

Measurements of Participation in Scottish Higher Education Report

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MEASUREMENTS OF PARTICIPATION IN SCOTTISH HIGHER EDUCATION REPORT

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EXECUTIVE SUMMARY

Background

In December 2009, the Lifelong Learning Analytical Services Unit commissioned research on behalf of the Scottish Funding Council and the Scottish Government to examine current approaches to the measurement of participation in Higher Education (HE) and to advise on possible options for further development.

The research was prompted by a number of factors, including the recognition that the current headline measure of HE participation in Scotland – the Age Participation Index (API) – was not sufficiently broad in its coverage of mature and part-time learners. Since these groups – and other ‘non traditional’ learners – comprise a growing proportion of the total numbers of students in HE, it was important to investigate whether other measures would be more suitable for capturing current patterns of participation.

Research Methods and Approach

The research was conducted in two stages. The first stage of the work comprised a literature review together with an assessment of current practice within the UK. The second stage was a consultation exercise with a broad range of stakeholders comprising telephone and face-to-face interviews, and an online questionnaire survey. A total of 18 telephone interviews and 2 group face-to-face interviews were conducted. The online survey was completed by 33 respondents.

Literature Review and Assessment of Current Practice

The literature review revealed a vast literature on the issue of widening participation which discusses the factors which influence the participation of disadvantaged groups and non-traditional learners, the impact (actual and potential) of local and national policies on patterns of participation, and the economic and social benefits that may flow from wider participation. However, by contrast, the literature which deals specifically with the measurement of participation rates, both in the UK and elsewhere is limited.

The measurement of participation in HE is impacted by a range of complex and detailed definitional and methodological issues. These include the definitions of participation, higher education, domicile and mode of learning; the availability of individual level data; and the potential for disaggregation by social, demographic, educational or other characteristics.

The term ‘participation’ is used in different ways within the literature, to mean ‘total enrolment’ or ‘initial entry’. This lack of precision in the terminology is confusing, especially for policy makers and wider stakeholder groups. Moreover, participation interpreted as enrolment or as initial entry makes no reference to achievement or qualification at HE level and so does not provide a statistical measure of what might be termed ‘successful participation’.

The literature identifies a number of different types of measurement of participation. The main types of measure described in the literature are gross enrolment rates; age specific participation rates; age specific initial entry rates; true cohort young

participation rates; and, for local areas, standardised participation ratios. Each type of measure has different strengths and weaknesses.

The review of approaches to measuring HE participation revealed that there was no common methodology across the four UK administrations. However stakeholders in all administrations expressed a wish for greater comparability both in headline measures and in general methodology.

While the Age Participation Index (API) continues to be used and valued in both Scotland and Northern Ireland as a headline measure of participation, it is no longer produced in England. The only headline measures in Wales are based on gross enrolment rates. The headline measure currently used in England is the Higher Education Initial Participation Rate (HEIPR) which covers a broader age range than the API.

The review of the international literature emphasised the sensitivity of comparisons to the measures chosen and revealed a very wide range of methodologies in OECD countries.

The widening access agenda is of interest to all four UK administrations, but the measures used to monitor improvements in widening access are variable. While Scotland has concentrated on the (area based) Scottish Index of Multiple Deprivation (SIMD), the other administrations have taken more interest in measures based on the National Statistics Socio-Economic Class (NS-SEC). In addition, statisticians at the Higher Education Funding Council for England (HEFCE) have developed the Young Participation Rate (YPR) which has been used to gain understanding of both geographical and socio-economic disparities in access to HE.

There is no satisfactory 'off the shelf' measure currently available for measuring the rates of participation for part-time and mature learners.

Stakeholder Consultation

The stakeholder consultation confirmed that no single 'headline' measure of participation can address the complex questions that policy makers, managers, and academics are seeking to answer. Whilst the Scottish API is familiar to those working in the field, and whilst many would not wish to see it discontinued (since it provides information about trends) there is a shared view that it does not provide a broad enough assessment of the participation of 'non-traditional' groups (especially mature learners, and those studying on a part-time basis).

There was broad agreement that information is required to cover more than one type of 'participation'. Stakeholders are concerned equally with enrolment, initial entry, articulation, subsequent entry, and completion. At a broader level, stakeholders believe that 'participation in Higher Education' is a rather limited basis on which to analyse the life course trajectory through the educational system and into employment.

Stakeholders identified a wide range of factors by which they wished any measure of participation to be reported. These covered individual student characteristics (including age, gender, race, parental income, previous educational attainment,

disability, other indicators of multiple deprivation, origin, domicile), institutional factors (type of HEI / College), and mode of study.

A fairly positive view emerged of the efforts which have been made in recent years to improve the measurement of participation. In general, stakeholders were of the opinion that the standard of analysis, publication, and dissemination of the current information had improved.

Stakeholders are most interested in developing new information sources which will allow a life course approach to be adopted. There is a strong preference for a longitudinal approach which would allow the tracking of students through from their earliest years and educational experiences, into Higher Education and then into employment.

Options for Development

There is no clamour for any immediate changes to the current provision of measures. However there are a number of improvements that could be enacted in the short to medium term. In addition, there are a number of suggestions for developmental work in this area which could be undertaken in the longer term.

In the short term:

- the API should continue to be produced, but the two formulae used by the Lifelong Learning Statistics Branch and the Scottish Funding Council should be harmonised;
- a user friendly guide to the rationale for, and interpretation of, current measures should be produced; and
- an Age Participation Index, calculated specifically for the most deprived section of the population, could be used to monitor widening access

In the medium term:

- a YPR for Scotland could be produced. This is a reliable measure for assessing the proportions of young people entering HE which is 'proofed' against abrupt changes in the population denominators. This would improve comparability across the UK;
- for the understanding of mature and part-time participation, net entry rates into tertiary A and tertiary B HE specific for mode and single year (or quite narrow age groups beyond age 21) should be calculated. Summing these over age groups would facilitate comparisons with the English HEIPR and the OECD net entry rates;
- production and publication of the API should be discontinued within the medium term (3-5 years).

In the longer term:

- development work could be undertaken on the possibility of taking a life course approach to measuring, analysing and interpreting participation in HE;
- anonymised data linkages between e.g. UCAS applications and HESA records, should continue to be explored;
- the feasibility of integrating data in Scotland collected by different organisations for HE delivered in HEIs and Colleges should be examined.

1 INTRODUCTION

- 1.1 In December 2009 the Lifelong Learning Analytical Services Unit commissioned research on behalf of the Scottish Funding Council and the Scottish Government to examine current approaches to the measurement of participation in Higher Education (HE) and to advise on possible options for further development.
- 1.2 The research was conducted in two stages. The first stage of the work comprised a literature review together with an assessment of current practice within the UK. The second stage was a consultation exercise with a broad range of stakeholders comprising telephone and face-to-face interviews, and an electronic questionnaire survey with all those who have registered their interest in this topic through the Scottish Government's statistical consultation register (SCOTSTAT).
- 1.3 This report brings together the findings from the two stages of the work, and sets out options for development based on the material from both the technical aspects of the work (undertaken at Stage 1) and from the consultation exercise.
- 1.4 Sections 2-7 below, which relate mainly to Stage 1:
 - discuss the key definitional and methodological issues
 - provide a brief summary of current approaches across the UK
 - highlight relevant research from the wider international literature
 - and discuss the strengths and weaknesses of current approaches.
- 1.5 Section 8 presents the findings from the stakeholder consultation. The conclusions are set out in Section 9, and the options for development are presented in Section 10.
- 1.6 As far as Stage 1 is concerned, there is a vast literature on the issue of widening participation which discusses the factors which influence the participation of disadvantaged groups and non-traditional learners, the impact (actual and potential) of local and national policies on patterns of participation, and the economic and social benefits that may flow from wider participation. However, by contrast, the literature which deals specifically with the **measurement of participation rates**, both in the UK and elsewhere is limited. Given the short amount of time available for this first stage of the work, our report therefore draws mainly on a few key sources.
- 1.7 First, there are two important reports (Ramsden (2003) and Corver (2005, 2010)) which have greatly influenced the measurement of overall participation rates in England and small area participation rates throughout the UK. Second, we have examined the statistical publications produced by the bodies responsible for administering HE within England, Scotland, Wales and Northern Ireland. Third, we have held detailed conversations with key individuals within all four UK administrations to establish current approaches, to discuss the methodological and substantive issues, and to ascertain any plans for changes or development of current approaches. Fourth, we have scanned the

international literature, with reference to the comparative data published by the Organisation for Economic Cooperation and Development (OECD) publication 'Education at a Glance' and to reviews of the interpretation of these data for a range of countries including USA, Canada, Netherlands, Australia and Scandinavia.

2 DEFINITIONAL AND METHODOLOGICAL ISSUES

- 2.1 The measurement of participation in HE is impacted by a range of complex and detailed definitional and methodological issues. These include the definitions of participation, higher education, domicile and mode of learning; the availability of individual level data; and the potential for disaggregation by social, demographic, educational or other characteristics.
- 2.2 These issues are discussed briefly below and are elaborated in Sections 3-6 below. It is clear that, given the definitional and methodological complexity, it is unlikely that one single measure of participation in HE will be able to capture the key dimensions for policy makers and stakeholders with a variety of perspectives and interests.

Definition of Participation Rate

- 2.3 The term 'participation' is used in different ways within the literature, to mean 'total enrolment' or 'initial entry'. This lack of precision in the terminology is confusing, especially for policy makers and wider stakeholder groups.
- 2.4 While it is essential to measure the **number** of participants of various kinds, for many purposes it is more meaningful to measure participation **rates**, that is the number of HE participants as a proportion of the relevant population. Defining and measuring an appropriate population denominator is sometimes difficult.
- 2.5 Enrolment rates measure the 'stock' of students (with each student being counted in the participation measure for every year that they are enrolled in HE), whilst entry rates measure the 'flow' of students (with each student being counted in the participation measure only for the year in which they first enrol). These are conceptually different, but are not always clearly distinguished in the literature.
- 2.6 The definition of 'entry' – if it is to be used to mean 'new entry' (and therefore meet the requirement that each potential student can be counted only once) is further complicated by the requirement to define 'new'. This is also complex as it requires any measure to be able to distinguish those who have entered HE before. This raises questions about how to deal with cases where an individual has entered a HE course, but left well before completing the course.
- 2.7 Participation interpreted as enrolment or as initial entry makes no reference to achievement or qualification at HE level. But it must be borne in mind that a focus only on the stock or flow of students does not necessarily provide a statistical measure of what might be termed 'successful participation'.

Definition of Higher Education

- 2.8 The definition of 'higher education' is also complex, dynamic, and quite variable internationally, notwithstanding the harmonisation efforts ongoing through the Bologna process (European Commission (2009)). In Scotland higher education is defined by reference to levels 7 and above of the Scottish Credit and Qualifications Framework (SCQF). In the UK as a whole, for the purpose of the Higher Education Statistics Agency (HESA's) data collection, HE students are those students on courses for which the level of instruction is above level 3 of the Qualifications and Curriculum Authority (QCA) National Qualifications Framework (NQF) (e.g. courses at the level of Certificate of HE and above). HESA publish an approximate correspondence between the NQF levels, and those of the SCQF.
- 2.9 HESA distinguishes the course aim of students entering HE as postgraduate, first degree and other undergraduate. In Scotland the term 'sub-degree' is used synonymously with 'other undergraduate'. The category 'other undergraduate' covers foundation degrees, HND, HNC, Dip. HE, Cert. HE and a variety of professional and other qualifications¹.
- 2.10 Higher Education courses are delivered in Higher Education Institutions (HEIs). In Scotland, there is also substantial delivery of Higher Education courses in Colleges. In the rest of the UK a much smaller proportion of Higher Education is delivered outwith HEIs.
- 2.11 Some courses designated as HE may include components below the level designated by the SCQF or QCA as higher education.

Definition of Domicile

- 2.12 Another consideration in relation to the selection of measures of participation is the extent to which policy interest focuses on domicile. Some policy questions (relating for example to the cost implications of provision of Higher Education, or to the performance of individual educational institutions) will require measures which include all students whatever their domicile, while other policy questions (for example questions relating to the access of disadvantaged population subgroups to Higher Education) would focus on domestic students only.
- 2.13 Domicile is defined by a student's permanent or home address prior to entry to the course. Participation statistics may be classified by country of domicile, distinguishing between students from each of the four administrations within the UK, countries of the European Union (EU), and non-EU countries. In cases where students have recently relocated prior to their application to HE the

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http://www.hesa.ac.uk/index.php?option=com_studrec&task=show_file&Itemid=233&menu=07051&href=a^ ^COURSEAIM.html

country of domicile may not represent the country where they had the majority of their pre-HE education.

