

The Nature of Quantitative Methods in A level Sociology

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Summary

British sociology has been characterised as suffering from a 'quantitative deficit' originating from a shift towards qualitative methods in the discipline in the 1960s. Over the years, this has inspired a number of initiatives aimed at improving number work within the discipline, of which the Q-step programme is the most recent. These initiatives, and the work that supports them, primarily concern themselves with the curricula, attitudes, and output of students and academics within Higher Education. As such, the role that the substantive A level plays in post-16 quantitative education has been largely ignored. This thesis addresses this apparent gap in the literature, providing a study of the curriculum, with a particular focus on the quantitative method element therein.

The thesis takes a mixed-method approach to curriculum research, encompassing the historical as well as the current, and the written as well as the practiced. The analysis is presented in a synoptic manner, interweaving data from across the methods used, in an attempt to provide an integrated and holistic account of A level Sociology. An overarching theme of marginalisation becomes apparent; not least with the subject itself, but also with quantitative methods positioned as problematic within the research methods element of the curriculum, which is itself bound and limited. The high-stakes exam culture is shown to dominate the behaviour of both teachers and students, regardless of their attitudes and understanding of the relevancy and/or importance of quantitative methods in the subject. Taken together, these findings imply a potential problem for recruitment into quantitative

sociology, whilst offering an avenue by which this might be addressed. Linked to the high-stakes performativity culture, a novel conceptualisation of teachers' understandings of the relationship between their role, the curriculum, the discipline, and notions of powerful knowledge is offered.

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1 Introduction

1.1 Introduction

There is a perceived crisis of quantitative skill and literacy within the social sciences in the UK. This is particularly marked in the case of sociology, which has been characterised as suffering from a 'quantitative deficit' which, while by no means new, has become more pronounced in a context of the rising profile of secondary data analysis, large-scale social survey data, and big data. The 'crisis' is seen to originate in the shift towards qualitative methods, and away from quantitative methods, following the expansion of the discipline in the 1960s. A number of initiatives have been developed to promote and improve number work within the discipline, including the recent Q-Step programme (Nuffield et al., 2012). These initiatives have been primarily concerned with the curricula, attitudes, and output of students and academics within Higher Education. Thus, the supporting body of literature has tended to focus on undergraduate education and little work has concerned itself with those earlier in the supply-chain, i.e. those preparing themselves and others for entry into the HE system. As such, the role that the substantive A level plays in post-16 quantitative education has largely been ignored. This is particularly striking given the concurrent concern within the wider literature and larger narrative of relatively low levels of numeracy amongst school pupils and the general public. The role that secondary education plays in the development of mathematically skilled and quantitatively literate students is

clearly important to address both the broad and specific concerns about the 'crisis of number' (Williams, Collet & Rice, 2014).

This thesis provides just such a focus on secondary education, and on A level sociology in particular. It draws on a variety of methods and sources to address an apparent gap in the literature. With a conceptualisation of the curriculum as consisting of a number of actors, this mixed-method approach to curriculum research encompasses the written as well the practiced elements, and how they interact. The curriculum as practiced includes both the experiences and behaviours of teachers and students and, as such, their understanding of the written curriculum and the place of quantitative methods therein. This understanding is thought to frame their engagement with these elements of the curriculum. An historical account of the discipline, qualification, and curriculum is also provided, prior to discussion of the contemporary. Taken together, these provide a landscape of upper secondary education which is dominated by examinations and assessment. The analysis is presented in a synoptic manner, weaving data and analysis from across the methods and sources, to provide an integrated and holistic account of the A level, which necessarily includes acknowledgement of the pressures and influence of the high-stakes examination culture in which the curriculum actors operate.

