longitudinal study:
- Design A: first survey young people while they are still in compulsory education with subsequent surveys at key points up to their mid or late 20s.   Interim measures to maintain the continuity of data collection need to be considered.
- Design B: first survey young people in the year after compulsory education as in SSLS but change the data collection strategy to mixed methods and boost sample numbers in certain sub-groups of young people.

Design A

6.2   The key features of Design A include:
- young people surveyed while in compulsory education (one or two sweeps);
- a sample of publicly-funded and independent schools;
- administrative data for linkage by Scottish Candidate Number to be provided by ScotXed;
- within the sample of schools, all pupils in the year group OR a random sample;
- survey to be conducted in school using paper or web-based questionnaires;
- measures to follow-up absentees and coverage of young people in alternative education provision;
- an additional element of telephone interviews with parents to establish background information;
- follow-up sweeps conducted with young people in their own homes using a mixed mode approach;
- boosted sampling of young people in sub-groups of policy interest;
- incentives to be used at follow-up sweeps to maximise response;
- administrative data for linkage by SCN to be provided by SQA, Careers Scotland and other MIAP organisations;
- regular communication with respondents between sweeps to increase sense of survey identity; study website.

Figure 6.1: Summary of Design A

One sweep in compulsory education	Two sweeps in compulsory education
sweep 1: S3 or S4	Sweep 1: S1 or S2
Sweep 2: 16-17	Sweep 2: S3 or S4
Sweep 3: 18-19	Sweep 3: 16-17
Sweep 4: 22-23*	Sweep 4: 18-19
Sweep 5: 26-27*	*Sweep 5*: 22-23*
	Sweep 6: 26-27*

* provisional

Costs for Design A

First sweep of research – in schools

6.3   As discussed in Chapter 5 there are two main options for data collection in schools – paper based questionnaires and web-based questionnaires. In addition, there are two options in respect of the proportion of pupils to be surveyed: the entire year group or a sample. Guideline costs are included for each approach and potential sample size. All costs exclude VAT and are based on 2007 rates so inflation may need to be added. Costs are given for one survey sweep in schools between S1 and S4, and the cost should be doubled for two sweeps.

6.4   Figure 6.2 presents the costs for Design A, outlining the assumptions on which these costs are based. Figures 6.3 and 6.4 then summarise the costings.

Figure 6.2: Costs for Design A

Sweep(s) in compulsory education: paper based questionnaires	
Assumptions	150 schools to be recruited
	Initial recruitment of head teacher for approval via telephone unit
	Face to face interviewer arranges appointment with school
	Interviewer responsible for co-ordinating administration of survey on appropriate day and follow-up of absent pupils
	Questionnaire piloted
	Data produced in SPSS
	24 page colour questionnaire
	Results scanned
Guideline costs	paper based data collection in schools with a sample of 10,000 young people: **£75,000 + VAT**
	paper based data collection taking all pupils in the relevant school year, estimated at 20,000 young people: **£107,000 + VAT**
Sweep(s) in compulsory education: web-based questionnaires	
Assumptions	150 schools to be recruited
	Initial recruitment of head teacher for approval via telephone unit
	Face to face interviewer arranges appointment with school
	Interviewer responsible for co-ordinating administration of survey on appropriate day and follow-up of absent pupils
	Questionnaire piloted
	Data produced in SPSS
	Survey length equivalent of 15 minutes
	Survey website hosted by the agency
Guideline costs	web-based data collection in schools with a sample of 10,000 young people **£30,000 + VAT**
	web-based data collection taking all pupils in the relevant school year, estimated at 20,000 young people: **£40,000 + VAT**
Parental interviews – telephone	
Assumptions	7,500 sample members issued
	6,000 achieved sample
	Questionnaire piloted
	Data produced in SPSS
	Interview length 15 minutes / 20 pages
Guideline costs	parental interviews: **£170,000 + VAT**
Post S4 sweep of research at home address	

Assumptions	10,000 sample members issued
	7,500 achieved sample
	80% eligible for telephone interviewing
	£5 conditional incentive
	Questionnaire piloted
	Data produced in SPSS
	Interview length 15 minutes / 20 pages
Guideline costs	post S4 sweep of research: **£400,000 + VAT**

Third sweep of research at home address

Assumptions	7,500 sample members issued
	6,400 achieved sample
	90% eligible for telephone interviewing
	£5 unconditional incentive
	Questionnaire piloted
	Data produced in SPSS
	Interview length 15 minutes / 20 pages
Guideline costs	third sweep of research: **£360,000 + VAT**

Fourth sweep of research at home address

Assumptions	*(Note that it is difficult to judge whether assumptions so far into the future are valid)*
	6,400 sample members issued
	5,750 achieved sample
	95% eligible for telephone interviewing
	£5 unconditional incentive
	Questionnaire piloted
	Data produced in SPSS
	Interview length 15 minutes / 20 pages
Guideline costs	fourth sweep of research: **£330,000 + VAT**

Fifth sweep of research at home address

Assumptions	*(Note that it is difficult to judge whether assumptions so far into the future are valid)*
	5,750 sample members issued
	5,150 achieved sample
	95% eligible for telephone interviewing
	£5 unconditional incentive
	Questionnaire piloted
	Data produced in SPSS
	Interview length 15 minutes / 20 pages
Guideline costs	fifth sweep of research: **£320,000 + VAT**

Figure 6.3: Summary of costs for Design A – one sweep in compulsory education

Sweep	Age/stage	Paper-based survey		Web-based survey		Mixed methods
		Sample of year group	Whole year group	Sample of year group	Whole year group	
Sweep 1	S3 or S4	£75,000	£107,000	£30,000	£40,000	
	parents	£170,000				
Sweep 2	16-17					£400,000
Sweep 3	18-19					£360,000
*Sweep 4**	*22-23*					*£330,000*
*Sweep 5**	*26-27*					*£320,000*

NB: Costs exclude VAT

Figure 6.4: Summary of costs for Design A – two sweeps in compulsory education

Sweep	Age/stage	Paper-based survey		Web-based survey		Mixed methods
		Sample of year group	Whole year group	Sample of year group	Whole year group	
Sweep 1	S1 or S2	£75,000	£107,000	£30,000	£40,000	
	parents	£170,000				
Sweep 2	S3 or S4	£75,000	£107,000	£30,000	£40,000	
Sweep 3	16-17					£400,000
Sweep 4	18-19					£360,000
Sweep 5*	22-23					£330,000
Sweep 6*	26-27					£320,000

NB: Costs exclude VAT

Design B

6.5   The second potential design for the new study would be to continue the SSLS approach of first surveying young people in the year after compulsory education but with major changes to the sampling frame, to the sample, to the data collection strategy and with greater linkage of administrative data. As we have suggested, this approach could also be used as an interim measure if it was decided to proceed with Design A as the longer term strategy.

6.6   The key design features of Design B include:
* 1st contact in the year after compulsory education (16-17)
* sample frame ScotXed
* sample – boosted by eg attainment, deprivation
* 1st sweep achieved sample = 10,000
* contacted at home using mixed methods – telephone, web, postal, face-to-face
* contacted again at: 18-19; 22-23?; 26 -27?
* incentives to encourage response
* administrative data for linkage by SCN to be provided by ScotXed, SQA, Careers Scotland and other MIAP agencies
* website and other measures to maintain contact

6.7   In Design B, the first contact with young people would be in the first year after the completion of compulsory education with subsequent sweeps as outlined for Design A.