Modes of Learning

- 2.14 Full-time study is defined by HESA to mean a programme of study of at least 24 weeks within a year with an average of at least 21 hours per week. Part-time students may be on a programme lasting less than 24 weeks or may be studying part-time throughout the academic year.
- 2.15 Where full-time and part-time enrolments are both included in the participation rate the concept of full-time equivalent (FTE) may be used as an alternative to the total headcount. The FTE for part-time students may be estimated by HEIs on either a 'credit' or 'time' basis relative to a comparable full-time course. For non-degree courses in Scotland the FTE is relative to a designated total number of hours for a full-time student. (The definition uses the SUM (student unit of measurement) which equals 40 hours of study.)

Availability of Individual Level Data

- 2.16 The main source for individual level student data which forms the basis for many of the measures of participation which either are or can be produced in the UK, is the HESA student record. For HE programmes delivered within Colleges separate data records are collected in England, Scotland, Wales and Northern Ireland. These data are supplied to HESA but there may be fields that are not directly comparable across the individual learner record systems.
- 2.17 More sophisticated measures of participation might be developed if HESA data could be individually linked to other record systems such as the Universities and Colleges Admissions Service (UCAS), which processes most university applications for full-time degrees, and the National Pupil Database. However there are data protection issues which could complicate efforts to link HESA student records with UCAS. Individual linkage with survey data would also be helpful.
- 2.18 No comprehensive data are collected on UK domiciled students engaged in HE programmes outside the UK.

Disaggregation

- 2.19 For most policy purposes disaggregation by age and gender is vital. There are methodological issues in relation to recombining age and gender specific participation rates into broader overall measures. For example, the variation in normal school leaving age between countries of the UK may affect the interpretation of the participation rate of the 18-21 age group.
- 2.20 Substantial development work has been undertaken in relation to disaggregating participation to small geographic areas, with a view to evaluating policy mechanisms aimed at widening access to HE. One issue has been the requirement to estimate local populations with students counted at

their home address. This has necessitated considerable work since the required data are not directly available from the last census. Also, since participation rates for small areas may not be statistically stable there are questions as to how to model the local rates so as to ensure interpretation is not over-influenced by chance factors.

- 2.21 Disaggregation by other individual factors such as socio-economic group, disability and ethnicity is important, but raises issues in relation to estimation of appropriate denominators.

3 METHODS OF MEASUREMENT OF PARTICIPATION

- 3.1 The literature identifies a number of different types of measurement of participation. These can be characterised as ranging from the very simple to the more sophisticated. Each type of measure has different strengths and weaknesses and these are discussed more fully in Section 7.
- 3.2 The main types of measure described in the literature are gross enrolment rates; age specific participation rates; age specific initial entry rates; true cohort young participation rates; and, for local areas, standardised participation ratios. These are described briefly below.

Gross Enrolment Rate

- 3.3 This is the crudest possible measure of participation. It is calculated as the ratio of total student enrolment to total population. For countries with rudimentary statistical systems this is the only feasible measure.

Age Specific Participation Rates

- 3.4 Age specific participation rates are much more commonly used. For example, the ratio of total students aged 18-21 to total population aged 18-21. These rates are influenced by many factors including: the changing propensity to enter HE (influenced by economic factors and the supply of places), the average length of course, drop-out rates and the changing age structures in the population.
- 3.5 International comparisons of age specific participation rates are complicated by the fact that countries vary with regard to: the ages at which compulsory schooling ends; the typical age at entry into higher education; the average length of courses; and drop-out rates. For example in Finland most students have to take one or several gap years before they can continue in tertiary education, and in Germany and Austria all 18 year-old males are required to perform either six months of military service or 12 months of civilian service (Adelman(2009), p.24).
- 3.6 For these reasons some variants on age specific enrolment rates have been suggested for use in international comparisons. For example if two countries with similar four year programmes for first degrees have different typical ages

at entry (y) to HE they can be compared by dividing the number of students enrolled at ages y to y+3 by the total population in this age range (Kaiser and O'Heron (2005)).

- 3.7 Age specific participation rates are frequently disaggregated by level and mode. For example the percentage of 18-21 year olds studying full-time on first degree programmes is a much more focused rate than simply the percent of 18-21 year olds participating in HE.

Initial Entry Rates, the Age Participation Index and Net Entry Rates

- 3.8 Instead of focusing on the total number of students (of given ages) **enrolled** in HE programmes a clearer interpretation may often be based on the number of students **entering** HE in a given year. This concept is clearest if entrants are only counted when they are **new entrants** to the particular level of HE under consideration. Given a careful enough definition of the term 'new entrant', an individual can only be a new entrant once. Dividing the number of new entrants in a given age range by the population in that age range gives a **rate of initial entry** into HE.
- 3.9 A variant on this approach is the Age Participation Index (API) currently published by the Scottish Government. This divides the number of 17-20 year old Scottish domiciled new entrants into full-time HE by the population aged 17. If there were no changes from year to year in the size of the 17-year old population or of each cohort's subsequent age-specific rates of entry into HE then this rate would represent the probability that a Scottish domiciled person aged 17 would enter into full-time HE for the first time by the age of 21.
- 3.10 Initial entry rates specific for single years of age, or small age bands are called (by OECD) **net entry rates**. If entry rates for several successive years of age are added the result is also called a net entry rate. Such a sum is not entirely logical, and could in theory lead to absurd rates of over 100%. A sounder method is to combine current age specific initial entry rates with the proportions of the population at each age who had not entered HE in previous years (Ramsden (2003) pp72-73). The disadvantage of this formula is that the complications of its construction would make the participation measure less transparent to users.
- 3.11 Initial or net entry rates take no direct cognisance of the length of HE programme that an individual enters into, nor the chances that the individual drops out or fails to qualify. This is in a sense an advantage over participation rates, in that net entry rate comparisons across countries are not confounded by variations in completion rates and course length. Changes in initial entry rates over time and differences in initial entry rates between countries are of course affected by economic factors that influence demand and supply of places and demographic changes that affect the age specific population denominator.
- 3.12 A consultation was carried out by Ramsden (2003) in relation to the replacement of the official measure of participation in England (the Initial Entry Rate, IER). It emerged that most users were of the view that a pure measure

of entry was insufficient, in that the statistic would be interpreted as a measure of participation. According to those consulted a suitable measure should only include entrants who had 'some real engagement' in HE. Prior to the Ramsden report new entrants were only counted in the IER if they were entering on a course of study '**expected** to last for one year or more'. Ramsden examined the weaknesses of this definition due to student drop-out and proposed instead that entrants should be counted only if their actual period of study exceeded six months. This proposal was accepted for the purposes of the English Higher Education Initial Participation Rate (HEIPR) which is discussed further in Section 4.

- 3.13 Depending on how and when enrolments are counted enrolments may include some students who dropped out too early to be counted as new entrants. For example, a student who enrolls in September and is counted in an enrolment census in December but leaves after Christmas would not be counted as an entrant on the above definition.
- 3.14 Variations between countries in the way it is determined whether entrants have previous experience of HE at the level they are entering (and are therefore not 'new entrants') affects international comparisons of entry rates.

True Cohort Young Participation Rates

- 3.15 When entry rates for each age group in the same calendar year are summed this is a net entry rate for a '**synthetic cohort**'. A '**true cohort**' net entry rate would be one such as (for example) the net entry rate for 17-year olds in 2005 plus the net entry rate for 18 year olds in 2006 plus the net entry rate for 19-year olds in 2007 etc. Alternatively total initial entrants from an age cohort over a period of years may be divided by the size of the cohort at the age of commencement of higher education.
- 3.16 In 2005 the Higher Education Funding Council for England (HEFCE) published a report on Young Participation in Higher Education (Corver, 2005). This was a substantial exercise in data linkage whereby true cohort entry rates for young people aged 18 and 19 were calculated for every ward in the UK. Databases from the UCAS, HESA, ILR and FES were linked in order to follow individual students through the HE system while avoiding false matches. Cohorts were defined in terms of the school year of each country (thus different for England and Scotland). The sum of the entrants aged 18 in year (y) plus the entrants aged 19 in year (y+1), divided by the estimated size of this school year cohort in year (y-3) when they were aged 15, defines the Young Participation Rate (YPR) for year (y).
- 3.17 As explained by Corver (2005), true cohort rates have the advantage that they are not so susceptible to fluctuations in the population sizes of successive cohorts resulting from changes in the birth rate 15-19 years earlier. Changes in true cohort participation rates are also probably less affected by short-term changes due to economic factors such as changes in fees or unemployment. By contrast Corver (2005, p.191) illustrates how the Age Participation Index is sensitive to rapid changes in population size.

- 3.18 A disadvantage of the true cohort YPR is that it cannot be calculated until the cohort reaches the end of the second year to which it relates. For example the YPR for the cohort which reached age 18 in 2008/09 would have some members who did not enter HE until 2009/10, and the YPR would not be available until late 2010 (at the earliest). This is one reason (among several) why Corver did not consider a larger age range.
- 3.19 One of the main interests in YPR's is as a basis for the POLAR (Participation of Local Areas) system of classifying small areas by their level of HE participation in order to assess trends in widening participation. This is discussed below.
- 3.20 Another examination of true cohort rates is presented by Kaiser and O'Heron (2005). They compare true and synthetic cohort net entry rates for ages 17-30 into first degrees in UK. For 2004/05 the true cohort rate was lower by three percentage points (30% vs 33%). This was attributed by Kaiser and O'Heron to the decline in the population of 18 year olds in the early 1990s.

Standardised Participation Ratios

- 3.21 In Scotland and Wales the technique of indirect standardisation is used to compare the HE participation rates of subnational areas, allowing for variations in local demography. The national (i.e. Scottish or Welsh) age and gender specific participation rates are applied to the population in each age-gender group in the local area to calculate the expected participation in the area if it followed national patterns. The ratio of the actual observed number of HE participants in the local area to the expected number of such participants defines the standardised participation ratio (SPR). Values greater than 1 imply that the local area has higher participation than the national average and values less than 1 imply the converse.

4 MEASUREMENT OF PARTICIPATION WITHIN THE UK

- 4.1 Current approaches within Scotland, England, Wales and Northern Ireland are described below. The summaries are based both on information which is available from websites, and also on detailed conversations with staff within each administration. We comment on the measures used to represent overall HE participation and local variation in participation within each of the four administrations. Further material on disaggregation by local area and other factors such as social class is presented in section 6.

Scotland

- 4.2 The most recent statistics on HE participation in Scotland are published by the Scottish Funding Council (2009) and the Scottish Government (2009).
- 4.3 Scottish Funding Council (2009) publishes gross enrolment rates for Scottish domiciled students (with total population aged 16+ as denominators) on both headcount and FTE bases. (Headcount basis means the usual definition given in paragraph 3.3; FTE basis means total full-time equivalent enrolment divided by total population.) These rates are also disaggregated by mode (full-time /

part-time) and by level of study (other undergraduate / first degree / postgraduate).