This chapter offers an overview of the immediate context of the thesis, placing the concern within the social sciences within the larger narrative of relatively low levels of numeracy within the general population. It provides examples of recent initiatives, in both secondary and higher educational arenas, to improve

both provision and engagement in mathematical and quantitative education. Details of the Q-Step programme are provided, acting as a detailed example of the concerns, issues and activities engaged with in Higher Education (HE) to tackle the 'quantitative problem'. Following this introduction to the context, the research questions which were formulated with this context in mind are provided. The chapter then closes with an outline of the thesis, providing the structure and more detail on the substance of the following chapters.

1.2 Research context: The quantitative problem

The 'quantitative deficit' (Williams, Sloan & Brookfield, 2017) or 'crisis of number' (Williams, Collet & Rice, 2004) in the social sciences has both generic and discipline-specific roots (Payne, 2014), with concern located both within and outside the HE arena. Whilst the concerns raised within the HE sphere (which are discussed later in this chapter) have potentially far-reaching consequences, there is a broader narrative of a quantitative deficit which begins before students enter HE institutes (HEIs). Within this, the UK is positioned as suffering from a general numeracy deficit, with poor quantitative skills being developed by students in secondary education. The Nuffield Foundation has published a series of reports on this matter which detail the position of mathematics in post-16 education in the UK as a stand-alone subject (Hodgen *et al.*, 2010; Hodgen, Marks & Pepper, 2013; Hillman, 2014) and as part of other, substantive subjects (Nuffield Foundation, 2012¹). What

¹ Subjects included in the report on the mathematical content of A Level assessments were Business Studies, Computing, Economics, Geography, Psychology and Sociology.

these reports demonstrate is both the low levels of participation in mathematics as a subject in itself at this level of education compared to other countries, partly explained by the non-compulsory nature in most of the UK, and the range and variety of levels of participation in any mathematics for those studying at this level, due to the breadth and complexity of the post-16 system, in England particularly. The wider implications for these low levels of participation are not merely one of supply but also the resulting disparity between those who manage to access a quantitative education on select pathways and those who do not. Work for the Higher Education Academy's (HEA) STEM project (see Hodgen, McAlinden & Tomei, 2014) investigated the 'mathematical transitions' from A level to undergraduate course for a similar range of subjects as that investigated in the Nuffield Foundation (2012) report. Sociology was one of these subjects, with the resulting report by Scott Jones and Goldring (2014) representing one of the only contemporary studies which has included some regard to the Sociology A level, other than the aforementioned Nuffield Report.

As outlined in the preceding, much of the existing literature focussing on this, pre-university, level of education is concerned with mathematics. Whilst mathematics is clearly a part of a quantitative education, it is important to note that it is not simply more maths that is needed. For example, the learning of statistics is also a crucial part of a quantitative education, of which there is little in the GCSE Mathematics curriculum (Hodgen *et al.*, 2014). Quantitative literacy goes still further beyond this, encapsulating the development and use of a 'statistical imagination' (MacInnes, 2018, p.7) and an ability to think

critically using mathematical reasoning, the latter of which has been noted as missing from the current Mathematics A level course (Swan, 2005; Porkess, 2013). Going some way towards addressing both this and the small proportion of students engaging in any kind of mathematical education post-GCSE, Core Maths² was introduced to the national level 3 offer. The qualifications offer students who have demonstrated some ability in mathematics (through achieving at least a grade C at GCSE) but who are not studying A level Mathematics the opportunity to develop ‘meaningful’³ and ‘real-life’⁴ mathematical skills. For these students, it is seen to support their other A level subjects, employability, and ‘seek[s] to address the mathematical preparedness of UK university entrants’ (Hodgen *et al.*, 2014)

The implications of a lack of engagement with quantitative methods extend beyond academia and the workplace, according to the British Academy (2012), who comment on the detrimental impact on citizen participation given that ‘statistics are the bedrock of democracy’ (p.7; quoting Jil Matheson, then National Statistician). The British Academy summarises the issue, stating that the quantitative ‘deficit’ has ‘serious implications for the future of the UK’s status as a world leader in research and HE, for the employability of graduates, and for the competitiveness of the UK’s economy’ (p.1; a sentiment reiterated

² Core Maths is not a qualification in itself but rather an umbrella term for separate qualifications offered by the examination boards. These include Mathematical Studies (AQA), Quantitative Problem Solving and Quantitative Reasoning (OCR in collaboration with Mathematics in Education and Industry), and Mathematics in Context (edexcel).