Figure 6.5: Summary of Design B

First sweep after S4	
Sweep 1:	16-17
Sweep 2:	18-19
Sweep 3*:	*22-23*
Sweep 4*:	*26-27*

* provisional

6.8   A key difference of Design B compared with Design A is that in Design B, the contact with young people in the year after compulsory education will be the *first* contact with them whereas in Design A they would already been surveyed one or more times in school. This will impact on costs and may affect response rates.

Costs

6.9   One issue is that without the prior contact in school, telephone numbers may not be available for as many respondents as in Design A. In Design B the survey would be reliant on what schools can provide and what can be found via telephone number matching. As such we have assumed that only 50% of the initial sample would have available telephone numbers in our costs compared with our assumption of 80% in Design A.

6.10   The second difference is that since this would be the initial sweep of research it would therefore lack the recognition that could have been built up by continuing "keep in touch" exercises following the school based survey. This may affect response rates.

Data collection methods

6.11   In putting together our guideline costs we have assumed that the data collection strategy in Design B will be the same as that proposed for the post S4 sweeps of Design A. Thus in Design B all sweeps of research would be conducted with respondents at their home address using a mixed methodology of telephone, postal, web and face to face interviewing.

6.12   Respondents would initially be assigned to either telephone interviewing or a combined postal / face to face data collection strategy depending on whether telephone numbers are available. In addition to this, all respondents would be able to complete the survey online. This design would then be repeated for each of the subsequent sweeps.

Web-based data collection

6.13   In the first instance all respondents should have the option of completing the follow-up survey online. Where e-mail addresses are available respondents should be invited to participate via a hyperlink and password/study number sent out by e-mail. In addition to this, the existence of the online completion option could be highlighted in all advance correspondence sent to respondents along with the password/study number they would need in order to access the site.

6.14   Respondents who complete the survey online would then be removed from the sample for the other data collection strategies to which they had been assigned. We have assumed that around 500 respondents (5%) would choose to complete the survey online for the purpose of these guideline costs.

Telephone data collection

6.15   As noted above, we have assumed that telephone numbers would be available for approximately 50% of all sample members in our guideline costs. For costing purposes we have assumed that 5,000 respondents would be assigned to CATI data collection and that 3,000 (60%) would complete the interview over the telephone or have completed the interview online. We have also assumed that 1,000 respondents would be eligible to be re-assigned to the combined postal and face to face data collection strategy due to an incorrect telephone number or failure to make contact.

Combined postal and face to face data collection

6.16   A combined postal and face to face data collection strategy would be used for those for whom no telephone number is available or who were not contactable during the telephone interviewing stage. We have assumed that 6,000 respondents would be eligible for this data collection strategy.

6.17   In the first instance a postal data collection strategy would be used for these respondents with non-responders followed up by face to face interviewers using Computer-Assisted Personal Interviewing (CAPI). In our guideline costs we have assumed that 2,400 respondents (c.40%) assigned to this strategy would return a postal questionnaire or have completed the survey online.   The remaining 3,600 sample members would then be transferred to face to face data collection.

6.18   Face to face interviews would be used with the most difficult to reach young people. In our costs we have assumed that around 1,800 interviews would be conducted face to face from an initial start sample of 3,600 contacts.

6.19   In total 7,200 interviews would be completed at Sweep 1.

Figure 6.6: Guideline costs for Design B

First sweep of research at home address (post S4)	
Assumptions	10,000 sample members issued
	7,200 achieved sample
	50% eligible for telephone interviewing
	£5 conditional incentive
	Questionnaire piloted
	Data produced in SPSS
	survey length 15 minutes / 20 pages
Guideline costs	first sweep of research: **£435,000+ VAT**
Second sweep of research at home address	
Assumptions	7,200 sample members issued
	6,100 achieved sample
	90% eligible for telephone interviewing
	£5 unconditional incentive
	Questionnaire piloted
	Data produced in SPSS
	Interview length 15 minutes / 20 pages
Guideline costs	second sweep of research: **£350,000+ VAT**
Third sweep of research at home address	
Assumptions	6,100 sample members issued
	5,500 achieved sample
	95% eligible for telephone interviewing
	£5 unconditional incentive
	Questionnaire piloted
	Data produced in SPSS
	Interview length 15 minutes / 20 pages
Guideline costs	third sweep of research: **£325,000 + VAT**
Fourth sweep of research at home address	
Assumptions	*(Note that it is difficult to judge whether assumptions so far into the future are valid)*
	5,500 sample members issued
	5,000 achieved sample
	95% eligible for telephone interviewing
	£5 unconditional incentive
	Questionnaire piloted
	Data produced in SPSS
	Interview length 15 minutes / 20 pages
Guideline costs	fourth initial sweep of research: **£310,000 + VAT**

Figure 6.7: Summary of costs for Design B - 1ˢᵗ sweep after S4

		Sample using mixed methods
Sweep 1	16-17	£435,000
Sweep 2	18-19	£350,000
Sweep 3*	*22-23*	*£325,000*
Sweep 4*	*26-27*	*£310,000*

Guideline costs for a 'Keep in Touch' Exercise

6.20   In order to maintain response between sweeps and minimise attrition we would recommend conducting a number of "keep in touch" exercises with respondents and these are outlined in the next chapter. Here we provide a unit cost for a single "keep in touch" exercise based upon an achieved sample of 10,000 respondents; this can be pro-rated for smaller sample sizes.

6.21   Guideline costs for a single "keep in touch" exercise **£8,500 + VAT**.

Guideline costs for data linkage and derived variables

6.22   We have recommended the linkage of administrative data as an integral part of the longitudinal study design and below give some guideline costs for this (Figure 6.8). These costs exclude overheads. It should also be noted that the costs are based on the assumption that the MIAP strategy will have been successfully implemented and that data will be available for linkage.

Figure 6.8: Data linkage and derived variables

1. Data linkage of survey(s) at compulsory stages	
Data source(s)	*Activities*
Data from ScotXed for linkage to pupil data by SCN	Derive variables on pupil characteristics, attendance, absence and exclusions
	Derive weighting variables comparing achieved sample to target sample
	Identify pupils who have moved schools
Local-area statistics for linkage to pupil data by postcode of home address	Derive variables on local area deprivation, and housing characteristics (MOSAIC)
Data from SQA for linkage to student data by SCN	Derive variables on students' attainment at S2 and S3, in further education and from Skills for Work courses from SQA records of Standard Grade, NQ and VQ.
	Derive variables from subject and qualification levels to describe curricular tracks
	Derive variables on school-college combinations from institutional codes
School-level information for linkage to pupil data by school identifier	Obtain variables for school type, denomination, roll size, free-meal entitlement and urban-rural categorisation
	Link variables for the travel-to-work area of the school, including unemployment rates and occupational structure
	Derive school context variables from the average characteristics of pupils in the sample *eg percentage of minority ethnic pupils, percentage with English as additional language*
Estimated time for linkage in the compulsory stage**:** 15 days per survey sweep Guideline costs: **£3750 + Overheads/VAT**	