- 4.4 Age and gender specific participation rates are also published on both headcount and FTE bases. Headcount rates are graphed by single years of age from 16 to 24 and by five year age groups up to 85+.
- 4.5 Standardised participation ratios are calculated for each Scottish local authority. Trends have been studied in a number of SFC publications (Raab and Small (2003), Scottish Funding Council (2009)).
- 4.6 Both the Scottish Government (Education Analytical Services Division) and the Scottish Funding Council publish an Age Participation Index (API). As mentioned in paragraph 3.9 the Scottish Government defines the API as the ratio of the number of 17-20 year old Scottish domiciled new entrants into full-time HE to the population aged 17. The SFC uses a slightly broader definition of a new entrant : first-year entrants to HEIs who have no previous HE qualification and first-year entrants to HE programmes within Scotland's Colleges. This includes some part-time students and a few aged 16. The information on previous qualification is less complete for entrants to Scotland's Colleges than for entrants to HEIs. The SFC definition of new entrant is only defined by lack of previous HE qualification at an HEI.
- 4.7 Over the last five years the SG's API has been on average about three percentage points lower than the SFC's API. The year on year changes in each series have sometimes, but not always, been similar. For example, between 2005-6 and 2006-7 the SG's API dropped by two percentage points while the SFC's API did not change. However both series are affected by changes in the size of the 17-year old population, making short-term trends hard to interpret.
- 4.8 As a special exercise within the lifelong learning statistics branch of the Education Analytical Services Division, the OECD net entry rate has been calculated for entrants to first degree programmes in Scottish HEIs and Colleges. For this exercise HESA's matching back method of defining 'new' entrants (see paragraph 4.16 below) was not used. Entrants into Colleges who completed less than 25% of their first year course were excluded. The fact that this measure is not restricted to Scottish domiciled students implies that it is less relevant as an indicator of participation for the Scottish population. (Scotland imports a large proportion of students with 27% of entrants to first-degree study in 2008-09 coming from outwith the country²). But comparison of this indicator with other countries could inform assessments of the performance and requirements of the Scottish HE sector as a whole.
- 4.9 This exercise did not include calculation of the OECD net entry rates for sub-degree and advanced research programmes.
- 4.10 A similar net entry rate, but restricted to Scottish domiciled new entrants, has also been calculated by statisticians within the Education Analytical Services Division. This is described as the 'All ages, All modes' measure. Scottish

² Students in Higher Education at Scottish Institutions 2008/09 (NATIONAL STATISTICS) – Table 15

domiciled entrants into first degree programmes at all UK higher education institutions were covered, but first degree entrants in Colleges were excluded. In this calculation 'new' entrants were those with no previous first degree level qualifications – a weaker exclusion than that used in the OECD net entry rate. A somewhat different age grouping was used with new entry rates summed for single years up to age 29, 5 year age groups from 30 to 64 and 65+.

- 4.11 The 'All ages, All modes' indicator appears closer in spirit to the English HEIPR (described below) than any other indicator currently available in Scotland, but the exclusion of sub-degree programmes is very significant.

England

- 4.12 The headline participation measure for England is the Higher Education Initial Participation Rate (HEIPR) which has been designated a National Statistic. To calculate the HEIPR the number of new entrants into HE at each single year of age (from 17 to 30) is divided by the population of that age and the single year rates then summed. If the population age structure and the probability of first entering HE at a given age were both constant from year to year this would closely represent the chance that a person aged 17 would enter into HE at some point before age 31. This is a synthetic cohort net entry rate. HEIPRs specific for males and females, full-time and part-time students and narrower and broader age ranges are also published (HEIPR60 covers ages 17-60, HEIPR20 covers ages 17-20).
- 4.13 The HEIPR is calculated for English domiciled students and covers entry into higher education courses at all UK universities and further education colleges in England, Scotland and Wales (courses designated higher education or at NVQ level 4 or above).
- 4.14 Thus for a given age, say age 18, the number of English domiciled students entering HE in the UK is divided by the estimated English population aged 18. Because of the way census population statistics are collected and updated to produce annual population estimates, this population denominator effectively includes some 18-year old students whose term-time address is in England but whose home address is in Scotland, Wales or Northern Ireland, and excludes some 18-year old English domiciled students whose term-time address is in Scotland, Wales or Northern Ireland. However, even for single year age groups the inaccuracy in population denominators for the whole of England as a result of the **net** cross-border flow of students is relatively small.
- 4.15 The HEIPR would only be an accurate predictor of future synthetic cohort-based measures of participation under perfectly stationary conditions with no change from year to year in the age-specific probability of entering HE. However the use of a synthetic cohort measure means that changes in the HEIPR are susceptible to changes in preferred age at entry to HE, as might happen if there were an increase in tuition fees (Corver, 2005 p.192).
- 4.16 Suppose, for example, an announced increase in fees for year y+1 persuaded all school-leavers who had intended to take a gap year to proceed instead straight into higher education. The net entry rate for, say, age 18 would be

markedly higher for year $y+1$ than year y , and in all likelihood the HEIPR for year $y+1$ would be higher too. But in year $y+2$ the net entry rate for age 19 might drop as a large proportion of that cohort had entered in year $y+1$; thus the HEIPR might fall. This could happen while the true cohort young participation rates for those reaching age 18 in years y , $y+1$ and $y+2$ remained unchanged.

- 4.17 An important part of the HEIPR definition relates to the determination of 'new' entrants. This requires removal of entrants with previous experience of HE lasting six months or more. A complex matching algorithm looks back over HE data for at least 12 years and FE data for at least 10 years in order to decide whether the entrant is indeed 'new' to HE. Because data sources do not allow matching further back this means that the definition of new entrant is not quite correct for entrants aged over 30, and becomes progressively less appropriate for older entrants. The six month rule is arbitrary but it may not be practical to construct a definition which takes better account of the nature of previous HE experience (length of course, level studied and whether success was achieved).
- 4.18 The possible exclusion of professional courses less than one year in length from the definition of HE was considered in some depth in the Ramsden report (Ramsden, 2003 paragraphs 202-226 and Appendix 3) when the HEIPR was being defined. Decisions with regard to short professional qualifications or training courses that may or may not be accredited by the SCQF and the QCA could have a bearing on the inclusion of mature HE entrants as 'new' entrants, and thus affect the participation rates for mature entrants.
- 4.19 While the HEIPR was designed as a national statistic for England, its disaggregation by region and by other factors was considered in a second report by Ramsden (2005). Disaggregation to large English regions was recommended, although some work would be needed to adjust the population base numbers. This is because the 2001 census counted students at their term-time address while HESA counts entrants at their home address, and the effect of net flow across regional boundaries has a relatively greater impact on regional age specific population estimates. In any case the mobility of young people means that for smaller regional populations the age specific populations are less accurate at census time and become more unreliable as years progress to the next census. Thus the age specific initial entry rates become less reliable for smaller areas. The Ramsden review did not recommend disaggregation of the English HEIPR to populations significantly below the level of UK regions, most of which are comparable in population size to Scotland.
- 4.20 The Age Participation Index is no longer calculated in England.

Wales

- 4.21 In Wales statistics on HE participation are produced by the Higher Education Funding Council for Wales (HEFCW), while statistics on FE are produced by the Welsh Assembly Government (WAG). This differs from the situation in Scotland, where SFC publishes statistics on both HE and FE participation.
- 4.22 The overall Welsh HE participation rate is calculated as all enrolments of Welsh domiciled students (full-time and part-time, all ages) as a percentage of the total population. This is a gross enrolment rate. Age specific participation rates are published for age bands between 16 and 59, and these provide clearer interpretation than the overall rate. The rates are also broken down by gender within age groups and gender differences in participation are calculated.
- 4.23 The enrolments counted in the Welsh participation rates could include some students with little 'real engagement' in HE, since there is no requirement for a minimum actual period of study, or minimum expected length of course incorporated in the definition.
- 4.24 Furthermore, there are some non-degree enrolments classed as 'institutional credit' or 'no formal qualification'. In 2004/5 about 15% of these enrolments were aged under 18 and were on 'taster' sessions in higher education (HEFCW, 2009). It is not clear what level these courses were at in terms of QCA definitions.
- 4.25 HE participation rates for the Welsh domiciled population are not broken down by first degree / sub-degree. The numbers enrolled by level, mode, gender, ethnicity etc are tabulated by StatsWales, but the only rates calculated are by age and gender.
- 4.26 No measures based on initial entry rates are published, but we were told that there was a desire to publish a participation statistic comparable with those produced elsewhere in the UK.
- 4.27 The WAG also publishes gross enrolment rates for all post-16 education and training, by gender and overall. This covers Welsh domiciled students at UK HEIs, students enrolled at Further Education Colleges (FECs) in Wales and England, pupils in maintained school sixth forms in Wales, and work-based and community based learners. Gross enrolment rates for post-16 education and training excluding HE are also published, and these are in fact subdivided by FE, sixth form and work-based learning.
- 4.28 For both HE enrolments and all post-16 learning, standardised participation rates are calculated and mapped for each of the 22 Unitary Authorities in Wales. For HE enrolments these SPRs are further disaggregated by mode and gender, and by age for full-time undergraduates.

Northern Ireland

- 4.29 HE statistics in Northern Ireland (NI) have tables on numbers of enrolments into HE by mode, level, location and gender. However the only participation rate calculated is the Age Participation Index (API). This is defined as the number of NI-domiciled young entrants (aged under 21) to full-time undergraduate higher education (in the UK or Republic of Ireland) as a percentage of the 18 year-old population of Northern Ireland. In Northern Ireland most entrants leave school at age 18, and gap years are less common than in England. The API is very similar to the Scottish API, the differences being (a) inclusion of study in the Republic of Ireland, and (b) division by the population aged 18, where Scotland uses the population aged 17.
- 4.30 There are no immediate plans to change or extend statistics on participation rates, however Northern Ireland's API is kept under constant review. We were also told that there would be a wish to improve comparability with other UK administrations. Apparently an unpublished study within the Department of Learning and Employment considered application of the HEIPR and concluded that it would indicate rates of up to about 60% in Northern Ireland.
- 4.31 The Northern Ireland administration has not set any specific target for HE participation.

5 MEASUREMENT OF PARTICIPATION OUTWITH THE UK

- 5.1 The Organisation for Economic Development and Cooperation (OECD) is a forum where the governments of 30 democracies (the majority of EU countries plus USA, Canada, Australia, New Zealand, Japan and Korea) work together to address economic, social and environmental challenges. The OECD Directorate for Education produces an annual publication, Education at a Glance (EAG), which includes tabulations and analysis of quantitative, internationally comparable indicators of participation in higher education. The levels of educational programmes are defined by the International Standard Classification of Education (ISCED) which is produced by the UNESCO Institute of Statistics, working in conjunction with OECD and Eurostat (UNESCO, 1997). The last revision was in 1997 and the next will be in 2011. Tertiary education is at ISCED levels 5 and 6. Level 5 is divided into 5A which corresponds approximately to Honours degrees, graduate diplomas and certificates and taught Masters degrees (but excluding Masters degrees by research); and level 5B which corresponds approximately to Ordinary degrees, HND, HNC, Dip HE, Cert HE and similar qualifications.
- 5.2 The OECD indicators for entry into higher education are net entry rates for levels 5A, 5B and postgraduate research students respectively. The net entry rates are the sum of new entrant rates by single years of age for ages 15-29 and by five year age groups for ages 30+. These rates are published separately for each gender and for both sexes combined (EAG Table A2.4). The table also includes, for some countries but not for UK, adjusted net entry rates in which international students have been excluded. Thus UK net entry

rates are higher than they would be if only UK citizens or residents were counted, because the UK is a net importer of students. The UK is close to the OECD and EU averages for net entry into tertiary-type 5A programmes, higher than average for net entry into tertiary-type 5B programmes and lower than average for entry into level 6 (advanced research) programmes.

- 5.3 It appears that the definition of 'new' entrants used in the UK net entry rates is different from that used in calculating the HEIPR. In this case the definition is based on a direct question to entrants on the lines of 'Have you ever started a higher education course (i.e. above A level or equivalent) in the UK before, and if so did you attend this course for 6 months or more?' The information is collected by institutions and returned to HESA. No further checking back on previous HESA or FE records is carried out.
- 5.4 OECD Education At a Glance also publishes national enrolment rates in two tables. Age specific participation rates in all levels of education (called enrolment rates) are published for ages 15-19, 20-29, 30-39, 40+ (Table C1.1). The 15-19 age group includes substantial numbers of school and further education students, and the higher age groups include postgraduates. No adjustment is made for international students. This table also contains the age at which compulsory education ends in each country, and the number of years in which over 90% of a country's population are enrolled in (primary/secondary) education. These data are highly relevant to international comparisons of age specific enrolment rates at ages beyond the end of compulsory education.
- 5.5 Rates of age specific participation in tertiary education at ages 16, 17, 18, 19, 20 are also published, (Table C1.3). School students are excluded, and there will be very few postgraduates at these ages. No adjustment is made for international students.
- 5.6 Useful reviews of the pitfalls and subtleties in comparisons of OECD participation rates have been given by Kaiser and O'Heron (2005), Adelman (2009) and Steyn (2008). Graphs in Kaiser and O'Heron (2005) illustrate, for example, that initial entry tends to occur later in Sweden, Finland and the Netherlands than in the UK. This implies care in comparing age specific entry rates. The age distribution of total enrolment in all levels of HE also varies markedly between UK, Scandinavia and North America. Where countries differ greatly in the average length of time spent in higher education (which may result from differences in the proportions of part-time undergraduates) the use of total headcount enrolment can be highly misleading.
- 5.7 Consider for example country A where 1000 students per annum enter a 3 year full-time degree at age 18, and country B where 1000 students per annum enter a 6 year part-time degree at age 18. Total headcount enrolment in B would be double that in A. But entry rates would be the same, assuming constant and equal population numbers at each year of age in both countries. The age specific enrolment rate covering the first three years of the degree (age 18-20) would be the same in both countries, but the age specific enrolment rate for ages 18-23 would be twice as large for country B than country A. Thus when making international comparisons of enrolment rates it is important to identify the best age bands to use in comparing age specific

participation, bearing in mind the modal age of entry into HE and the average length of time spent in HE.