³ <https://www.stem.org.uk/core-maths>

⁴ *ibid.*

in a later report; British Academy, 2015). This notion of the UK being ‘left behind’ is by no means new but it may be particularly true for the social sciences today.⁵ The pressing nature of the concerns raised is, in part, driven by the wealth and nature of new forms of quantitative data, driven by digital technology, and the analytic skills and understanding necessary to handle these data. The Economic and Social Research Council (ESRC) investment in large-scale data sets⁶ and the establishment of the Administrative Data Research Network, which enables linkage across both administrative and research data sets, are examples of Big Data in academia. Furthermore, some implication of the concerns extends to issues of ‘national wellbeing’ (Porkess, 2013), and the ability of ordinary citizens to interpret both the data itself and the decisions made from those data.

The ESRC investment indicates a recognition of the importance of quantitative data to the study of society. This is reiterated by the ESRC in its benchmarking review of UK sociology (produced jointly with the BSA and The Heads and Professors of Sociology Group [HaPS], 2010). Whilst positioning UK sociology as a ‘third culture’ somewhat between the natural sciences and the humanities, the report places statistics as the common core of the social sciences. Whilst this review praises the strength of qualitative work in UK sociology, it also highlights the importance and improvement needed in terms of quantitative research methods so as to bring them in ‘closer alignment with institutional

⁵ Indeed, we can go back to Babbage’s assertion in 1830 that England was ‘fast dropping behind’ in terms of mathematics.

⁶ Including Understanding Society and the European Social Survey.

and state-of-the-art standards' (p.2). Part of this call no doubt lies in the under-utilisation of the very datasets that the ESRC funds (along with other social science survey and administrative data). Indeed, a real concern is beginning to be voiced about the tenuous ability that those in this field have in retaining 'jurisdiction over the collection and analysis of social data' (Halford and Savage, 2017, p.113) given the shortage of skilled quantitative researchers (British Academy, 2012). Several other review and scoping studies have raised similar concerns over the 'quantitative deficit' within the discipline broadly (e.g. Williams, Collet & Rice, 2004), with others evidencing the issue with low publications of quantitative research in British sociology journals (Payne *et al.*, 2004; Platt, 2012). Further studies have examined capacity building in specific regions, namely Wales (Lynch *et al.*, 2007) and Scotland (McVie *et al.*, 2008). A substantial amount of this literature has had a specific concern with undergraduate provision (e.g. Parker *et al.*, 2008) and how this might be improved (MacInnes *et al.*, 2016).

This body of research is both informed by and informs the many initiatives put in place to address the concern over the level of quantitative literacy in the social sciences. For the Higher Education Funding Council for England (HEFCE, 2005) the identification of quantitative social science as a 'nationally strategic **and** vulnerable' subject (HEFCE, 2005; emphasis in original) meant inclusion in the £300 million programme of work between 2005 and 2011. The funding (£4 million from HEFCE and £18 million from ESRC) saw investment to support development of the undergraduate curriculum, funding and capacity building within postgraduates, and investment into mid-career reskilling. Interestingly,