2. Data linkage of surveys at 16/17 and 18/19	
Data source(s)	*Activities*
Data from ScotXed for linkage to student data by SCN	Derive variables on attendance, absence and exclusions
	Derive weighting variables comparing achieved sample to target sample
	Identify pupils who have moved schools, and those who have left school by stage
Data on Education Maintenance Allowances (EMA) from Scottish Executive for linkage to student data by SCN	Derive variables on period funded by EMA and link to student record
School-level information for linkage to student data by school identifier	Link variables for the travel-to-work area of the school, including unemployment rates and occupational structure relevant to age of pupil at month of survey
Data from SQA (and other qualifications authorities15) for linkage to student data by SCN	Derive variables on student's attainment at S3, S4, S5, S6, and in further education and training from SQA records of Standard Grade, NQ and VQ (GCSE and A-level).
	Derive variables from subject and qualification levels to describe curricular tracks
	Derive variables on school-college combinations from institutional codes
Data from Careers Scotland (and Job Centre Plus) for linkage to student data by SCN	Identify school leavers by stage and compare with ScotXed data
	Link variables on first destinations of school leavers and participation in GST
Obtain data from Scottish Enterprise on Government-supported training (GST) for linkage to student data by SCN	Identify trainees and compare with Careers Scotland data
	Derive and link variables describing participation in GST, including start/finish date, length of training, outcome of training, type of provider, occupational category
Obtain data from Scottish Funding Council for linkage to student data by SCN	Identify students in further education, and compare with Careers Scotland data
	Derive and link variables describing participation in further/higher education, including start/finish date, length of study, mode of study, type and level of course, subject areas
Obtain data from UCAS on applications for higher education for linkage to student data by SCN	Derive and link variables describing type and location of institutions, and type and subject of courses, for which the student has applied.
	Derive and link variables describing outcome of application, including whether they get their first choice etc.

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Estimated time: 25 days per survey sweep at 16/17 and 18/19**.**
Guideline costs**: £6,250+ Overheads/VAT**

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3. Data linkage of surveys at 22/23 and 26/27	
Data source(s)	*Activities*
Link survey and admin data	Derive weighting variables comparing achieved sample to target sample
Data from SQA (and other qualification authorities) for linkage to student data by SCN	Derive variables on student's attainment in further education and training from SQA records of NQ, HN and VQ.
	Derive variables from subject and qualification levels to describe curricular tracks
	Derive variables on institutional type and location

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[15] Linkage of non-SCA qualifications will need investigation

	from institutional codes
Data from Job Centre Plus for linkage to student data by SCN	Derive and link variables on those not in education, training or employment
Data from Scottish Enterprise on Government-supported training (GST) for linkage to student data by SCN	Identify trainees
	Derive and link variables describing participation in GST, including start/finish date, length of training, outcome of training, type of provider, occupational category
Data from Scottish Funding Council for linkage to student data by SCN	Identify students in further education
	Derive and link variables describing participation in further/higher education, including start/finish date, length of study, mode of study, type and level of course, subject areas
Data from UCAS on applications for higher education for linkage to student data by SCN	Derive and link variables describing type and location of institutions, and type and subject of courses, for which the student has applied.
	Derive and link variables describing outcome of application.
Data from HESA on participation in Higher Education for linkage to student data by SCN	Derive and link variables describing type and location of institution, level and subject of course, start date, length of period of study, qualification and outcome.
Estimated time: 30 days per survey sweep at 22/23 and 26/27 Guideline costs: **£7,500+ Overheads/VAT**	

Figure 6.9: Summary of costs for data linkage and derived variables (excludes overheads/VAT)

	Per sweep
Linkage at the compulsory stage(s)	£3,750
Linkage at the 16/17 and 18/19 stages	£6,250
Linkage at the 22/23 and 26/27 stages	£7,500

Costs for analysis and reporting

6.23   For the sake of completeness, we also include here the tasks and costs for analysis and reporting. This is discussed further in Chapter 8.

Descriptive reporting

6.24   For each survey sweep there will be:
* data manipulation, including joining of survey sweeps;
* descriptive cross-sectional analysis (frequencies, crosstabs etc);
* descriptive longitudinal analysis (eg comparing destinations by timepoints);
* reporting of key topics (eg attainment, attitudes/aspirations, career progression, migration, family formation – each of which will need to take account of progression between sweeps, and differences by gender, social class and area);
* writing Briefing papers.

Time required for analysis will vary between sweeps, as the study becomes more complex as more data is accumulated, linked and analysed.
Estimated time for analysis of initial sweep: 30 days
Guideline costs**: £7,500**

Estimated time for analysis for subsequent sweeps: 60 days per survey sweep
Guideline costs**: £15,000 + Overheads/VAT**

Special studies of policy areas

6.25   As the longitudinal study develops over time, there will be areas of policy interest that need in-depth longitudinal analysis. These will probably require statistical modelling to explore causal relationships. It is very difficult to estimate the amount of time required for such analysis and reporting but we have attempted to give an indication of this.

Time required for analysis will vary depending on the number of sweeps involved.
Estimated time for a narrow analysis based on 2 sweeps of data: 40 days.
Guideline costs**: £10,000 + Overheads/VAT**

Estimated time for a wider analysis based on 4 sweeps: 80-100 days.
Guideline costs: £ **25,000 + Overheads/VAT**

CHAPTER 7
SAMPLE MAINTENANCE AND ATTRITION

7.1   This chapter considers the methods that will be required to maintain a nationally-representative sample, and to minimise attrition of sample members over the life of the new study. Attrition is a challenge faced by all longitudinal studies and problems associated with non-response were a major issue for the former SSLS. Measures to address the question of attrition must be a prominent feature of any new longitudinal study of young people.

7.2   When estimating the potential attrition rates for the new study we have attempted to use comparisons with similar surveys in the United Kingdom and elsewhere in the world. However, the proposed design of the new study is such that direct comparisons with many of these studies can be problematic. In particular, we believe it is necessary to be cautious when estimating the response rate, and therefore attrition, for the first follow-up sweep of a new study.[16]

7.3   Following from the design options recommended in Chapter 6, this section highlights the particular challenges that each proposed design will face. It draws on other longitudinal studies of young people and best practice in minimising attrition and what could be applied in the new study. Finally, this chapter provides estimates for likely attrition in the study for each of the designs.

Design A

7.4   Design A features a first contact with young people within the school setting during the compulsory stages S1-S4 as described in the previous chapter.

7.5   In the proposed design for Design A, the initial survey sweep would be conducted in lesson time within school. As such non-response at the initial sweep will largely be a product of schools choosing not to take part, rather than the non-response of individuals. The overwhelming majority of sampled young people will complete the survey, with the only exceptions being those whose parents opt them out of the study and those who are consistently absent (although we have suggested follow-up procedures for the latter).

7.6   While this will mean that the response rate for pupils within schools will be very high,[17] it also means that the response rates we could expect to see at the first follow-up sweep will be lower than what has been achieved in equivalent surveys. This is because respondents who might usually be a non-responder at the initial sweep of a study will be going forward to the first follow-up sweep of research. As such, the response rate that will be achieved in the first follow-up sweep of the new study will be more akin to that of an initial sweep of a longitudinal study than that of a follow-up sweep.