- 5.8 It is clear that the rates used by OECD do not simply reflect a nation's effort in higher education, but – arguably more importantly – capture relevant elements of the size and historical weighting of components of the national economy. An obvious example of this is Germany which has a manufacturing export-oriented economy that requires a large skilled crafts and mid-level technical workforce, hence strong vocational and apprenticeship programmes which do not lead to tertiary degrees.
- 5.9 Commenting on OECD rates Adelman (2009) notes that “neither gross enrolment ratios nor census participation ratios are as instructive for policy purposes as setting the denominator to students who completed upper secondary school in the country at issue. Call this the basic qualifying population, as it is the population for which the education system of the country is responsible. It includes academic track, general track, and vocational track upper secondary students. It can be divided by traditional and non-traditional routes. One then asks, ‘of the qualifying population, what proportion enters short-cycle degree programs and first cycle degree programs (a) immediately following qualification and (b) within [let us say] three years?’ The qualifying population then becomes the core of cohort histories.”
- 5.10 For Scotland to produce participation statistics based on cohort histories of this kind would require greater reliance on panel studies and longitudinal surveys, enhancing the school-leavers destination survey. Removal of obstacles to data linkage based on data privacy considerations would also help to move towards this objective.
- 5.11 In addition to an examination of OECD measures we reviewed the official statistics and research literature of several OECD countries, focusing in particular on Sweden, Australia and Canada. One conclusion that emerged was that in some of these countries greater use is made of surveys to explore the issues of participation and its measurement. For instance Canada has regular longitudinal Youth in Transition Surveys (YITS) and a Post Secondary Education Participation Survey (PSEPS). These have enabled the adoption of different definitions of participation for a variety of purposes (Berger et al (2007)).
- 5.12 Australia publishes age specific participation rates and also uses surveys extensively. Their main headline indicator is ‘People aged 25-64 with a vocational or higher education qualification’³, though they produce a variety of supplementary indicators such as ‘Year 7/8 to Year 12 apparent retention rate’ and ‘Level of highest non-school qualification for those aged 25-64’.
- 5.13 The revision of ISCED which will be implemented in 2011 is currently under review and open to consultation. Sources of inconsistency may arise because countries currently use somewhat different definitions for ISCED5-6 (tertiary / higher postgraduate education) and ISCED4 (post-compulsory non-tertiary

³ <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/1383.0.55.001Main+Features52009>

education). Particular problems that have been reviewed are : the need to better distinguish between ISCED5A ('academic') and ISCED5B ('vocational'); overlap between ISCED4 and ISCED5B ; and the need for clearer demarcation between first and second degrees under both ISCED5A and ISCED5B.

- 5.14 To resolve some of these issues the review has proposed replacing the existing classifications by a more detailed structure. This may allow greater flexibility for defining measures of participation in future.

6 MEASURES OF WIDENING PARTICIPATION

- 6.1 There is a large literature on widening participation. We have not reviewed academic studies of the factors that influence participation of disadvantaged groups, the effectiveness of government policies to encourage wider participation, and assessment of the macroeconomic benefits that may flow from wider participation. Restricting ourselves to measurement indicators, we have considered the statistics available from HESA and other official sources within the UK and devolved administrations.

Indicators based on Socioeconomic Group

- 6.2 Since 2001 all national statistics related to socioeconomic group have been based on a seven-level classification (NS-SEC) defined in terms of occupation. The seven levels are : higher managerial and professional; lower managerial and professional; intermediate; small employers and own account workers; lower supervisory and technical; semi-routine; routine. There are two other categories : never worked/long-term unemployed and student/occupation not known.
- 6.3 At present it appears that Scottish participation statistics do not make any use of socioeconomic group as a category to investigate access to HE.
- 6.4 HESA widening performance indicators include the percentage of young (< 21) full-time first degree entrants who are in NS-SEC 4,5,6 and 7. The socioeconomic group of young entrants is determined by the occupation (or most recent occupation if retired/unemployed) of the higher earning parent. For mature entrants the entrant's own occupation is used⁴.
- 6.5 A supplementary table produced by HESA⁵ compares the value of this statistic between the English regions and Scotland, Wales and Northern Ireland. For example in 2007/08 the percentages were Scotland 26.3, England 29.4, Wales 30.4, Northern Ireland 40.6. These crude statistics suggest that

⁴ For one year 2008/09 a different question was asked by UCAS – occupation of higher earning parent if student was in full-time education and own occupation if student was not in full-time education. It was realised that this raised problems in connection with young students taking gap years so UCAS has reverted to the former question, as indicated above.

⁵ http://www.hesa.ac.uk/index.php?option=com_content&task=view&id=1449&Itemid=141

young full-time students in Scotland are less likely to come from lower socioeconomic groups than students in other UK administrations. The gap between Scotland and the other UK countries is even a bit bigger when young sub-degree entrants (HND, HNC etc) are considered. However the exclusion of entrants to Scottish colleges could well explain these differences. Note also that the entrants are not disaggregated by domicile, it is entrants of any domicile to HEIs within the four countries that are being compared.

- 6.6 In England a widening participation indicator known as FYPSEC (full-time young participation by socio-economic class) has been developed. The methodology is partly based on the HEIPR. The indicator compares the proportion of young people (aged 18-20) in the top three social classes who enter full-time HE with the proportion of young people in the bottom four social classes who enter full-time HE. The gap between these two proportions is an indication of differing access to HE. It is recommended that figures for a single year should not be relied upon (due to some weaknesses with the data), rather the trend over years may be used to evaluate whether participation in HE is indeed widening (Department of Business Innovation and Skills, 2009).
- 6.7 FYPSEC is only calculated for English domiciled students (Wales and Northern Ireland do not use this indicator). The population denominators are estimated from the Labour Force Survey. These denominators are estimates of the total numbers of young people in England at each of the ages 18, 19 and 20 who come from households where the parents are in NS-SEC 1 to 3 and 4 to 7 respectively. For each of the two socio-economic groupings net initial entry rates at each single year of age 18 – 20 are obtained, and then the sums over age are calculated, following the HEIPR methodology.
- 6.8 Exact replication of this approach in Scotland would suffer from the fact that there are smaller numbers in the Labour Force Survey in Scotland, and thus there would be less precision in the estimated denominators. A possible alternative approach for Scotland would be to use the Annual Population Survey (APS). The APS is based on a year's worth of Scottish LFS data with a substantial sample boost, funded by the Scottish Government.
- 6.9 In Northern Ireland the percent of UCAS accepted applicants who come from NS-SEC 5 to 7 is used as an indicator of social inequality in participation. NS-SEC 4 is omitted because it covers a large element of the Northern Ireland population which cannot be described as particularly deprived in the Northern Ireland context. This indicator would not take account of sub-degree or part-time HE entrants.

Indicators based on Free School Meals

- 6.10 Free school meal (FSM) eligibility is determined by parental income, and thus provides a limited measure of socio-economic status. Registration for free school meals is widely used as an indicator of deprivation, which can be seen to be linked to attainment levels and attendance rates⁶. Scotland has data on

⁶ <http://www.scotland.gov.uk/Publications/2009/06/22104701/2>

pupils registered as entitled to receive free school meals⁷, but it is not linked to the HESA database. The Scottish School-leavers Destination Survey (SLDS) publishes the percentages of school-leavers who were in HE a few months after leaving school, by FSM status. For leavers in 2007-08 the rates were 34% for non-FSM and 9% for FSM⁸.

- 6.11 The English National Indicator 106⁹ looks at the progression rates of pupils from English maintained schools to UK Higher Education Institutions broken down by Free School Meal (FSM) eligibility status and local authority. The measure looks at pupils aged 15 who entered HE by the age of 19. There are currently 2 time points which look at 15 year olds in 2001/02 who entered HE by 2005/06, and 15 year olds in 2002/03 who entered HE by 2006/07. For England as a whole the entry rates are 33% for non-FSM and 14% for FSM giving a gap of 19 percentage points.
- 6.12 FSM status is determined by the school census in England and the information is incorporated in the National Pupil Database. This is linked to HESA and ILR records allowing Key Stage 4 students to be tracked through to HE. It is considered highly unlikely that matching errors would cause the estimates to vary by more than the level of rounding used.
- 6.13 Wales has recently withdrawn from the National Pupil Database; free school meal information is collected in its school census¹⁰, but this does not seem to be linked to HESA records. Northern Ireland publishes statistics on school leaver qualifications by FSM status¹¹.

Indicators based on areas with low HE participation (POLAR)

- 6.14 Maps showing all wards in Scotland classified by their YPR quintile were provided in the first version of the POLAR (Participation of Local Areas) project¹². These are still available, and probably continue to portray enduring wide geographic differences in HE participation. However they are based on participation rates that are now about 10 years old. A substantial revision, POLAR2¹³, was made in 2005/06. The YPRs for this revision were based on entry into HE of the 2000 to 2004 cohorts.
- 6.15 In POLAR2 the YPRs are based on entry into all forms of HE and both full-time and part-time modes. Wards are ranked according to their YPR and arranged into quintiles for the purposes of mapping and further analysis.
- 6.16 So far as HESA is concerned this work seems to have been undertaken mainly for the purpose of providing performance indicators for HEIs. The indicators show the percent of young entrants from areas in the lowest quintile of YPR participation, and the percent of mature entrants who have no previous HE

⁷ <http://www.scotland.gov.uk/Publications/2009/06/22104701/0>

⁸ <http://www.scotland.gov.uk/Publications/2008/12/08090751/0> Table 12.

⁹ <http://www.esd.org.uk/esdtoolkit/Tree/Root.aspx?Tree=NI&ID=106>

¹⁰ <http://www.statswales.wales.gov.uk/ReportFolders/reportFolders.aspx>

¹¹ <http://www.delni.gov.uk/index/publications/r-and-s-stats/ucas-applicants/ucas-acc-app-08.htm>

¹² <http://www.hefce.ac.uk/widen/polar/guide/>

¹³ <http://www.hefce.ac.uk/widen/polar/polar2/>

qualification and come from areas in the lowest quintile of YPR participation. The indicators are calculated separately for full-time and part-time entrants, and in the case of full-time entrants for first degree, sub-degree and all undergraduate entrants. The indicators were intended to provide information relevant to the performance of institutions in relation to widening access, but total figures for England, Wales and Northern Ireland are also calculated.

- 6.17 These performance indicators (PIs) have not been produced for Scottish institutions because it was felt that ‘the very high proportion of HE that occurs in FE colleges means that the figures for Scottish institutions could, when viewed in isolation, misrepresent their contribution to widening participation’¹⁴.
- 6.18 However the YPRs on which POLAR2 is based have been calculated for all Scottish postcodes; they are published at the level of UK quintiles, but it seems probable that the exact YPR values for Scottish wards or local authority areas would be fairly easily available. Therefore the kinds of measure used in the HESA PIs could probably be calculated at the Scotland level, for example the percent of mature entrants to Scottish institutions who have no previous HE and are from low (relative to UK) participation neighbourhoods (PI Table T2b). Also the Scottish local area YPRs could be recalibrated to establish quintiles of participation relative to a Scottish standard. These statistics would not be based on Scottish domiciled entrants, unless HEFCE or SFC undertook to rework the YPR calculations for this population.
- 6.19 A difficulty in assessing local variation in participation by mature entrants is that the numerators would be defined by the number of mature entrants in a given area whereas the classification of denominators would be relative to **young** participation. A suggested alternative would be to classify areas by the proportion of adults without a degree, although the problem of population mobility would remain.