the interim report likens the concern with a deficit of quantitative social scientists with a similar concern in the natural sciences regarding the deficit of mathematical biologists (Adams, Mount & Smith, 2008). Indeed, although the current research is concerned with sociology specifically, we can see the quantitative deficit amongst the student cohort across many subjects, highlighting issues referred to earlier in the wider educational 'supply-chain'. Amongst these, psychology is positioned as a useful comparison by Scott Jones and Goldring (2014) 'as it has maintained its popularity and its high quantitative methods component within the higher education market place' (p.13). Furthermore, the challenges faced by those teaching quantitative methods in psychology are similar to those faced by those in sociology, with a narrative that students both struggle with and feel anxiety towards such topics (e.g. Onwuegbuzie & Wilson, 2003; Ruggeri *et al.*, 2008). To return to the idea of the supply-chain, although A level Psychology requires the inclusion of specified mathematical content (Department for Education, 2014), neither subject universally requires prior study of the A level in order to pursue it at undergraduate level. Given the pertinent similarities and dissimilarities between the two subjects, A level Psychology was included as part of the current research and appears in a targeted manner throughout the thesis as a means of comparison.

Other activities to address the quantitative 'problem' have included a substantial investment by the ESRC (and others) in the Quantitative Methods

Initiative⁷. Although concerned with all stages of the academic career, the initiative, which runs until 2019, has seen a focus on the undergraduate programme. Included within its activities was the appointment of a strategic advisor (co-funded by HEFCE 2009-2014). Drawing on evaluation of the state of undergraduate quantitative methods teaching, a series of proposals for objectives were set out (MacInnes, 2009; followed up in MacInnes, 2015). In terms of supporting the curriculum and those who teach it, the objectives fed into the Curriculum Innovation/Research Development Initiative (CI/RDI), which funded twenty projects (with HEFCE and British Academy) to produce support materials and training for quantitative methods teachers, and the quantitative methods teachers mailing list (with the British Academy), which connects sometimes thinly-spread teachers across various universities in the sharing of resources and best practice.

Perhaps the most notable attempt to address issues of capacity, training and development in the undergraduate social science cohort is the introduction of the Q-Step programme. As is detailed in the following section, the main emphasis of the programme has been large investment in the creation and delivery of new, specialist undergraduate programmes and modules. In addition to these activities, most of the 15 Q-Step Centres have been involved in working with schools and colleges, either to support teachers and/or to encourage recruitment. Despite this, there appears to have been little research into one of the main feeders of mainstream sociology degrees: A level

⁷ Although the ESRC's active involvement with addressing the standards of quantitative methods training stretches back to at least 2000 (MacInnes, 2015).

Sociology. The following offers a description of the Q-Step initiative as a detailed example of efforts being made in the immediate context to address the quantitative deficit.

1.2.1 Addressing the quantitative deficit: The Q-Step example

The Q-step programme has seen massive investment into the quantitative methods training of undergraduate social science students. The funding for this investment, totalling £19.5 million over 6 years (2013-2019), has come through a partnership of the Nuffield Foundation, ESRC and HEFCE.⁸ This investment has funded the establishment of 15 Q-step Centres, and 3 Affiliates, based within a range of universities across the UK. The activities of these centres are numerous but all work towards the promotion of ‘a step-change in quantitative methods training for UK social science undergraduates’ (Nuffield Foundation *et al.*, 2012, p.2). Details of each of the centre’s activities can be found on their respective websites. Rather than detail these here, the intention is to provide an overview of the range of activities and direct outcomes that these activities are striving towards. In terms of outcomes, we can look to the funders’ aims in the first instance:

‘The QM Programme aims to generate sustainable institutional change that will increase the critical mass of quantitatively skilled social scientists in UK universities. It will fund training and other activities that will lead to the creation of a substantial

⁸ Whilst HEFCE’s funding remit covers England only, Nuffield and ESRC funding extends to include the rest of the UK.

cohort of quantitatively-trained undergraduates, across a range of social science disciplines.’ (Nuffield Foundation *et al.*, 2012, p.2)

The centres granted funding through the initiative have responded to the call in a number of ways, all passing the selection criteria of, and evidencing, ‘additionality’, ‘excellence and imaginativeness’, ‘institutional commitment’, and ‘sustainable and long-term change’. Nearly all the centres have taken a two-pronged approach in their response to the demand to increase the number of quantitatively able graduates. The first of these has involved integrating, embedding and enhancing the level of quantitative methods and analysis training within existing degree pathways. The eventual outcome of this is anticipated to be a higher baseline ability of all social science graduates; an increase in the number of graduates with a basic understanding of, and skills in, quantitative methods. The second, involved the creation of new degree programmes to increase the number of social science graduates with advanced quantitative skills.