Comparisons with other studies

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[16] Response rates reported for follow-up waves of longitudinal studies are typically significantly higher than those achieved in cross-sectional studies. This is because the response rate at a follow-up wave in a longitudinal study will usually be calculated on the issued sample size for that wave, which will normally comprise respondents who were interviewed in the previous wave of research. This means that respondents who are the least likely to take part in research will make up a smaller proportion of the issued sample than in a cross-sectional study, as they will have been more likely to refuse at the initial wave.

[17] We would expect +95% of sampled young people within schools to take part.

7.7   When estimating the response rate that could be achieved at the first follow-up sweep of Design A of the new study we have looked at the most appropriate stages of other longitudinal studies of young people.

7.8   In the USA, the first follow-up sweep for the ELS:2002 among young people who have left school, or who have transferred to a new school, is conducted in a very similar way to that proposed in the new study[18]. A response rate of around 80% was achieved among young people who had left school and approximately 70% among those who had moved school. The young people who had left school were a combination of drop-outs and those who had graduated early and the response rates for both of these groups were relatively similar. The response rate for young people who had moved school was significantly lower but it should be noted that this will most likely be related to difficulties in tracing these respondents. As such the 80% response rate among young people who had left school is the best guide to a response rate for Design A of the new study. It should be noted that ELS:2002 respondents were given a substantial incentive of $20.

7.9   The survey design for the 2003 cohort of the Longitudinal Surveys of Australian Youth (LSAY) was similar to that proposed for Design A at sweep 1, but subsequently there were two main differences. The first is that LSAY solely used telephone interviews rather than employing a mixed mode approach. This was possible in part because telephone numbers were available for a very large proportion of sampled respondents. The second, and most important difference, is in the timing of the follow-up sweep. The initial sweep of the 2003 cohort and the first follow-up sweep were both conducted in the same year. This meant that there was less likelihood of sample members moving in the intervening period and that the initial sweep would still seem fresh to respondents. The cumulative response rate for the first follow-up sweep was 83%.

7.10   The LSYPE in England differs from the proposed design of the new study, and the American and Australian studies, in that no contact took place in school. Instead, all surveying was conducted face to face in home with both the sampled young person and any parents/guardians who were living with them. However, it is still worth considering the response rate achieved in the first sweep of LSYPE as this will be similar in dynamic to the first follow-up sweep of Design A of the new study.

7.11   The unweighted response rate for the initial sweep of LSYPE was 74% but there are additional factors to note which could lead to either a higher or lower response rate for the new study. Firstly, respondents in the proposed Design A will have completed a survey sweep in school and have received regular survey information and reminders in the intervening years. Secondly, there would be a smaller burden on respondents and the interview length will be shorter. Against these points, contacts in subsequent sweeps of Design A will largely be by telephone rather than face to face, which means that it will be easier for respondents to refuse. Secondly, there will not be the parental pressure to take part in the study that contributed to some of the success at the initial wave of LSYPE. Finally, the initial wave of LSYPE was conducted in 2004 while the first follow-up sweep for the new study would be conducted in 2012 and response rates have been slowly declining over time.

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[18] A mixed mode data collection strategy is used involving telephone, postal and face to interviews in order to minimise costs and maximise coverage.

Measures to maintain the sample

7.12   The proposed Design A for the new study has a gap of two years between the initial contact in school and the first follow-up at the respondents' home address. If contact is not maintained with respondents during this time there is a greater chance that they will forget about the survey. This would undermine one of the elements in securing high response rates at follow-up sweeps in longitudinal studies - recognition of the survey. In addition to this, the sampled young people will be becoming more mobile around this time and maintaining regular contact will increase the likelihood of tracing those who move. As such, we would recommend that a number of steps are taken to maintain contact with participants and build a study identity between sweeps.

7.13   A minimal approach would involve setting up a study website and sending a "Research Findings" report out around a year after the initial sweep of interviewing in school was conducted. However, we would recommend a more comprehensive approach to increase the study identity and maintain interest.

7.14   In the first instance an initial "thank you" letter could be sent to respondents along with a branded gift of some sort. The gift itself would not be of a large monetary value and could be something as simple as pocket diary. This first contact would be soon after the initial sweep (4-6 weeks) so that the link with the questionnaire they had just completed in school and the survey brand can begin to be established. In addition to building the survey branding, this first contact will also serve to identify sample members with incorrect contact details at an early enough stage for the researchers to seek corrections or clarifications.

7.15   A secondary contact could then take place around a year after the initial sweep providing the study member with relevant and interesting findings from the first sweep of the research. A final contact could then take place in the run up to the first follow-up sweep of the study, this would alert them to the fact that the survey team wish to speak to them again soon and enable contact details to be checked (see Chapter 6 for the costings for a "keep in touch" exercise).

7.16   Estimating potential response rates for surveys is an inexact science. As discussed above, because the initial sweep of Design A will be conducted in school, the most crucial stage in terms of panel attrition will be the first post-school follow-up sweep. The assumptions that are made about response rates at this sweep are the ones that will impact most on projected sample sizes at later sweeps of the research. Table 7.1 shows the estimated attrition for Design A.

Table 7.1: Design A: estimated attrition over time

	Sweep on sweep response rate	Cumulative response rate	Number of interviews
Initial sweep of study in school			10,000
Sweep 2	75%	75%	7,500
Sweep 3	85%	64%	6,400
Sweep 4	90%	57%	5,750

7.17   There are a number of assumptions that underpin these estimates, the main ones are outlined below:
- The fieldwork model is that outlined in Chapter 6

- Multiple contacts would be made with respondents between the initial sweep of school based research and the follow-up sweeps
- Full access to administrative databases to enable tracking of movers
- Two yearly intervals between sweeps

Design B

7.18   The proposed design for Design B follows that used in previous SSLS in that the initial sweep will be conducted in the first year after compulsory education. However, the data collection strategy would be changed significantly with the adoption of a mixed mode approach rather than a reliance on postal questionnaires. This change to the data collection strategy would lead to a significant increase in response rates and therefore in the reliability of survey measures. Greater detail about the proposed data collection strategy for Design B is contained in Chapter 6.

7.19   Table 7.2 gives the estimated response rates and sample sizes for Design B.

Table 7.2: Design B: estimated attrition over time

	Sweep on sweep response rate	Cumulative response rate	Number of interviews
Sweep 1	72%	72%	7,200
Sweep 2	85%	61%	6,100
Sweep 3	90%	55%	5,500
Sweep 4	90%	50%	5,000

7.20   There are a number of assumptions that underpin these estimates, the main ones are outlined below:
- The fieldwork model is that outlined in Chapter 6
- Multiple contacts would be made with respondents between sweeps
- Full access to administrative databases to enable tracking of movers
- Two yearly intervals between sweeps

Differential Attrition

7.21   The SSLS has suffered in recent years not just from relatively high rates of attrition, but also from *differential* rates of attrition, in particular, in respect of young people with low levels of attainment and from more deprived backgrounds. This meant that estimates from the survey have become increasingly unreliable for the population and, in particular, these groups.