Indicators based on areas grouped by parental education or household income

- 6.20 Recent work by Corver (2010) describes trends in YPR’s in areas grouped by parental education or household income. A specially commissioned census table allowed areas to be classified by the proportion of children living in families with one graduate parent. This statistic ranged from ten percent in the most disadvantaged quintile to 48 percent in the most advantaged quintile.
- 6.21 The proportion of children living in households in receipt of income-related benefits or tax credits provided an alternative way of grouping areas. This statistic ranged from 45 percent in the most disadvantaged quintile to 5 percent in the most advantaged quintile.

¹⁴ http://www.hesa.ac.uk/index.php?option=com_content&task=view&id=1431&Itemid=141

Indicators based on areas with high levels of deprivation

- 6.22 Instead of widening access indicators based on areas of low participation Scottish statistics are based on areas with high levels of deprivation. The Scottish Index of Multiple Deprivation (SIMD; Scottish Government, 2009a) ranks local areas in Scotland using a score derived from seven domains of deprivation: income; employment; health; education, skills and training; geographic access and telecommunications; crime; and housing. The lowest ranked areas covering approximately 20% of the population are characterised as 'most deprived'.
- 6.23 The Scottish Funding Council has compared gross enrolment rates (relative to the population aged 16+) for the most deprived population with the corresponding rates for the 'less deprived' 80% of the population. Broad age specific participation rates (young 16-20 and mature 21+) were also compared, as were 'most' versus 'less' deprived participation rates within each local authority area (Scottish Funding Council, 2009).
- 6.24 An alternative approach is to compare institutions with respect to the percentage of entrants who come from the most deprived areas. Since by definition the 'most deprived' areas cover 20% of the population a crude analysis, ignoring age structure and a host of other factors, might suggest that in a world of equal access 20% of entrants would come from these areas. In fact analysis by the Scottish Government (2009b) showed that in 2007/08 only 8% of entrants to the ancient Scottish universities came from the most deprived areas whereas 22% of entrants into HE programmes in colleges were from these areas. The 'newer' universities and the post-92 universities had respectively 12% and 15% of entrants from the most deprived areas. A variation of these statistics, focusing on full-time first degree entrants, was used in the report on widening access submitted to the Scottish Parliament in relation to the Graduate Endowment Abolition (Scotland) Act 2008¹⁵.

Indicators based on level of prior educational achievement

- 6.25 A study based on linking the English National Pupil Database with HESA and ILR records and a 'cumulative Key Stage 4 and Key Stage 5' file provided by the Department for Children Schools and Families (DCSF) allowed Chowdry et al (2008) to examine many factors that potentially influence HE participation. A pertinent conclusion was that 'socioeconomically disadvantaged students have a similar likelihood of participating in HE to more advantaged students, if they achieve highly at Key Stage 4'. This suggests the importance for the widening access agenda of indicators that describe participation in terms of previous educational attainment.
- 6.26 The Scottish School Leavers Destination Survey provides information on the proportion of school leavers who enter higher education within a few months of leaving school, and through linkage with the pupil census, permits analysis of

¹⁵ <http://www.scotland.gov.uk/Topics/Statistics/Browse/Lifelong-learning/WideAccess09>

this proportion in relation to highest SCQF qualification attained and total SCQF qualifications attained. It also permits analysis of initial entry rates for young entrants in terms of the deprivation level of the area they live in.

- 6.27 The initial destinations of school leavers are surveyed in September, around three months after the majority left, but up to nine months after leaving school for those who left at the preceding Christmas. In 2009 a follow up survey of the 2008 cohort of leavers was carried out in March/April, thus about nine months after most had left school. This permitted more reliable estimation of the proportions going into HE directly from school. It is evident however that these surveys may not be able to provide information on people who take less direct routes between school and HE, for example by working for a few years or taking a gap year. Additionally we note that both surveys are aimed primarily at publicly funded schools, and information on leavers from independent schools is limited.
- 6.28 There are no administrative linkages between individual level school databases and the higher education databases held by HESA and SFC.

7 STRENGTHS AND WEAKNESSES OF CURRENT APPROACHES

- 7.1 It is clear from the foregoing, that the selection of a measure – or set of measures – to assess participation in higher education is a complex task. A wide variety of measures have been developed, and each has its own strengths and weaknesses.
- 7.2 Moreover, as can be seen from the detailed descriptions of the approaches adopted in each of the 4 UK administrations, there are specific policy, administrative and contextual factors which affect the selection of measures.
- 7.3 The dimensions of quality defined for National Statistics (Relevance, Accuracy, Completeness, Timeliness, Clarity, Coherence, Comparability) provide a useful framework for commenting on the various types of measure but also raise further questions about the specific uses of individual measures (relevance can only be defined in relation to the purpose for which a measure has been developed) and also about the hierarchy amongst these various elements (for example, comparability may be thought by some stakeholders to be more important than timeliness; clarity may be thought by others to be more important than accuracy).
- 7.4 In addition, a key question relevant to the selection of (a) measure(s), is the amount of resource required to undertake any proposed development work, as well as the resource required to implement any new measures on an ongoing basis.
- 7.5 Stakeholders' views of the strengths and weaknesses of current approaches were addressed as part of the consultation exercise described in Sections 8 and 9. Our own views, of the strengths and weaknesses of the main types of measure described in Section 3 are summarised in Table 1 below.

Table 1 Strengths and Weaknesses of Methods of Measuring Overall Participation

Methods of Measuring Overall Participation	Strengths	Weaknesses
Gross Enrolment Rate	Simple measure to produce; easy for stakeholders to understand	Over simplistic – may be misinterpreted when used for making comparisons between countries; based on enrolment only which may be very different to 'real engagement' or completion
Age Specific Participation Rates	Reasonably straightforward to produce; fairly easy for stakeholders to understand; can usually be disaggregated by level of HE and mode of study	Influenced by many external factors which mean comparisons between countries can be misleading; based on enrolment only; sensitive to rapid changes in population size
Initial Entry Rates / API/ Net Entry Rates	Conceptual clarity – each individual counted only once; comparisons between countries are not confounded to such a degree by external factors	Difficult to define and exclude individuals with previous experience of HE; net entry rates are difficult for stakeholders to understand; labour intensive to produce given the requirement to screen out previous participants; changes over time are influenced by demographic and economic factors; based on entry only with no focus on 'real engagement' or completion
True Cohort Participation Rates	Not so susceptible to fluctuations in the population sizes of successive cohorts;	Fairly difficult for stakeholders to understand; there is a delay / time lag of at least a year before it can be calculated.

7.6 Stakeholders may also define the strengths and weaknesses of any specific measure of participation – based on their own interests and perspective – in relation to particular groups which are included or excluded from that measure; or in relation to the extent to which a measure may be disaggregated with respect to a particular variable. So, for example one stakeholder may be primarily interested in Scottish domiciled students who participate in HE at Scotland's Colleges, whilst another stakeholder may be primarily interested in the extent to which lower socio-economic groups are able to participate in HE via distance learning. These stakeholders may have different assessments of the strengths and weaknesses of any given measure.

- 7.7 Table 2 captures the main dimensions along which stakeholders are likely to vary in terms of their assessments, by presenting the key domains relevant to the assessment of participation.

Table 2 Domains relevant to the assessment of measures of participation

Type of Factor	Domain	Categories
Institutional	Level	Sub Degree / First Degree / Postgraduate Degree
	Mode	Full Time / Part Time / Distance Learning
	Type of Institution	HEI / College
Individual	Age	Specific years or age bands
	Gender	Male / Female
	Ethnicity	Census Groupings
	Previous Education	SCQF or QCA level attained
	Domicile	Scotland/UK/EU/non-EU
	Area Deprivation	SIMD levels
	Socio Economic Group	NS-SEC 1-7
	Local Area	Local Authority Areas; Wards; or other Small Area Statistics

8 THE STAKEHOLDER CONSULTATION

- 8.1 The stakeholder consultation comprised two elements. The first element was a telephone survey, supplemented by two group interviews. The second element was an online questionnaire survey. Further details of the coverage and methodological approach to the stakeholder consultation are given in Paragraphs 8.3-8.7 below.
- 8.2 Paragraphs 8.8-8.28 report the findings of the telephone survey, whilst Paragraphs 8.29-8.46 report the findings of the online survey. The overall findings of the stakeholder exercise, bringing together both elements of the consultation are set out in Paragraphs 8.47-8.48.

Methodological Approach and Survey Coverage

- 8.3 A list of stakeholders for telephone or group interview was developed by the commissioners. The list included academics working in the field, policy makers from both the HE and FE sectors, representatives of organisations with specific

policy, campaigning or lobbying interests in the area, and analysts (researchers, statisticians, economists), with relevant knowledge and expertise.

- 8.4 A total of 25 individuals and organisations were approached for a telephone interview. Of these 18 responded positively and were interviewed. In addition, two face-to-face group interviews (one with four participants and one with seven participants) were conducted. The list of respondents is given at Annex 1.
- 8.5 We developed a topic guide and a briefing note to support this element of the stakeholder consultation. These are attached as Annex 2 and Annex 3 respectively.
- 8.6 The levels of awareness, knowledge, and understanding of both the technical and policy issues varied enormously between the stakeholders who were interviewed. We consulted with individuals who are highly expert in the technical and research issues, with individuals who have a detailed grasp of the current and emerging policy context, and also with individuals whose organisations have a general interest in the topic. Thus there was a great deal of flexibility in how the interviews were conducted, and not all interviews covered all topics.
- 8.7 The online questionnaire survey seeking respondents views on the measurement of participation in higher education was issued to all those on the Scotstat circulation list who had registered an interest in either HE or FE. The number of individuals falling into these categories was 404. The link to the online survey was also sent to all those interviewed by telephone. The online consultation was open for 4 weeks.
- 8.8 A total of 33 responses to the online questionnaire were received. This included responses from 3 individuals who had been interviewed by telephone. Although the response rate to the online questionnaire was relatively low (8%), the number of responses compares favourably to other electronic consultation exercises run by the lifelong learning statistics branch.

Topics Covered in Telephone and Group Interviews

- 8.9 The interviews focused on stakeholders' reasons for being interested in participation in higher education; their awareness, understanding and usage of current measures of participation; their assessment of the 'fitness for purpose' of current measures; their views on the qualities of the ideal measure(s) of participation; any 'trade offs' that they would be prepared to make in relation to their ideal measures; and on any other relevant issues which stakeholders wished to raise.

Stakeholder Interests – Telephone and Group Interviews

- 8.10 The reasons for stakeholders' interests in the topic most often related to some aspect of the 'widening participation in higher education' agenda. Almost all stakeholders wished to understand better the extent to which participation in higher education had been extended to a broader range of social and demographic subgroups, and how this process could be further enhanced.
- 8.11 The social and demographic subgroups which interested the stakeholders have included age, gender, and race for many years. More recently there has been an increased focus on other wider issues of socio-economic background and (multiple) deprivation, parental educational achievement, parental income, disability, religion, faith, sexual orientation, mode of study (part time or full time), the vocational and non-vocational learners, and any other group of 'non traditional' learners.
- 8.12 As far as more specific interests are concerned, as expected these were many and varied including:
- the value of work based learning in prompting participation in post school education;
 - the funding associated with a part time rather than a full time place in higher education;
 - the impact of student fees on patterns of participation;
 - the evaluation of the 'Widening Access Premium';
 - the gender segregation by subject of study;
 - the issue of articulation, both between the FE and HE sectors in Scotland, and also for those entering Scottish HE from elsewhere;
 - the retention patterns of those from lower socio-economic groups;
 - the alignment between the needs of employers and the programmes of study offered by the HE sector; and
 - the re-entry of individuals back into HE after time spent elsewhere.

Understanding of Current Measures of Participation – Telephone and Group Interviews

- 8.13 Only a few of those interviewed (specifically those analysts working directly in the area) had a good understanding of current measures. Few stakeholders from the broader group had engaged specifically with any definitional or methodological questions around specific measures. Analysts from across the UK were well versed in the measures used within their own administration, but not necessarily knowledgeable about the specifics of measures used in the other administrations. Among the majority of stakeholders there was a lack of awareness or usage of the OECD measures of participation.
- 8.14 Nevertheless, a fairly upbeat assessment was given of the current situation. A number of interviewees commented specifically that they had the impression that the measures of participation had 'improved over time'. In particular:

- the SFC publication ‘Learning for All’ was thought to be a helpful contribution to the debate;
- one stakeholder commented specifically that HESA was working hard to improve their systems of data collection; and
- one stakeholder was disappointed that the Scottish Government’s ‘Lifelong Learning Statistics’ publication from 2005 had not been updated as it was very useful.