The new degree programmes (detailed in the undergraduate Q-Step prospectus; Nuffield Foundation, 2016) tend to have the extended/advanced level of engagement with quantitative methods and analysis indicated by a ‘with quantitative methods’ suffix, or something similar, to the substantive degree title.⁹ The intended outcome for those centres that have chosen both

⁹ Not all centres take this approach. For instance, Cardiff Q-Step Centre’s quantitative degree pathway is entitled ‘Social Analytics’.

pathways is a relative increase in the number of social science graduates with advanced quantitative skills, distinct from those who graduate from the regular, albeit revised, pathway. The boundaries between the two pathways are differently blurred and defined depending on the centre. Some centres offer explicit conversion routes, including City University where all students can apply to join the 'with Quantitative Methods' pathway at the end of their first year of study and Essex (an Affiliate) offering 'Applied Quantitative Methods' qualifiers to over 30 substantive degrees for those completing specified modules. For other centres, the boundaries between the pathways are more distinct with students having to apply to study one of the badged programmes directly through their UCAS application, with conversion unlikely to be possible. This distinction between the recruitment practices of the centres, onto these badged pathways, appears to reflect a difference in underlying philosophy and attitude towards increasing the number of quantitative social science graduates. The former appears to work with the typical social science degree applicant, i.e. those not necessarily inclined towards quantitative methods, with the latter appearing to be attempting to attract less typical mathematically able students who would otherwise not study sociology.

Manchester University, appears to be following the former of the two approaches described above, with the explicit statement in their Shaping Society undergraduate prospectus: 'Our Q-step degree programmes have been designed to be accessible to students without a strong background in maths'. Bristol University take this another step stating: 'our ethos is that

quantitative methods is not about learning maths but about how to draw meaning from data'. Interestingly, this last statement is important to the wider discussion of what quantitative methods in the social sciences entails, what epistemological understanding they are drawn from and on what ontological foundation this rests. For other centres demonstrating a harder boundary between the unbadged substantive degrees (offering a more basic understanding of quantitative methods) and the badged specialist degrees (offering a more advanced understanding), there is an implied clearer distinction between the typical student on each course. These courses appear to be targeting those students who may have a quantitative background or interest, attempting to make social science an appealing option which they may not have previously considered. Unlike those without the hard boundary, these centres may be more likely to take a traditional view of quantitative methods which concerns itself with proven mathematical ability. These assertions are made nowhere more apparent than in the entry requirements to the Edinburgh University Q-step programmes, which require applicants to hold an A level (or Higher) in Mathematics. Taking sociology as an example degree pathway, one might position these two approaches to increasing the number of quantitatively literate graduates as being the difference between teaching sociologists how to think quantitatively, on the one hand, and teaching mathematicians to think sociologically, on the other (a difference which will be returned to in Chapter 7).

Outside of undergraduate level activities, the Q-Step programme has a desire to effect change over the educational life-course. At pre-undergraduate level,

the programme desires to make links between the university Q-step centres and the schools and colleges from which potential students will be drawn. The main focus of this strand of activity appears to be a focus on recruitment, particularly on creating awareness of quantitative social science in those students taking what one Centre termed ‘a panel of scientifically orientated subjects’ (Jones, 2014). Notably, this does not include existing social science A levels outside of Psychology, Economics and Business Studies (only the latter of which is an area of focus for the Q-Step programme). Progression to post-graduate education is also considered within the programme, with several of the centres developing some form of advanced quantitative data Masters programmes.¹⁰ However, the creation and development of new and existing undergraduate degree programmes is the main focus of Q-Step activities. As such, a major part of the activities of the Q-step centres has revolved around the matter of quantitative pedagogy.