7.22   These problems have also been encountered in the equivalent English research, the Youth Cohort Study and consequently the methodology for cohort 13 was changed with a move to face to face interviews rather than a reliance on postal questionnaires. While fieldwork had not yet concluded, the initial results indicate that response overall is high and, even more encouragingly, there is little differential response between sub-groups of young people. This echoes the findings from the LSYPE which also uses a face to face interviewing methodology. It should be noted that both studies offer incentives to respondents and this, as

well as the change to the mode of data collection, may be a factor in reducing differential non-response.

7.23   The proposed designs for a new Scottish longitudinal study focus on a mixed mode approach with initial telephone contacts followed by postal and face to face follow-ups for non-responders. While this approach may lead to slightly lower overall response rates than for the two English studies, we believe that this would be minimal. In particular, we would expect that differential rates of attrition would be minimised and as a result key groups such as low attainers and those who are not in education, employment or training would be present in the sample in sufficient numbers[19].

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[19] If these groups were over sampled as part of the survey design we would also expect them to remain at higher levels in subsequent sweeps.

CHAPTER 8
DISSEMINATION, USE AND MANAGEMENT ISSUES

8.1   A longitudinal study represents a considerable financial investment and if the potential benefits of such an investment are to be realised, attention needs to be given to maximising the visibility and profile of the study, to the reporting and dissemination of its findings and to facilitating access to the data for further analysis. As we have reported, stakeholders felt strongly that much more attention and resource needs to be given to these aspects than has been the case with the SSLS, especially in more recent years. We suggest that a strategy and mechanisms to support the dissemination and use of the data should form an integral part of the contract for any new longitudinal study.

A strategy for analysis and reporting

8.2   In the past, the contract for SSLS has focused, to a large extent, on the data collection aspects with less attention paid to the analysis and reporting. The SSLS contract has included funding for descriptive analysis and reporting of findings at each sweep, mainly on a cross-sectional basis with little longitudinal analysis. While a few in-depth studies on particular topics have been funded by the Scottish Government, this has been on an ad hoc basis[20]. We suggest that in a new study, a strategy for data analysis should be developed that would specify what is required in terms of basic reporting at each sweep but that would also set out the further longitudinal analysis of issues of interest to policy makers and stakeholders that might be undertaken. There needs to be a more structured process to identify and fund further analysis of such issues. The Government should consult internally with policy and analytical staff as well as externally with other policy makers and researchers on a regular basis about the key issues to be examined in more depth after each sweep and establish a programme of studies for the next few years. The Executive has now established a Longitudinal Research and Analysis Network (LRAN), part of whose remit is to champion, promote and stimulate the exploitation of longitudinal datasets both within and outwith the Government, particularly in relation to their contribution to policy evaluation. Strategic direction of the longitudinal study, and its analysis, may be an appropriate role for this group.

8.3   The consultation process revealed a considerable lack of awareness both within and outside the Government about the SSLS, the nature and range of its data, the various analyses that have been carried out and the resultant publications. We have already recommended the creation of a study website as part of the strategy to retain young people's participation; we also regard a study website as fundamental to publicising the study to users and potential users and stimulating their engagement with it. It is now common practice for major surveys to have a dedicated website containing information about the survey, research findings and in some cases, data to access; users and potential users now expect such a resource to be available.

8.4   For a new longitudinal study to be successful, an active dissemination strategy would be required with staff to implement it. The Growing Up in Scotland study, for example, has a Dissemination Officer. The dissemination strategy could include the publication of findings in formats that would engage the interest of stakeholders, for example, summary briefings and short issues papers. These types of publications would facilitate the dissemination of findings to policy makers, practitioners and the media via, for example, the study website, press briefings, and perhaps a regular seminar series.

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[20] Eg the SSLS Special Studies Series

8.5   We have discussed the need to ensure that young people 'buy into' the study and this also applies to the range of organisations and groups with an interest in young people's transitions. As we have already suggested, securing the endorsement of national bodies, local authorities, professional groups and voluntary organisations would be an important element in ensuring that the study is viewed as high profile, relevant and useful. Such awareness and endorsement needs to be actively pursued.

Encouraging use of the data

8.6   Another way to capitalise on the investment in a longitudinal study is to encourage and enable others to use the data for analysis. A number of the large surveys in the UK have data available on their websites as well as depositing data with the UK Data Archive (eg LYPSE, the British Cohort Study, and the Scottish Longitudinal Study).   LSYPE, for example, as an integral aspect of the study has a wide ranging data enhancement programme with the specific aim of maximising the availability and usability its data. Although SSLS data is deposited in the UK Data Archive, it was evident from the consultation that awareness of its availability for secondary analysis was limited while the limitations of the documentation of the large and complex SSLS datasets do not facilitate their use.

8.7   Clearly mechanisms have to be in place to protect respondents' anonymity and uphold confidentiality before the data can be accessed by a range of users. There are various ways of doing so such as anonymising individual level data, aggregating any other potentially disclosive data and having a system for regulating access to the data eg licensing arrangements. We would not envisage that there would be problems in this respect in relation to the data from a new study. As we have noted, data from the SSLS are already available for secondary analysis.

8.8   Administrative data form an important component of the proposed study providing detailed information on the outcomes of education and training that is difficult to obtain in short questionnaires or interview schedules. For the most part administrative data will be linked using the Scottish Candidate Number (SCN) which will be removed from public datasets.   Care is needed to ensure that a full range of variables are derived from administrative data and linked to the survey data before any process of anonymising takes place, so that the potential richness of these data can be utilised.

8.9   Further issues regarding anonymity relate to schools. Preferred practice is to replace the establishment codes with anonymous identifiers, so that analysts can control for the design effects of school membership, and analyse school differences. However, a number of school contextual variables need to be derived by the survey organisation before school identity is removed. Contextual variables include school denomination, school roll size, free-meal entitlement, local area deprivation, and characteristics of the travel-to-work area. These variables are very important for research, and impossible to derive once the school identity has been removed.

8.10   If the data collected by a new study is to be analysed extensively (and therefore be cost effective), it is essential to publicise its availability and to develop a strategy to support those accessing it.   Critical factors include the provision of comprehensive and understandable documentation, the availability of key derived variables, and files that are easy to navigate (Martin et al 2006). As well as paper documentation, there are now additional possibilities, for example, the US National Longitudinal Study of Youth (NLSY) includes a CD-ROM which provides interactive access to both documentation and data.

8.11   Training workshops that provide a hands-on introduction to accessing and using the data might also be considered to encourage the use of the data. The capacity in the research and policy communities in Scotland for quantitative analysis in general and longitudinal analysis in particular is an issue of concern to the Government, the Scottish Funding Council and the ESRC. Workshops and other measures to support the analysis of data on young people's transitions could be developed in conjunction with other measures to stimulate quantitative data analysis in Scotland (and elsewhere in the UK) such as the ESRC Researcher Development Initiative.

8.12   In Scottish education there is considerable interest in evidence-informed practice. For example, the Applied Educational Research Scheme has attracted teachers, head teachers and local authority staff to undertake collaborative research with university researchers. Potentially the longitudinal study provides a valuable resource for practitioner - research. For example, a subject teacher may be interested to analyse the career trajectories of young people specialising in her/his subject and the factors such as subject combinations and aspirations that affect their outcomes. Or staff from a local authority may be interested in the factors that influence the perceptions and aspirations of young people in their area. Providing a resource that is seen to be useful to Scottish educators can provide a counter-weight to the heavy demands made on their time by research studies.