Views of Age Participation Index – Telephone and Group Interviews

- 8.15 As far as the Age Participation Index was concerned, there was considerable support for it to continue, at least in the medium term. This was mainly because the API is familiar, reasonably well understood, and allows trends to be reported. Stakeholders therefore supported the idea that if additional measures were to be introduced then this should not precipitate the sudden withdrawal of the API – rather any new measures should be developed in addition to the existing headline figures and should run in parallel with them.
- 8.16 However, notwithstanding this general support, the consensus was that the API did not provide a broad enough basis for measuring participation. The specific concerns echoed those expressed in the commissioning document – namely that the limitation to full-time participants aged 17-20 is overly restrictive given current patterns of participation. There was also widespread recognition that ‘participation’ as defined within the API (i.e. to mean initial entry into full-time HE) was very limited.
- 8.17 Moreover, for those who worked with the API, it was pointed out that it was not satisfactory that the two main producers / users of these measures (the Scottish Government and the Scottish Funding Council) used different definitions of the API which resulted in measures that differed by 3 to 4 percentage points.

Requirements of Overall (Headline) Measures – Telephone and Group Interviews

- 8.18 Stakeholders wished to have a headline figure which included mature learners, as well as learners who are studying part time. This was a very clear criticism from the University of the Highlands and Islands (where part time, mature study is the norm), from those whose interest was primarily focused on Scotland’s Colleges, and also from those who are concerned to ensure that funding allocations for part time learners are set in a way which reflects the reality of the support required for these kinds of students (rather than using a FTE measure).
- 8.19 A more general criticism of current measures was the lack of comparable measures across the UK. Stakeholders wished to have a headline measure which could be easily compared across the four countries.
- 8.20 Moreover, there was a general view that to expect one headline measure to adequately capture the complexity of participation was unrealistic. Stakeholders

were generally of the view that specific data needed to be assembled for specific purposes and to answer specific questions. Stakeholders were therefore very willing to consider a 'basket of measures'.

Specific Views of Existing Measures – Telephone and Group Interviews

8.21 A few stakeholders (principally those directly involved in producing or using measures of participation in HE) made specific comments about existing measures, and about how they could be augmented or improved. Specifically:

- Two stakeholders (one academic and one stakeholder who had been involved in developing the YPR) expressed clear preferences for 'true cohort' measures over 'synthetic cohort' measures. (The point was made that the YPR was the only 'good measure' of young people entering HE given the instability of population denominators.)
- A small number of stakeholders discussed the extent to which other survey data (the Labour Force Survey, the Family Resources Survey, the British Household Panel Survey), could be used to augment current measures of participation. (Whilst this is certainly possible, it is not straightforward, and sample sizes in Scotland tend to be too small for many purposes. It may however be worth investigating the potential of using the Annual Population Survey, where the Scottish LFS results have been heavily boosted through a Scottish Government funded increase to the sample-size.)
- One gap which was identified by a range of stakeholders was the absence of data on those who never entered into HE. Those involved in policy development were keen to understand the characteristics of those who never appear on the 'radar' of HE.

Ideal Measure of Participation – Telephone and Group Interviews

8.22 As far as the ideal measure of participation was concerned, much of the comment focused on the ability of a measure to be disaggregated by a range of factors. The factors by which stakeholders were seeking to breakdown any overall measure included:

- individual institutions;
- the HEI/College sectors (including further breakdowns in Scotland between the traditional and post 1992 sectors);
- subject areas and levels of study;
- socio-demographic indicators (income, ethnicity, parental education) and so on);
- mode of study; and
- geographic areas especially Local Authority based measures.

8.23 Moreover, the dominant flavour of stakeholder comments was the preference for measures which tracked individual students over time. In the longer term, stakeholders were very keen to see measures which followed individual students from school (where much of their potential had already been identified) through the stages of application to a HEI or College, acceptance, enrolment, participation, completion, and subsequent employment. The

progression of individuals through each of these stages was what was of most interest to stakeholders.

- 8.24 In addition to these measures of academic participation, two stakeholders specifically mentioned 'social engagement' as being an important aspect to the HE experience which should ideally be captured. By 'social engagement' stakeholders meant the extra curricula clubs and activities which were on offer to HE students,
- 8.25 When asked to comment on the qualities of a national statistic as set out by the National Statistics Authority, the factor that the majority of stakeholders judged most important was **comparability**. However, 'comparability' was not used to mean (as had been expected), comparability between administrations. Rather, stakeholders meant comparability across a range of factors including comparability between administrations, but also comparability between local authority areas, between institutional sectors, between demographic subgroups, and so on. The other factor mentioned frequently was the importance of any headline measure being easy to construct, **communicate** and interpret.
- 8.26 Stakeholders did recognise that constructing these measures was a complex and labour intensive exercise. They also recognised that there was a tension between developing measures which were easy to produce and explain, and those which were useful in analysing the complex and dynamic picture of HE. There was also a suggestion that work should be progressed in developing a generic methodology which could then be applied in a range of specific circumstances.
- 8.27 Stakeholders were asked if they had any other suggestions or improvements regarding the (collection of) measure(s) of participation. The suggestions raised at this stage which have not been covered elsewhere were:
- the development of a centrally designed and consistently applied 'exit interview' which would be completed every time a student left HE before completing the course for which they were enrolled. This would ascertain the reasons for non completion of a course;
 - the need for guidance on the definition and interpretation of participation measures;
 - the development of an independent central analytical unit to undertake policy development and evaluation work in the broad area;
 - better information on domicile (the home address / term time address question was raised);
 - the importance of full integration of information between HE and FE, especially given the likelihood of more interaction between the two sectors in the future.
- 8.28 In general, stakeholders believed that the use of SIMD in the analysis of participation was useful. However, one stakeholder commented that socio – economic group was hard to measure reliably, and that a recent publication had caused confusion by 'flipping' some of the SEG groups; another stakeholder commented that the SIMD was not very reliable at the local scale.

Online Questionnaire Survey

- 8.29 The online questionnaire survey was in two sections. The first section asked about the respondent's interest in the topic and their views on the types and qualities of an ideal measurement of participation. There were two open questions in the first section – one which asked about the respondent's interest in the topic, and the other which asked for any comments or suggestions about how measures of participation could be developed or improved. The second section was more detailed and was aimed at those respondents who were aware of – and / or had used – specific measures.
- 8.30 A total of 33 responses were received. Most of the respondents answered all the questions in the first section of the questionnaire, whilst around half of the respondents went on to answer the questions in the second section. Annex 4 provides the summary counts. (Note that given the small numbers participating, and the fact that this is not a scientifically selected sample, only counts – rather than percentages – are reported.)
- 8.31 A wide range of individuals participated in the consultation; the largest groups were those based in an academic institution (11), or those based in central (6) or local (3) government.

Stakeholder Interests – Online Survey

- 8.32 Some stakeholder interests in the measurement of participation in Scottish Higher Education were highly specific, for example:
- the extent to which the demographic profile of entrants to medical school reflected the general population profile;
 - the numbers of students studying environmental topics;
 - the Scottish participation rates compared to the rates from a different UK administration.
- 8.33 By contrast, some stakeholder interests were fairly general, for example:
- campaigning and lobbying on behalf of students;
 - using the information for community planning;
 - using the information as part of the context for wider educational research and policy development.
- 8.34 A few key points emerged from the first section of the questionnaire covering respondents reasons for interests in this topic area (to which most of the 33 respondents provided answers).

- 8.35 First, the vast majority of respondent interests relate to policies aimed at widening participation to non-traditional learners. Specific aspects include:
- the evaluation of the Widening Access Premium;
 - the articulation routes for proceeding from Further Education to Higher Education;
 - the experience that non-traditional learners have of HE;
 - the massification of HE;
 - the targeting of financial assistance to students; and
 - the analysis of institutional disparities.
- 8.36 Second, while most respondents are reasonably satisfied with the current provision of measurements relating to participation, there is a widely shared view that more – and more detailed information and breakdowns – would be helpful. The breakdowns that respondents would like to see cover all the factors discussed earlier including:
- institutional type;
 - geography;
 - student characteristics;
 - type of participation (entry, engagement, completion);
 - domicile, and
 - mode.
- 8.37 This variety of detailed interests confirms that one headline measure of participation will not meet the needs of users; rather a wider range of measures each aimed at answering a specific question is preferred.
- 8.38 Third, only a small number of respondents (5) are interested in the Scottish figures only. All other respondents were interested in making comparisons either to other countries within the UK, or further afield.
- 8.39 Fourth respondents think that all the criteria described by the National Statistics Authority as dimensions of quality are important, and only one or two respondents say that any specific criterion is 'not very important'. However, if asked to choose, the measures which are seen as the most important are comparability and accuracy (rated by 21 and 20 respondents respectively as 'very important'). At the other end of the spectrum, timeliness and coherence are rated as 'very important' by only 10 and 9 respondents respectively.

Suggestions for Improvements to Current Measures – Online Survey

- 8.40 Ten respondents suggested a variety of improvements to current measures. Three respondents suggested taking a longitudinal approach to measurement in order for life course / life histories to be examined; this would follow individuals all the way from nursery, through school, to further and higher education.

8.41 The following five issues were mentioned by two of the ten respondents who made suggestions for improvement¹⁶ :

- collecting information on the characteristics of those who don't participate;
- collecting more information on the barriers / multiple deprivation of participants and non-participants;
- auditing university admissions;
- collecting data to allow an analysis of social mobility; and
- obtaining regular data on the graduate premium.

8.42 Other improvements suggested (by one respondent each) were:

- never aggregating part-time and full-time students;
- ensuring that counts were genuine headcounts;
- distinguishing students who work full time or part time from those who do not;
- conducting 'exit interviews' on a systematic basis for those who drop out;
- collecting detailed information on difficulties in relation to articulation between FE and HE; and
- funding an independent central analytical unit to conduct research and evaluation on participation.

8.43 The second part of the questionnaire was designed for those who are aware of – and / or use - the existing measures. A total of 16 respondents completed at least some of the questions in this section.

8.44 Almost all those who answered the second part of the questionnaire were aware of more than one participation measure. Gross enrolment rates, followed by standardised participation ratios and the Scottish API were the most well known. Only a minority of users were aware of the HEIPR, or the YPR.

8.45 Respondents tended to use more than one measure of participation; gross enrolment rates, initial entry rates and the API were used by 5 or more respondents. Five or more respondents used the measures for monitoring targets, statistical analysis, policy development, briefing, and general interest. Just one respondent used the measures for funding allocations.

8.46 Most respondents find current measures either 'very useful' (3) or 'quite useful' (11) for their purposes. Two respondents said that current measures are 'not very useful'. There was no clear pattern of responses in the extent to which the measures met or did not meet the national statistics quality criteria. The measures which the respondent used were judged in the main to be clear (9 out of 13 respondents). Six out of 13 respondents thought that the measures they used were weak in terms of the timeliness with which they were produced.

¹⁶ The two respondents mentioning each of the listed issues were different for each issue.

Overall Findings – Telephone / Group Interviews and Online Survey

- 8.47 The two components of the stakeholder consultation exercise were conducted using different methods, and varied in their coverage. Specifically, the stakeholder interviews were designed to be flexible, and to cover specific topics in more detail depending on individual interests whilst the online survey was designed to collect ‘headline’ information on a consistent basis.
- 8.48 However, despite these differences, the findings from these two consultation approaches reinforced each other. There were a number of key areas of common agreement emerging from the two aspects of the consultation as follows:
- Respondents are most interested in the topic of participation in HE from the perspective of the agenda around ‘widening participation’; the subgroups of interest to respondents have expanded in recent years to cover many socio-economic subgroups, as well as a wider range of institutional and mode of study factors;
 - Respondents are reasonably satisfied with current approaches to measurement and reporting; indeed they believe that improvements to reporting have been made in recent years;
 - Respondents are comfortable with moving away from a ‘single headline indicator’ of participation towards a ‘basket of measures’;
 - Respondents are comfortable with the API as a headline measure. However, they recognise that it is deficient in terms of its coverage of mature and part time learners; they also recognise that it is deficient in addressing questions about routes into and out of HE;
 - Respondents believe that specific policy questions must be answered by reference to specific data sources assembled for that question; given the wide range of policy questions which have arisen in the past – and which will continue to arise in the future – it is important that data which are ‘fit for purpose’ are continually developed;
 - Stakeholders would like to see more detailed information produced which allows reporting by the range of factors they have identified including socio-economic, demographic, geographic, institutional, and mode of study factors;
 - Stakeholders are most interested in developments that will enable them to track the course of individual learners into and out of education across their lifecourse.

