UKGAP Theme 5: Inspiring people to value and care for our Geodiversity

UKGAP Indicator 13: Recognition within formal education - the total number of exam students sitting Geology GCSE (or Geology Intermediate in Scotland)

Relevance

Gathering the numbers of Geology examination entries provides an understanding of the recognition of the relevance of geodiversity within the formal education system. It may also provide an indication of the availability of geology teachers or others enthusiastic about geology, and the level of support for the subject from Government and those in management positions.

Data Sources

We are grateful to Chris King and Ben Jones who directly supplied the numbers of Geology examination entries each year from 1988 to 2010, as they had already gathered these data for their article (currently in draft form): 'A good news story – the recent rise of Geology exam entries' for publication in *Teaching Earth Sciences*. The original sources for these data are:

- The Joint Council for Qualifications (JCQ) Inter-Awarding Body Statistics which are published annually and include the number of Geology GCSE entries for England, Wales and Northern Ireland; and,
- The Scottish Qualifications Authority (SQA) Annual Statistical Report tables which include the number of Geology Intermediate 1 and Geology Intermediate 2 entries for Scotland.

Population data are obtained from:

- The Population Estimates Unit, Centre of Demography at the Office of National Statistics (ONS).

Background to the Data

It was considered that it would be of most relevance to show the extent to which Geology is considered within compulsory education. Therefore the final examinations taken by students aged 16 before they can choose to leave school were selected as the source data. The relevant examinations are the General Certificate of Secondary Education (GCSE) in England, Wales and Northern Ireland and Intermediate in Scotland. Both of these examinations are accredited to the relevant country qualifications framework, and Scottish Intermediate 2 is considered to be comparable to GCSE grades A* to C, with Scottish Intermediate 1 equivalent to GCSE grades D to F, allowing the two datasets to be aggregated where appropriate.

In the past, there were two or three Geology GCSE specifications for students to choose from. There is now just one new GCSE Geology specification available from WJEC (formerly the Welsh Joint Education Committee). However, King and Jones (unpublished) state that this new specification: '*seems to be creating increased interest amongst both teachers and students*'.

