Science and the teaching of science are generally well served in the UK, with a rich history of established organizations that represent and support the scientific community (Falk et al., 2015). We have a number of learned societies, such as the Royal Society, the Institute of Physics, the Royal Academy of Engineering, the Royal Society of Chemistry, the Society of Biology and so on. These societies are actively engaged with the development and welfare of science education. We have seven Research Councils funded by the UK government, five of which are oriented towards the natural and applied sciences. The Economic and Social Research Council (ESRC), one of the two other research councils, has also funded science education research. Within Europe, there are research and innovation grants available from the European Union, such as the ‘Seventh Framework Programme’ (2007–2013) and ‘Horizon 2020’ (2014–2020). We are also blessed with various non-profit organizations and charities that support and/or fund research around science education (for example, the Association for Science Education, the British Science Association, EngineeringUK, the Gatsby Foundation, the Leverhulme Trust, the National STEM Center, the Nuffield Foundation, the Primary Science Teaching Trust and the Wellcome Trust). In the US and Australia, the National Science Foundation and the Australian Research Council are probably the biggest funders of science education research, respectively, alongside the numerous charities established by philanthropists. It is perhaps fair to say that science education is generally well served, especially in terms of funding, when compared to other school subjects (for example, history or geography).
Yet, there are concerns that science education in England, and the UK more generally, has stagnated since 2006, at least in the context of the Organisation for Economic Co-operation and Development’s (OECD, 2012) international triennial comparison study, the Programme for International Student Assessment (PISA), which tests for young people’s reading, mathematics and science skills at age 15. In response, the UK government took note of the school systems in countries that ranked highly in the PISA study (for example, Finland, Hong Kong and Singapore) and devised a new national curriculum for English state schools to raise standards. The new curriculum began in September 2014, with the final phase to be rolled out from September 2017. For science, this means more emphasis on the teaching and learning of hard facts and scientific knowledge, which are probably more measurable in standardized tests, but perhaps at the expense of other developmental skills, such as critical or creative thinking. Science is a compulsory subject for students until the age of 16 (that is, until GCSE level), but there are concerns that interest and participation in post-compulsory science education have declined since the late 1990s, with some suggestions that there is now a ‘crisis’ in science education (MacFarlane, 2003). Although the nature of such a crisis is debatable, there is a striking diversity among minority ethnic students and the ways in which they participate in science.

This chapter begins by exploring this debate through student enrolment data across compulsory and post-compulsory science education. Here, the different types of science are teased out, as well as the useful distinction between careers in and from science. The scope of the ‘crisis’ is discussed with a focus on structural factors and theories around gender, social class and race/ethnicity. In particular, it is argued that some, but not all, minority ethnic groups appear to ‘leak’ from the science education pipeline, creating various forms of underrepresentation. The concepts of identity, habitus and capital are discussed.

Unpacking science careers and science education statistics

The ‘crisis’ in science education debate is complex because science constitutes a range of disciplines and not all sciences experience a decline in participation. We can define participation as ‘the action