9 CONCLUSIONS

- 9.1 The review of approaches to measuring HE participation revealed that there was no common methodology across the four UK administrations. However stakeholders in all administrations expressed a wish for greater comparability both in headline measures and in general methodology.
- 9.2 While the API continues to be used and valued in both Scotland and Northern Ireland, it is no longer produced in England. The only headline measures in Wales are based on gross enrolment rates.

- 9.3 The API equivalent was abandoned in England because of its deficiencies both methodologically and in terms of its coverage. The HEIPR is now used as the headline measure in England and covers a broader age range, but is still not completely satisfactory as it is based on a synthetic cohort.
- 9.4 There have been useful methodological developments by statisticians at HEFCE resulting in the development of the YPR, which has been used to gain understanding of both geographical and socio-economic disparities in access.
- 9.5 The review of the international literature emphasised the sensitivity of comparisons to the measures chosen and revealed a very wide range of methodologies in OECD countries.
- 9.6 The widening access agenda is of interest to all four UK administrations, but the measures used to monitor improvements in widening access are variable. While Scotland has concentrated on the SIMD, the other administrations have taken more interest in measures based on NS-SEC.
- 9.7 There is considerable difficulty in producing a satisfactory measure of the rates of participation for part-time and mature students.
- 9.8 The consultations with the wider group of stakeholders confirmed that interest in measures of participation were often related to understanding and developing policies aimed at widening access.
- 9.9 The stakeholder consultation confirmed that no single 'headline' measure of participation can address the complex questions that policy makers, managers, and academics are seeking to answer. Whilst the Scottish API is familiar to those working in the field, and whilst many would not wish to see it discontinued (since it provides information about trends) there is a shared view that it does not provide a broad enough assessment of the participation of 'non-traditional' groups (especially mature learners, and those studying on a part-time basis).
- 9.10 There was broad agreement that information is required to cover more than one type of 'participation'. Stakeholders are concerned equally with enrolment, initial entry, articulation, subsequent entry, and completion. At a broader level, stakeholders believe that 'participation in Higher Education' is a rather limited basis on which to analyse the life course trajectory through the educational system and into employment.
- 9.11 Stakeholders identified a wide range of factors by which they wished any measure of participation to be reported. These covered individual student characteristics (including age, gender, race, parental income, previous educational attainment, disability, other indicators of multiple deprivation, origin, domicile), institutional factors (type of HEI / College), and mode of study.
- 9.12 The importance of participation measures which are comparable across the UK and further afield was emphasised by stakeholders from all sectors.

- 9.13 A fairly positive view emerged of the efforts which have been made in recent years to improve the measurement of participation. In general, stakeholders were of the opinion that the standard of analysis, publication, and dissemination of the current information had improved. However, there were still many questions that were left unanswered.
- 9.14 Stakeholders are most interested in developing new information sources which will allow a life course approach to be adopted. There is a strong preference for a longitudinal approach which would allow the tracking of students through from their earliest years and educational experiences, into Higher Education and then into employment.

10 OPTIONS FOR DEVELOPMENT

- 10.1 There is no clamour for any immediate changes to the current provision of measures. However, there are a number of improvements that could be enacted in the short to medium term. Suggestions are also made for longer term, developmental work.

Short Term Options

- 10.2 The API should continue to be produced, but the two formulae used by the Lifelong Learning Statistics Branch and the Scottish Funding Council should be harmonised. This would have the benefit of bringing together the two main producers to agree how to harmonise their approaches on a broader basis.
- 10.3 A user friendly guide to the rationale for, and interpretation of, current measures should be produced. This would assist stakeholders in making best use of available material.
- 10.4 An Age Participation Index, calculated specifically for the most deprived section of the population, would be useful for monitoring widening access.

Medium Term Options

- 10.5 A YPR for Scotland could be produced and published. This is a reliable measure for assessing the proportions of young people entering HE which is 'proofed' against abrupt changes in the population denominators. This would improve comparability across the UK.
- 10.6 For the understanding of mature and part-time participation, net entry rates into tertiary A and tertiary B higher education specific for mode and single year (or quite narrow age groups beyond age 21) should be calculated. Summing these over age groups would facilitate comparisons with the English HEIPR and the OECD net entry rates.
- 10.7 The publication of the API should be discontinued (within the next 3-5 years).

Longer Term Options

- 10.8 Development work could be undertaken on the possibility of taking a life course approach to measuring, analysing and interpreting participation in Higher Education. This would require tracking individuals both before they enter HE and after they leave it. Whilst the School Leavers Destination Survey provides some of this information, there is much more which could be done. The longitudinal data linkage of the English Pupil Level Annual School Census (PLASC) may provide a useful model. It would be important to estimate the cost and expected accuracy of attempting this via data linkage or extended surveys. A rotating longitudinal sample survey might be a useful way of tracking transitions between individual stages of educational progression, but might not provide data for longer term life course transitions.
- 10.9 Anonymised data linkages between school records, university and college application records and individual student records within HEIs and Colleges are clearly an ideal. Considerations of data privacy and other bureaucratic obstacles mean that the ideal may not be practicable even in the long term. However the possibility of establishing intermediate linkages in the chain, e.g. between UCAS applications and HESA records, should continue to be explored.
- 10.10 It will also be important to assess whether data in Scotland which is collected by different organisations for HE delivered in HEIs and Colleges can be integrated.

GLOSSARY

API	Age Participation Index
BIS	Department for Business Innovation and Skills
DCSF	Department for Children, Schools and Families
DELNI	Department for Employment and Learning Northern Ireland
EAG	Education at a Glance
FEC	Further Education College
FES	Further Education Statistics (SFC data collection system for FE in Scotland)
FSM	Free School Meals
FTE	Full-time Equivalent
FYPSEC	Full-time Young Participation by Socio-Economic Class
HEFCE	Higher Education Funding Council for England
HEFCW	Higher Education Funding Council for Wales
HEI	Higher Education Institution
HEIPR	Higher Education Initial Participation Rate
HESA	Higher Education Statistics Agency
IER	Initial Entry Rate
ILR	Individualised learner record (LSC data collection system for FE in England)
ISCED	International Standard Classification of Education
LLWR	Lifelong Learning Wales Record (data collection system for FE in Wales)
LSC	Learning and Skills Council
NQF	National Qualifications Framework
NS-SEC	National Statistics Socio-Economic Class
NVQ	National Vocational Qualifications
OECD	Organisation for Economic Cooperation and Development
PI	Performance Indicator
POLAR	Participation of Local Areas
QCA	Qualifications and Curriculum Authority
SFC	Scottish Funding Council
SCQF	Scottish Credit and Qualifications Framework
SPR	Standardised Participation Ratio
UCAS	Universities and Colleges Admissions Service
UNESCO	United Nations Educational Social and Cultural Organisation
WAG	Welsh Assembly Government
YPR	Young Participation Rate

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ANNEX 1 – List of Stakeholders Interviewed

Name	Organisation	Telephone or Group Interview
Dr Simin Abrahams	Universities Scotland	Telephone
Jessica Ashton	Dept of Business, Innovation and Skills, England	Telephone
Dr Tony Axon	University and College Union	Telephone
Dr Janet Brown	Scottish Qualifications Authority	Telephone
Liam Burns	National Union of Students	Telephone
Dr Mark Corver	HEFCE	Telephone
Fazila Esat-Dawson	The Equalities and Human Rights Commission (Scotland)	Telephone
Professor Jim Gallagher	Scottish Funding Council	Telephone
Ray Harris	Scotland's Colleges	Telephone
Jacqui Hepburn	Sector Skills Council	Telephone
Nia Jones	Welsh Assembly Government	Telephone
Laura Lews	The Coalition of Higher Education Students in Scotland	Telephone
Professor Kay Livingston	Learning and Teaching Scotland	Telephone
Allan Nesbitt	Department for Employment & Learning, Northern Ireland Government	Telephone
Antonia Palmer	Edinburgh College of Art	Telephone
Professor David Raffe	Centre for Educational Sociology	Telephone
Martin Wright	University of Highlands and Islands	Telephone
Gill Wyness	Institute for Fiscal Studies	Telephone
Jonathan Gray	Scottish Funding Council, Strategic Development	Group
Martin Kirkwood	Scottish Funding Council, Property and Capital Funding	Group
Jennifer McGregor	Scottish Funding Council, Funding	Group
Helen Storkey	Scottish Funding Council, Statistics	Group
Martin Boyle	Scottish Government, Policy Officer	Group
Carolyn Fishman	Scottish Government, Policy Officer	Group
Jeanette Hagerstrom	Scottish Government, Researcher	Group
Kathleen Robertson	Scottish Government, Policy Officer	Group
David Smith	Scottish Government, Statistician	Group
Neil Swanston	Scottish Government, Economist	Group
Andrew Walker	Scottish Government, Statistician	Group

ANNEX 2 – Topic Guide for Interviews

The interviewer will give a brief introduction describing the nature of the work being undertaken, and the process for reporting on the consultation exercise. The interviewer will make clear that stakeholders are not necessarily expected to comment in detail on all sections of the interview.

Section	Questions (Prompts)
1 – Reasons for Interest	Why is the stakeholder interested in this topic? What specific questions does the stakeholder wish to answer? Which of these questions are relevant to the measurement of participation in higher education?
2 – Awareness, Understanding and Usage of Current Measures	Which measures do you know about or use? What do you use the measures for? What current policy questions require the measurement of participation in higher education? What policy questions requiring this kind of information might arise in the future?
3 – Assessment of Current Measures	How useful are the current measures for the purposes of the stakeholder? What do you see as the strengths and weaknesses of the current measures?
4 - Qualities of the Ideal Measure(s)	Are you interested simply in a 'broad brush' overview measure of participation or are there more detailed breakdowns which you would wish to have available? For example, would the ideal measure: <ul style="list-style-type: none"> - focus on enrolment, or initial entry, or completion or what? - cover higher education delivered in Higher Education Institutions or Further Education Colleges or both? - focus on participation in postgraduate programmes, in first degrees, in sub-degrees or what? - be disaggregated by age? If so, which age groups are you most interested in? - focus on Scottish, UK or internationally domiciled students? - be able to be disaggregated by mode (full time / part time) of study? - be able to be disaggregated to local areas? - be comparable across the UK or further afield How important is it that a measure is produced to a tight timetable? How much value do you place on ensuring that a measure is easy to calculate and communicate?
5 - Priorities for the Development of New and / or Existing Indicators	Which features discussed above are most important from your perspective, and which would you be willing to compromise on?
6 – Any Other Relevant Questions or Issues?	

ANNEX 3 – BRIEFING NOTE FOR STAKEHOLDER INTERVIEWS

INTRODUCTION

In December 2009 the Scottish Government commissioned research to examine current approaches to the measurement of participation in Higher Education (HE) and to advise on options for further development. The research was to be conducted in two stages. The first stage of the work, completed in January 2010, comprised a literature review together with an assessment of current practice within the UK. The second stage of the work is a consultation with a broad range of stakeholders, to elicit views on both current approaches and possible future approaches.

This briefing note has been produced to assist stakeholders to engage with the consultation exercise. It introduces some of the ideas, 'sets the scene' for the consultation exercise to follow, and prompts stakeholders to consider which aspects of the measurement of HE participation are most important to them.

If further clarification is required about any aspects of the research or the key concepts discussed below, stakeholders are invited to contact the Scottish Government at fhestatistics@scotland.gsi.gov.uk or by calling on 0300 244 6774.

BRIEFING NOTES FOR THE STAKEHOLDER CONSULTATION

The underlying issues and concepts are set out below – in non technical form - under the headings: definitional and methodological issues; methods of measurement of participation; strengths and weaknesses of current approaches; measures of widening participation.

Definitional and Methodological Issues

The term '*participation*' is used in different ways within the literature. It can mean '*total enrolment*' (with each student being counted in the participation measure for every year they are enrolled in HE) or '*initial entry*' (with each student being counted in the participation measure only for the year in which they first enrol). Note that neither of these measures of participation makes any reference to achievement or qualification at HE level (i.e. they do not measure '*successful participation*'). The definition of a *new entrant* also raises questions about how to deal with cases where an individual has previously entered a HE course, but did not complete the course.