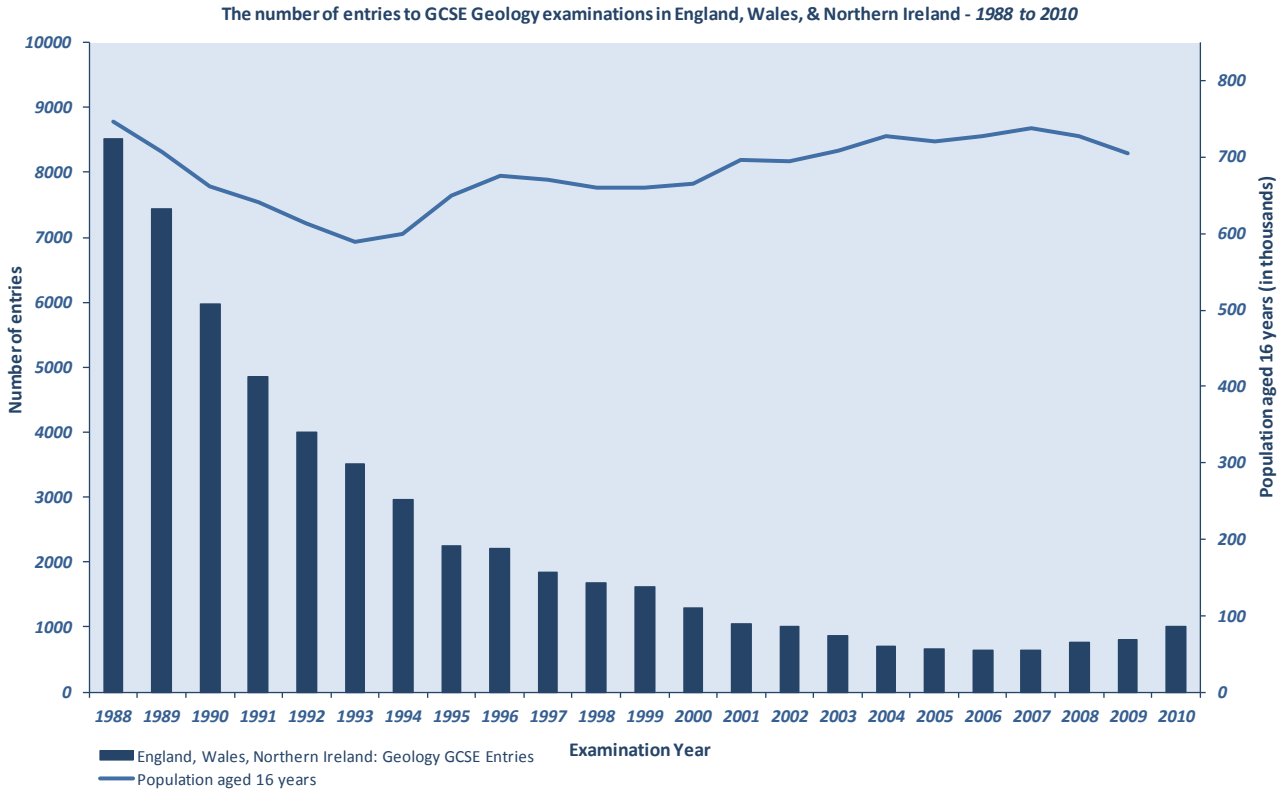
Data

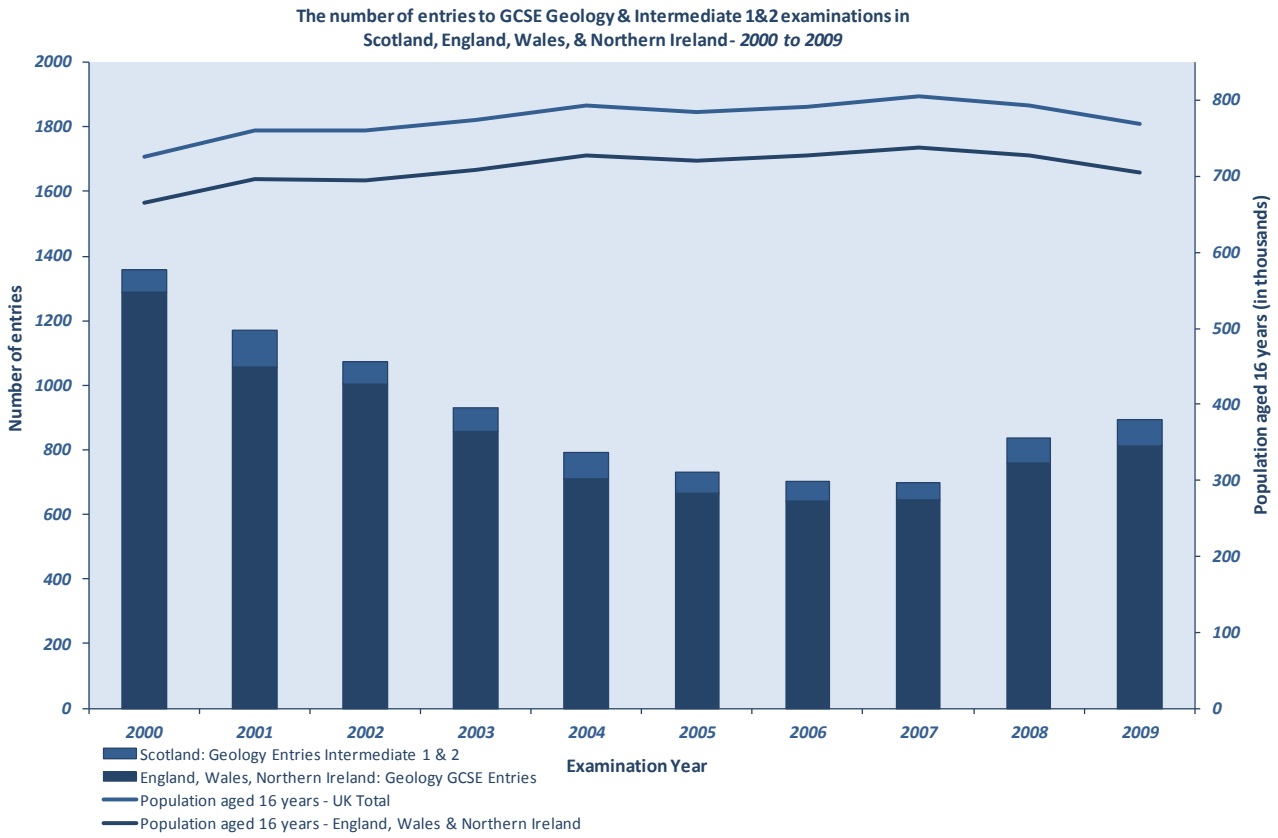
Table 13a below shows the number of GCSE and Intermediate Geology examination entries and the population aged 16 years.