8.13   An important aspect of a strategy to encourage the full utilisation of a new study is the provision of staff to respond to requests for data from those who are not able to analyse the data themselves. This was raised in the consultation process and there was some suggestion that organisations might be willing to contribute to the funding of such a post.

The management and governance of a new study

8.14   Underlying our discussion of the dissemination and use of a longitudinal study is the question of who would be responsible for developing and carrying out the strategy and activities suggested. Experience shows that the success of a longitudinal study is dependent on there being a committed group or organisation that will promote it, 'nurture' it and develop its potential (Martin et al 2006). A clear message from the consultation process is that this has been lacking in respect of SSLS since the early 1990s.

8.15   Responsibility for SSLS within the Government has moved between the former Departments of Education and of Enterprise and Lifelong Learning over the years; since 2003 the remit for the project management of the survey has lain with Education Research. It has formed one element of a number of responsibilities of the staff concerned and the role of the Scottish Government has essentially been to manage the contract rather than to promote and develop the survey. Since the early 1990s, the Government has put the conduct of the survey out to tender. The scope of the contract has focused on data collection, with most resource directed to collecting the data with a limited amount of funding in the contract for descriptive analysis and providing an overview report of findings at each sweep. The SSLS has an Advisory Group made up of academics, policy makers and practitioners but the Advisory group as constituted has not been able to play an active role in supporting and developing the survey.

8.16   On the basis of the experience of other longitudinal studies and the consultation process we suggest that different arrangements would be required for a new longitudinal study, a central aim of which would be to ensure that there would be specific individuals or groups who would have a central responsibility (and the time) for its active development, promotion and use.

8.17   Several stakeholders felt that the Scottish Government does not have the critical mass of staff to support and develop a longitudinal quantitative study and that individuals or groups outwith the Executive would need to play a central role. Another factor to take into account is the relatively rapid turnover of staff in the Government - but the effective management and development of a longitudinal study, by its very nature, requires continuity and stability in staffing.   One approach might be for the Government to contract with an appropriate organisation (or possibly a consortia) that would then have the responsibility for the direction of the study, its promotion and development; such an organisation or group could be overseen by an advisory or steering committee. The ESRC is currently developing a model for the governance of longitudinal data that could be a helpful starting point in considering the most appropriate management and governance arrangements for a new longitudinal study. This model is based on the concepts of 'ownership' by the funders of a study and 'stewardship' by some appropriate organisation with various arrangements in place to safeguard the rights of the funders and to support the longitudinal study.

8.18   The consultation identified the issue of the place of a study of youth transitions alongside the other research that the Government funds, both in relation to surveys of school pupils and its other longitudinal studies.   In this respect the creation of the Longitudinal Research and Analysis Network (LRAN) which aims to support the strategic development of large scale, cross-cutting longitudinal surveys across the Government, including co-ordinating investment and identifying and addressing gaps, is to be welcomed.

Co-funding

8.19   A new longitudinal study would not only provide data to meet the policy needs of the Scottish Government but would also provide a data resource for the research and academic community as well as other public and voluntary bodies. As a general resource of this nature it would be appropriate to consider approaching the ESRC for some element of co-funding. This would be in keeping with the ESRC's National Data Strategy. The ESRC recognises the need for collaboration with other bodies, including the devolved administrations, in developing a strategic approach to data resources for the social sciences.   One of the identified roles of its UK Data Forum is to consider shared responsibilities where the development of a particular data resource is 'beneficial to a range of users' – governmental and non-governmental, academic and non academic (p. 17, ESRC 2007). A new longitudinal study would fall into this category of being beneficial to a range of users.

8.20   The possibility of co-funding from the ESRC for a longitudinal study of young people's transitions is also suggested by the need that the Council has identified to fill the gap in UK longitudinal data on children born in the early 1990s.   The earlier birth cohorts followed children born in 1946, 1958 and 1970 but there is then a gap of thirty years until the Millennium Cohort study of children born in 2000. In considering how to bridge this gap, the Strategic Review of Cohort and Panel Studies, recommended an investigation of the feasibility of using the SSLS to do so for Scotland (p 57, Martin et al 2006). A new longitudinal study which first contacted young people aged around 14 in 2008 (Design A) ie those born in 1994 would meet the need the ESRC has identified for data on the birth cohort from the early 1990s.

CHAPTER 9
CONCLUSIONS AND RECOMMENDATIONS

9.1   Scotland was one of the pioneers in the area of longitudinal studies of youth transitions and the Scottish School Leavers Survey has been the model for studies in other countries, including England. Through the SSLS Scotland has an enviable resource in the time series data stretching back to the mid 1970s. But in the light of the transformation of young people's transitions within a wider context of societal change and a changing government agenda, it is timely to review the options for meeting the needs for longitudinal data on the transitions of young people in Scotland. It is important, nevertheless, to recognise and, where possible, build on this existing resource.

9.2   This options appraisal was commissioned to analyse the requirements of the Scottish Executive and also the wider user community of policy makers and practitioners, academics and researchers for longitudinal data on young people's experiences in secondary school and subsequent transitions to further/higher education, training and employment.   The consultation process with the Government and external stakeholders revealed strong support for a longitudinal study, indeed, a view that, more than ever, such a study is required to follow young people's more protracted journeys through an increasingly diverse education and training system situated in a more complex economic and social world.

The case for a longitudinal study

9.3   A longitudinal study is a major long-term investment and a question that was posed to us during the options appraisal was whether some or most of the data needs on young people's transitions could be met by other approaches such as cross-sectional surveys and the use of administrative data. We have concluded that they could not. Although administrative data should be utilised (and it forms an integral part of the options we have presented), it is insufficient on its own to meet stakeholders' needs. While cross-sectional surveys would provide data in respect of certain policy questions, they would not provide the necessary data for others, in particular, for the wider policy questions such as those concerned with social inclusion and disadvantage, widening access and skill development. Moreover, it should be remembered that a longitudinal study also provides cross-sectional data that would, at least in some cases, meet the need to have data available within a shorter time frame.

9.4   The question of a longitudinal study of young people's transitions was one amongst a range of issues discussed in the fact finding part of the OECD Review of Scottish education, due to report in late 2007. During one of the OECD fact finding seminars, a few members of the OECD Review Team asked some questions about the current design of the SSLS and about the value of a survey that would provide a view of the different 'journeys' of young people as they move through the final years of compulsory school and into different destinations.

9.5   As we have noted at various points in this report, the view of the authors is that a longitudinal approach is necessary to gain such a picture of young people's 'journeys' and we think that the options we have developed, in particular Design A, would provide the necessary data.