The course aim of students entering *Higher Education* can be classified as postgraduate, first degree and other undergraduate (covering foundation degrees, HND, HNC, Dip. HE, Cert. HE and other qualifications). HE courses may be delivered either in Higher Education Institutions or in Further Education Colleges.

The term '*domicile*' is defined by a student's permanent or home address prior to entry to HE. Scottish participation statistics may relate to all students of Scottish domicile (some of whom study outwith Scotland) or all students studying in Scotland (including students of non-Scottish domicile).

Participation measures may relate to full-time or part-time students or both (often called '*mode of learning*'). Where full-time and part-time enrolments are both

included in the participation rate the concept of full-time equivalent (FTE) may be used as an alternative to the total headcount.

Finally, for most policy purposes *disaggregation* by age and gender is vital.

Disaggregation by other individual factors such as socio-economic group, disability and ethnicity is also important. There may be other subgroups of particular interest to stakeholders.

Methods of Measurement of Participation

Information on the **numbers** of students participating in HE may be published in classifications by level of study, mode of learning, domicile, age, gender etc.

However for many purposes it is more meaningful to measure participation **rates**, that is the number of HE participants as a proportion of the relevant population.

There are various ways of defining participation rates, each of which has strengths and weaknesses.

The *gross enrolment rate* is the crudest possible measure of participation and is calculated as the ratio of total student enrolment to total population.

Age specific participation rates are much more commonly used. For example, the ratio of total students aged 18-21 to total population aged 18-21. These rates are influenced by many factors including: the changing propensity to enter HE (influenced by economic factors and the supply of places), the average length of course, drop-out rates and the changing age structures in the population. Age specific participation rates are frequently disaggregated by level and mode. For example the percentage of 18-21 year olds studying full-time on first degree programmes is a much more focused rate than simply the percent of 18-21 year olds participating in HE.

Instead of focusing on the total number of students (of given ages) enrolled in HE programmes a clearer interpretation may often be based on the number of students entering HE in a given year. This concept is clearest if entrants are only counted when they are new entrants to the particular level of HE under consideration.

Dividing the number of new entrants in a given age range by the population in that age range gives an *initial entry rate* (also called a *net entry rate*). Another type of *initial entry rate* is the *Age Participation Index (API)* currently published by the Scottish Government. This divides the number of under 21 Scottish domiciled new entrants into full-time HE by the population aged 17. If there were no changes in probability from year to year this rate would then represent the probability that a Scottish domiciled person aged 17 would enter into full-time HE for the first time by the age of 21.

When entry rates for each age group in the same calendar year are summed this is a *net entry rate* for a 'synthetic cohort'. A 'true cohort' net entry rate is defined as – for example – the sum of the entrants aged 18 in year (y) plus the entrants aged 19 in year (y+1), divided by the estimated size of this school year cohort in year (y-3) when they were aged 15. *True cohort rates* have the advantage that they are not so susceptible to fluctuations in the population sizes of successive cohorts resulting from changes in the birth rate 15-19 years earlier. Changes in *true cohort participation rates* are also probably less affected by short-term changes due to

economic factors such as changes in fees or unemployment. However, a *true cohort rate* will require a longer time period to elapse before it can be calculated.

Strengths and Weaknesses of Current Approaches

The strengths and weaknesses of the approaches described above will vary depending on the stakeholder's particular perspective and on the questions which the stakeholder is seeking to answer. The dimensions of quality defined for National Statistics by the National Statistics Authority are relevant in this regard. These dimensions are: relevance, accuracy, completeness, timeliness, clarity, coherence, and comparability.

Gross enrolment rates have the advantage that they are simple to produce and understand; however they are open to misinterpretation when used for comparison purposes and do not measure 'real engagement' or 'completion' of HE.

Age Specific Participation Rates are reasonably straightforward to produce and understand and can usually be disaggregated by level of HE and mode of study; however they are influenced by many external factors which means that comparisons based on them may be misleading, they are based on enrolment only, and they can be sensitive to rapid changes in population size.

Initial Entry rates / API / Net Entry Rates are conceptually clear as each individual is counted only once, and are potentially more robust in comparing across countries; however they may be labour intensive to produce, they are fairly difficult to understand, they are based on entry only, and changes over time may be influenced by demographic and economic factors.

True Cohort Participation Rates are not so susceptible to fluctuations in population changes; however they may be difficult to understand and there can be a longer time lag before they can be produced.

Measures of Widening Participation

A wide range of statistical indicators have been produced in the UK to allow commentary on the extent to which participation in HE has (or has not) extended into groups which have not traditionally participated. In Scotland, interest has focused on the proportions of students coming from deprived areas (as measured by the Scottish Index of Multiple Deprivation). Other potential indicators used elsewhere are based on socio-economic group, receipt of free school meals, and level of prior educational attainment.

ANNEX 4 – Summary Counts from Electronic Questionnaire

Q1 requested the contact information (Name, Organisation, Role Within Organisation, Email Address and Telephone) for the individual. This was answered by 30 (out of 33) respondents.

Q2

Which of the following best describes the organisation you work for?	
Answer Options	Response Count
Central government	6
Local government	3
Parliament	0
Other public body	3
Academic institution	11
Voluntary organisation	2
Private organisation	1
Private Individual	0
Other (please specify)	6
<i>answered question</i>	26
<i>skipped question</i>	7

Q3 asked individuals to provide a brief outline of their interest in the topic of participation in Scottish Higher Education

Q4

Are you interested in a 'broad brush' overview measure of participation (e.g. a measure including all students) or are there more detailed breakdowns which you would like to have available?	
Answer Options	Response Count
Broad Brush Measure Only	3
More Detailed Breakdown	27
<i>answered question</i>	30
<i>skipped question</i>	3

Q5

In your opinion, what would an ideal measure focus on?	
Answer Options	Response Count
Total numbers in Higher Education	9
First time entrants into Higher Education	8
Numbers successfully completing courses	11
Other (please specify)	10
<i>answered question</i>	28
<i>skipped question</i>	5

Q6

Would you prefer participation in Higher Education at Higher Education Institutions (e.g. Universities) and Scottish Colleges to be reported together or separately?	
Answer Options	Response Count
Report HEIs and Colleges Together	2
Report HEIs and Colleges Separately	22
Don't mind	5
<i>answered question</i>	29
<i>skipped question</i>	4

Q7

Which student characteristics would you like measures of participation to be able to report on? Please tick all that apply.	
Answer Options	Response Count
Gender	29
Age	29
Ethnicity	23
Mode of Study (Part time/full time)	26
Disability	20
Level of Deprivation (SIMD)	22
Socio-economic group	22
Prior educational attainment	24
Level of Study (undergrad/postgrad)	25
Other (please specify)	7
<i>answered question</i>	30
<i>skipped question</i>	3

Q8

Which groups of people participating in Higher Education are you interested in? Please tick all that apply.	
Answer Options	Response Count
All students in Scotland whose pre-study location was in Scotland	14
All students in the UK whose pre-study location was in Scotland	17
All students in Scotland whose pre-study location was in the UK	11
All students in Scotland whose pre-study location was in the European Union	8
All students in Scotland whose pre-study location was outwith the European Union	8
All students in Scotland, regardless of their pre-study location	17
Other (please specify)	2
<i>answered question</i>	29
<i>skipped question</i>	4

Q9

Which Modes of study are you interested in? Please tick all that apply.	
Answer Options	Response Count
Full-time	8
Part-time	6
Distance Learning	5
All Modes	27
Other (please specify)	2
<i>answered question</i>	30
<i>skipped question</i>	3

Q10

How important is it to you that measures of participation can be disaggregated to local areas (e.g. below the Scotland level)?	
Answer Options	Response Count
Very Important	15
Quite Important	13
Not Very Important	1
Not Important	1
<i>answered question</i>	30
<i>skipped question</i>	3

Q11

What local areas are you interested in? Please tick all that apply	
Answer Options	Response Count
Local authority	26
Scottish parliamentary constituency	4
Scottish parliamentary region	5
Westminster parliamentary constituency	2
Deprived/non deprived areas	21
Urban/rural classification	11
Neighbourhood Level	8
Other (please specify)	3
<i>answered question</i>	29
<i>skipped question</i>	4

Q12

Are you interested in comparisons between Scottish, UK or other participation measures? Please tick all that apply	
Answer Options	Response Count
I am interested in Scottish figures only	5
I would like comparisons to the UK as a whole (including Scotland)	16
I would like comparisons to the rest of the UK (excluding Scotland)	11
I would like comparisons to individual countries within the UK	18
I would like comparisons with countries outwith UK	12
Other (please specify)	3
<i>answered question</i>	29
<i>skipped question</i>	4

Q13

In your opinion, when assessing participation in Higher Education, what would be the most important characteristics of your ideal measure of participation? Please rate each characteristic in terms of level of importance to you.					
Answer Options	Very Important	Quite Important	Not Very Important	Not Important	Response Count
Relevance	17	12	0	0	29
Accuracy	20	9	0	0	29
Timeliness and Punctuality	9	19	1	0	29
Clarity	15	13	1	0	29
Comparability	21	9	0	0	30
Coherence	10	14	5	0	29
Completeness	17	11	1	0	29
<i>answered question</i>					30
<i>skipped question</i>					3

Q14

This was the final question in the first section and asked for any other comments or suggestions that the respondent would like to make about measurements of participation. Ten stakeholders provided a response to this question.

Q15

Are you aware of any of the measures of participation in Higher Education listed below? Please tick all that apply.	
Answer Options	Response Count
Gross enrolment rates	13
Initial Entry Rates	9
Standardised Participation ratios	10
Age Specific Participation rates	9
Age Participation Index (API - Scotland)	10
Cohort Participation rates	7
Higher Education Initial Entry Rate (HEIPR - England)	5
Young Participation Rates (YPR - HEFCE)	5
Other (please specify)	2
<i>answered question</i>	15
<i>skipped question</i>	18

Q16

Do you use any of the measures of participation in Higher Education listed below? Please tick all that apply.	
Answer Options	Response Count
Gross enrolment rates	12
Initial Entry Rates	8
Standardised Participation ratios	3
Age Specific Participation rates	3
Age Participation Index (API - Scotland)	5
Cohort Participation rates	1
Higher Education Initial Entry Rate (HEIPR - England)	4
Young Participation Rates (YPR - HEFCE)	4
<i>answered question</i>	14
<i>skipped question</i>	19

Q17

Which measure do you use the most?	
Answer Options	Response Count
Gross enrolment rates	6
Initial Entry Rates	2
Standardised Participation ratios	0
Age Specific Participation rates	0
Age Participation Index (API - Scotland)	3
Cohort Participation rates	0
Higher Education Initial Entry Rate (HEIPR - England)	1
Young Participation Rates (YPR - HEFCE)	1
<i>answered question</i>	13
<i>skipped question</i>	20

Q18

What do you use the measures for? Please tick all that apply	
Answer Options	Response Count
Monitoring targets	9
Statistical analysis	9
Allocation of funding	1
Policy development	8
Briefing	9
Academic research	3
General interest	5
Other (please specify)	5
<i>answered question</i>	16
<i>skipped question</i>	17

Q19

How useful are the current measures for your purposes?	
Answer Options	Response Count
Very Useful	3
Fairly Useful	11
Not Very Useful	2
Not Useful	0
<i>answered question</i>	16
<i>skipped question</i>	17

Q20

Thinking only of the measurement that you use the most (see question 3 above), what do you think are the main strengths of that measurement? Please choose from the list of characteristics below those which best reflect the strengths of the measurement you use the most. Please tick all that apply.		
Answer Options	Strengths of Measurement Used the Most	Response Count
Relevance	4	4
Accuracy	6	6
Timeliness and Punctuality	2	2
Clarity	9	9
Comparability	7	7
Coherence	0	0
Completeness	2	2
Other (please specify)		2
<i>answered question</i>		13
<i>skipped question</i>		20

Q21

Thinking only of the measurement that you use the most (see question 3 above), what do you think are the main weaknesses of that measurement? Please choose from the list of characteristics below those which best reflect the weaknesses of the measurement you use the most. Please tick all that apply.

Answer Options	Weaknesses of Measurement Used the Most	Response Count
Relevance	4	4
Accuracy	2	2
Timeliness and Punctuality	6	6
Clarity	2	2
Comparability	4	4
Coherence	3	3
Completeness	2	2
Other (please specify)		2
<i>answered question</i>		13
<i>skipped question</i>		20

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