The first chart shows all GCSE Geology examination entries from 1988 (the first year GCSEs were undertaken) to 2010 inclusive. The second chart shows the same data for the period 2000 to 2009 inclusive, which is the period for which comparable Scottish data are available.

Table 13a: Number of GCSE and Intermediate Geology Examination Entries

	England, Wales, Northern Ireland			Scotland		
Year	Geology GCSE Entries	Population - Number of 16 Year Olds	% Geology GCSE / Population	Geology Intermediate 1 & 2 Entries	Population - Number of 16 Year Olds	% Geology GCSE / Population
1988	8509	746898	1.1392%	Data not applicable - Geology Intermediate Qualification not in use		
1989	7448	705992	1.0550%			
1990	5972	661172	0.9032%			
1991	4846	641339	0.7556%			
1992	4006	613355	0.6531%			
1993	3517	588829	0.5973%			
1994	2970	598871	0.4959%			
1995	2251	649364	0.3466%			
1996	2220	674789	0.3290%			
1997	1834	670763	0.2734%			
1998	1689	659971	0.2559%			
1999	1623	660424	0.2458%			
2000	1287	664638	0.1936%	69	61839	0.1116%
2001	1058	695761	0.1521%	112	65393	0.1713%
2002	1004	695005	0.1445%	69	65355	0.1056%
2003	858	708511	0.1211%	72	65002	0.1108%
2004	709	728212	0.0974%	85	65838	0.1291%
2005	664	721334	0.0921%	65	63884	0.1017%
2006	642	726909	0.0883%	62	64154	0.0966%
2007	644	738550	0.0872%	55	65991	0.0833%
2008	760	727033	0.1045%	78	65833	0.1185%
2009	812	704964	0.1152%	81	63669	0.1272%
2010	1007	No data	n/a	No data	No data	n/a





Assessment of Trend

The first chart clearly shows an overall decline in the numbers of Geology GCSE examination entries over the period 1988 to 2007 inclusive. Whilst the initial drop might in part be due to a decline in the underlying population aged 16 years, it is clear that other influences must account for the steady decline over the first decade (1988 to 1997). It is generally agreed that these statistics reflect the impact of the National Curriculum. Geology was not considered as either a core or foundation subject.

In recent years (since 2006) there has been a slight increase in the numbers of Geology GCSE examination entries, which is clearly not due to an increase in population as the population aged 16 years has been declining during this period.

The numbers of Geology Intermediate examination entries are much lower, although they have remained relatively stable throughout the period 2000 to 2009 inclusive with a notable one-off increase in 2001.

For each year over the period 2000 to 2009 inclusive, the proportion of Geology Intermediate examination entries in Scotland compared to the population aged 16 years is even lower than the proportion of Geology GCSE examination entries in England, Wales and Northern Ireland compared to the population aged 16 years. For the UK as a whole, the proportion is only just over one exam entrant per 1,000 students.

Data Limitations and Future Recommendations

The data on Geology examination entries are robust and gathered annually. Therefore it is likely that these data can be used to inform future annual updates.

A number of changes to the formal education system make this indicator potentially significant into the future. Types of examinations are changing, with more options becoming available including the Baccalaureate and a greater number of vocational qualifications. With an increasingly wide choice of

examinations on the market, it will be important to note how Geology examination entries fare. Other issues to note will be whether the WJEC subject specification for Geology renews interest and the emphasis given to Geology within current Government reviews to the National Curriculum.

It would also be interesting to consider the examination entry data for those students aged 18 – Advanced (A) Levels in England, Wales and Northern Ireland and Higher in Scotland. It would allow additional issues to be explored and possibly indicate the extent to which students taking GCSE or Intermediate Geology carry on to study the subject at a higher level.

Knowing more about the numbers of qualified geologists within teaching would also help inform the recognition for geology within formal education.