9.6   In chapter 2 we outlined the nature of young people's transitions, the relevant policy initiatives in education and training and highlighted the key differences between longitudinal and cross-sectional approaches. In chapter 4 we reported on the responses gathered in the

consultation process. Taken together, they provide the case for a longitudinal study. We do not repeat all of this here but highlight the following points from these earlier chapters:

- As youth transitions become more complicated, prolonged and differentiated, data are needed to enable *understanding* of these transitions.
- More contemporaneous data on young people's attitudes, motivations, aspirations and expectations are required to understand their transitions and the interaction between attitudes etc and their movement between statuses.
- A continuous picture of individuals' movement through the system ('learning journeys') is required for policy development, including participation in alternative and cross sectoral routes, late entry, drop-out and re-entry to education and training.
- The impact of reforms in compulsory schooling and the growing curricular flexibility and differentiation on young people's later experiences and outcomes need to be monitored and assessed.
- There is a need for data on young people's wider achievement and 'soft skills' and aspects such as self esteem, self efficacy and resilience.
- It is essential to be able to monitor movement and continuity among young people not in education, training or employment .
- There is a need for a study to cover all young people. This is necessary to monitor the outcomes of different groups of young people, to assess the extent of inequalities and the impact of major initiatives such as the Social Justice Strategy 'Closing the Gap'.
- Policy initiatives need to be assessed as a whole and in parallel with the influence of various socio-economic factors to establish their long term impact and their cumulative effect on different groups.
- Cross - sectional surveys do not provide information on change at the individual level or about an individual's transition process or 'journey'. They are unsuited to the measurement of attitude change and do not permit analysis of cause and effect.
- Administrative data by their very nature do not shed any light on attitudes, motivations and soft skills; the creation of a comprehensive longitudinal administrative database is a complex technical and legal challenge.

Recommendations

9.7   On the basis of the various activities undertaken as part of this options appraisal, we offer the following recommendations:

- *The Scottish Executive should continue to fund a longitudinal study and we suggest that it should explore with the ESRC the possibility of some element of co-funding.*
- *Design A which first surveys young people when they are still in compulsory education best meets the need for longitudinal data on their transitions and is our preferred option.*
- *Within Design A, the number and timing of contacts within the compulsory stage would need further consideration in the light of available resources and developments in a Curriculum for Excellence and other related initiatives.*
- *We recommend that there should be at least four further survey sweeps after S4: at ages 16/17, 18/19 with subsequent sweeps possibly at 22/23 and 26/27. The timing of these later two sweeps would be best decided in relation to relevant policy developments nearer the time when these sweeps would be conducted.*
- *If the Scottish Executive decides to proceed with Design A, it should seriously consider carrying out an interim study to fill the gap in data between that collected by SSLS and the data that will be collected under Design A. The design and methodology of this interim study could follow Design B (first survey*

young people in the year after compulsory education using a mixed methods approach with a boosted sample).

- *New cohorts should be recruited on a 4-yearly basis.*
- *A longitudinal study should be comprehensive in its coverage: it should aim to include different groups of young people and should cover both publicly-funded and independent schools.*
- *The potential of administrative data to enhance the survey should be utilised. In this regards, measures to support and take forward the work of the Managing Information Across Partners (MIAP) project would be extremely helpful.*
- *To make the most of its investment in a longitudinal study, the Executive should develop a strategy to maximise its profile, disseminate the findings widely and encourage others to use the data. This should include the following elements:*
- *An active publicity and dissemination strategy that is an integral part of the study and includes elements such as a dedicated study website.*
- *Work with key stakeholders to develop a data analysis strategy identifying basic analyses and other analyses focused on specific policy and research questions, utilising the longitudinal benefits of the data.*
- *Consider the provision of staff (internal or external) to respond to requests for data analysis.*
- *Ensure that the data are publicised to potential users and that measures are in place to make it easy for them to access and analyse it in practice, for example, by requiring the provision of comprehensive documentation.*
- *The Executive should review the management and governance arrangements for a longitudinal study. A key consideration should be to ensure that arrangements support the active promotion and development of the study and provide continuity and commitment in its management.*
- *The Executive should ensure a strategic approach to the longitudinal research it commissions, for example, through developing the work of its Longitudinal Research and Analysis Network.*

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APPENDIX 1
THE SCOTTISH SCHOOL LEAVERS SURVEY (SSLS)

What is it?

- A national survey of young people in Scotland that has taken place regularly since 1976 with funding from the Scottish Government.
- It is a self-completion postal survey sent to young people at their home address
- It collects information on young people's:
    - experience and views of secondary school;
    - their educational, employment and related activities after leaving school up to their mid 20s;
    - ethnicity, parental education and social class, personal and family circumstances and housing tenure
- It provides information to government and others about young people's experiences at school and their activities afterwards to inform education and training policy and practice and help assess the impact of policy initiatives

What does it cover?

The topic areas covered by SSLS have varied over the years and differ by sweep. Generally the topics include:

Schooling
- Qualifications gained at school
- Attitudes to school
- Decision – making, future plans and hopes and careers advice
- Financial support
- Part-time work and work experience

After school
- Their main activities in the years after leaving school – FE; HE; job; training programme; unemployment, not in education, training or employment
- FE and higher education – courses; institution; qualifications; financial issues
- Labour market – type of job or training programme; training on and off the job; qualifications; finance/pay; job search
- Reasons for (non)participation in particular activities
- Attitudes, plans for the future and career advice

Background
- Gender and ethnicity
- Disability/health
- Parental background: employment status, education/qualifications
- Housing tenure and conditions
- Their own personal and domestic circumstances

Who is included?

- Young people who attended local authority or independent schools in Scotland.
- They are first surveyed in the year after 4th year (the end of compulsory education) at age 16/17 and several times after this. The most recent survey design includes 4 contacts or sweeps at the ages of:
  - 16-17
  - 18 -19
  - 21-22
  - 23-24

How has the information been used?

- The Scottish Government publishes reports which give the main results for each survey eg "17 in 2004: Scotland's Young People", "19 in 2005: Scotland's Young People"
- The Scottish Government has occasionally commissioned special studies to look in-depth at particular issues; these may be longitudinal, linking together two or three surveys of the same young people. Studies have included ones on:
  - *High Attaining Female School Leavers*
  - *Entrants to Higher Education*
  - *Young People Not in Education, Employment or Training*
  - *The Effects of Low Attainment on Young People's Outcomes at 22-23*
- Researchers have used the SSLS data in various studies eg a recent study compared young people's experiences of education, training and employment in Scotland with the position in England and Wales over the period 1984 - 2002.

The future of the SSLS?

- The number of young people responding to the SSLS has been falling in recent years and there is a lack of information on certain groups such as those not in education, employment or training.
- The Scottish Government has therefore commissioned a study to consider the different options that might best meet the need for information on young people's experiences at school and on their activities in subsequent years.

APPENDIX 2
CONSULTATION WITH STAKEHOLDERS*

Those interviewed in an individual capacity

Mark Adams	Microsoft (ECare)
Rowena Arshad	EOC Commissioner, Director of the Centre for Education for Racial Equality in Scotland, Edinburgh University
Andy Furlong	Glasgow University
Jim Gallacher	Glasgow Caledonian University and SFC
Vernon Gayle	Stirling University and ESRC Data Analysis for Social Science Researchers project
Paul Lambert	Stirling University
Alan McGregor	Glasgow University
Iain Noble	The Department for Children, Schools and Families (formerly DfES)
Lindsay Paterson	Edinburgh University
David Raffe	Edinburgh University
Luoana Santarossa	North Ayrshire Council
Sheila Semple	Strathclyde University
Dave Taylor	Taylor Educational Services
Anna Vignoles	London School of Economics
Chris Warhurst	Strathclyde University and member of SSLS Advisory Committee

Those interviewed as representative of relevant organisations

Association of Directors of Education in Scotland (ADES)	David Cameron
Careers Scotland	Paul Gierthy, John Eddyshaw, Fiona Jaap, Agnes O'Donnell, Jackie McBryde
Commission for Racial Equality (CRE)	Morag Patrick
Equal Opportunities Commission (EOC)	Victoria Jamieson
Economic and Social Research Council (ESRC)	Peter Elias
Future Skills Scotland	Patrick Watt
Her Majesty's Inspectorate of Education (HMIe)	Frank Crawford
Learning & Teaching Scotland	Alan Armstrong
ScotCen	Simon Anderson
Scottish Council for Independent Schools (SCIS)	Fiona Valpy
Scottish Enterprise	Pamela Lockhart
Scottish Funding Council (SFC)	John Kemp, John Duffy
Scottish Government (MIAP)	Gerhard Mors
Scottish Government (ScotXed)	Emma Milburn, Mal Cooke, Murray Dunlop
Scottish Parent Teacher Association	Judith Gillespie
Scottish Parliament Information Centre (SPICe)	Camilla Kidner
Scottish Qualifications Authority (SQA)	Carolyn Davidson

* does not include the Scottish Government staff who took part in the two consultation seminars

APPENDIX 3
TOPIC GUIDE FOR INTERVIEWS

1. Purpose and design
- what do you see as the purposes of a longitudinal study of young people's transitions?
- topics/issues that would benefit from a longitudinal vs cross-sectional approach
- if you are familiar with SSLS, any views on extent of change needed to SSLS?

2. Which young people should be included?
- which groups and sub – groups are of interest to you?
- key characteristics would want to disaggregate on?
- any views on what would be an adequate sample size?

3. Timing and frequency
- at what age should the study start/end?
- how frequently should young people be surveyed and at what age/stage?
- how often should a new cohort of young people be recruited to take part?

4. What topics do you need information on?
- factual and/or attitudinal?
- individual level/household/community/LA/TTW etc?

5. How might you use the data?

6. Changing data needs and uses
- have your data needs re young people's transitions changed over recent years – how/why?
- are there any new/emerging data needs that a longitudinal study should consider?

7. Comparability
- how interested are you in comparability of data - over time; inter UK; internationally?

8. Analysis and dissemination
- any preferences in respect of data analysis eg pre-determined analyses on regular cycle; availability of staff to carry out analysis at the request of stakeholders; availability of data to carry out own analysis etc?
- any preferences in terms of how the results should be disseminated?

APPENDIX 4
ADMINISTRATIVE DATA FOR LINKAGE TO LONGITUDINAL STUDY

Data from schools via ScotXed

Coverage
Pupil-level data on all pupils in publicly-funded schools up to and including the S6 stage (age17/18). Note that data from independent schools may be a problem, because they are collected separately and are more limited in scope.

Timing
Data are collected each school year – thus data on each young person at secondary-school will be included in annual data collections from S1 until the stage s/he leaves school.
Three collections are of particular relevance:
- the school census in September each year, which includes information about pupils in each year stage.
- Return of pupil-level data on attendance, absence and exclusions in September each year, referring to previous year stage.
- Identification school leavers by term – September each year.

Data are collated by local authorities from their schools and passed to the Scottish Executive for statistical purposes. For the secondary stages, the same information together with pupil's name and address is provided to Careers Scotland to enable them to provide careers guidance services.

Further data collections from schools include a confidential school-to-school exchange of personal information via a clearing house in Scottish Executive, to ensure that pupils under the age of 16 who leave one school are tracked to their next school, and that vulnerable pupils cannot be lost from the education system.

Unique identifier
Scottish candidate number (SCN)

Other Variables
The pupil census includes: Scottish Candidate Number (SCN); School attended; admission date; stage; postcode (from which local area information can be derived);sex; date of birth; first language; ethnicity; national identity; asylum status; entitlement to a free school meal; looked-after status; disability; additional support needs.
(Source: www.scotxed.net)

Data on courses and qualifications from the Scottish Qualifications Authority (SQA)

Coverage
All Scottish National Qualifications, (including Standard Grade, Access, Intermediate, Higher and Advanced Higher courses and units), and Scottish Vocational Qualifications (SVC), and Higher Nationals (HN).
SQA courses and qualifications can be attempted by students of all ages and stages, but for the most part do not start before the S3 stage at Scottish secondary schools.(But this may change as a result of a Curriculum for Excellence)

Timing
The main distribution of data takes place in September each year following the annual examination diet in May/June. Candidates are sent their certificates in August, which provide a cumulative record of all qualifications achieved at that point. Some candidates may then appeal against their grades. In September, the relevant pre-appeal data are provided to local authorities and the Scottish Executive for statistical purposes, and this is followed by post-appeal data in the following December/January.

Unique identifier
The Scottish Candidate Number (SCN).
Note that the SCN is currently administered by SQA, but its use as a unique learner number has extended beyond its original purpose, and is now allocated to primary school pupils at the earliest stage of schooling. Under MIAP it may be possible to include non-SQA qualifications linked by SCN if there is a Scottish Learner Registration Service.

Other variables
A wide range of attainment variables can be derived from SQA data. Careful thought is needed on the definition of longitudinal variables appropriate to young people's educational outcomes and transitions.

Careers Service Survey of School Leavers' Destinations

Coverage
All young people in Scotland who left school from the previous session. Survey covers individual school leavers from publicly-funded schools. Data from independent schools collected separately.

Timing
October following year left school.

Unique identifier
Scottish candidate number (SCN)

Variables
Destination ie whether in education, employment, training or not.

Scottish Funding Council (SFC)

Coverage
All Further Education students

Unique identifier
SFC links SCN to FES records

Other variables
Not known

UCAS
Coverage
All applications tohigher educationin UK.

Unique identifier
UCAS collects Scottish candidate number (SCN) as part of application process, and uses it to request qualifications data from SQA.

Other variables
Not known

HESA
Coverage
All students inhigher educationin UK

Unique identifier
HESA collects Scottish candidate number (SCN) as a standard field within the HESA student record

Variables
Not known

Training: Modern Apprentices/Skillseekers/Get Ready for Work/Training for Work

Coverage
Young people on government-supported training administered by Scottish Enterprise (SE) and Highlands and Islands Enterprise (HIE).

Timing
Data on training starts can be generated on a monthly basis.
Scottish Executive gathers the data using the Corporate Training System (CTS). Training providers input details on their trainees into CTS and Scottish Executive can then extract this information using reporting tools. CTS information is updated regularly.
 HIE gathers training data using a web-enabled system.

Other details
Modern Apprenticeships and Skillseekers can last up to three years

Training: New Deal/Employment Zones/Action Team for Jobs

Coverage
Data on young people participating in the New Deal and Employment Zones taken from administrative benefit computer systems, held within the Work and Pensions Longitudinal Study.
Data on young people participating in Action Team for Jobs is collected from DWPs.
Management Information System.

Timing
Data are available for each month from DWP/Jobcentre Plus

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Social Science in Government