Whilst there is yet to be an evaluation of the success of the Q-Step programme (however this might be measured), a report by Professor John MacInnes has offered some insight into the lessons learnt from the teaching and learning practices of the Centres and Affiliates involved (Nuffield Foundation, 2018).¹¹

Drawing on interviews with staff, the key messages from this report revolve

¹⁰ Those offered by Warwick University are perhaps the most exciting of these. Where few Q-step centres explicitly make reference to newer forms of data in the official prospectus of the Q-step centres, Warwick offers an MA in Politics and Big Data and an MSc in Big Data and Digital Futures.

¹¹ It is worth noting MacInnes’ credentials at this point. He is both the Strategic Advisor for Quantitative Skills at the British Academy and formerly played a similar role to the ESRC.

around student identity, the role of enthusiastic and able teaching staff, and the nature of quantitative methods. Importantly, he raises the issue of the difference in mode of learning between quantitative and substantive areas, the space needed to allow students to grasp the basics and overcome any 'initial barriers' to their own learning, and the strong role that application plays in understanding and mastery. For those that do come to grips with the quantitative content, the report describes a process of identity formation in which these students are set apart from their peers on non-badged pathways. In terms of teaching staff, the report notes the importance of 'remarkably able and enthusiastic teachers' (p.3). This human resource is important not just to the explicit teaching of quantitative methods but also to the embedding of quantitative methods in substantive topics. The mixed impact and success of embedding quantitative methods in this way, in part at least, appears to be down to the investment of all those teaching on these pathways. Relatedly, the report makes reference to the paradigms of social science, and the apparent juxtaposition of quantitative and qualitative methods; something which the Q-Step programme has been active in trying to distance itself from. The driving forces behind the Q-step programme are worth considering here, particularly given the disciplines in which the programme is hoping to effect change. The programme has gone to some lengths to state that the desire for this 'step-change' does not grow out of epistemological concern but is a response to market forces. This is made apparent in the letter in support of

the programme, signed by representatives of a number of learned societies and professional bodies (Roberts *et al.*, 2012¹²):

‘We are not trying to privilege one type of method over another – such as quantitative over qualitative. Our concern is that there is a ‘market failure’ in quantitative skills. The evidence points towards a serious problem with quantitative skills, not in other approaches.’

This ‘market failure’ is conceptualised as a lack of ability to attract students and teachers into quantitative social science (Nuffield Foundation *et al.*, 2012), resulting in an inadequate number entering academia (identified as an area of staffing shortage in the demographic review conducted for the ESRC by Mills *et al.*, 2006) and wider employment (where quantitative literacy is considered a core skill, according to the Advisory Committee on Mathematics Education, 2011, and the Confederation of Business and Industry, 2010¹³).

There is an apparent lack in the quantitative deficit literature concerning the role of the substantive A level in post-16 quantitative education. Of the disciplines targeted by the Q-Step programme, several have substantive A levels which are, in theory at least, recontextualizations (to use Bernstein’s

¹² The learned societies and professional bodies quoted therein include: the British Academy, British Educational Research Association, British Psychological Society, British Sociological Association, Political Studies Association, Royal Geographical Society, Royal Historical Society, Royal Statistical Society, Social Policy Association, and Social Research Association.

¹³ Interestingly, a recommendation coming out of this report was for encouragement for able students to pursue a level 3 qualification to supplement their other social science or humanities A levels, similar to the subsequent Core Maths qualifications referred to earlier in this chapter.

term) of the disciplines as they exist in HE. The extent to which a school subject can adequately capture the essence of a discipline varies, partly as a function of the nature of the discipline, as well as the dynamism of the discipline and the responsiveness of the recontextualization processes to capture this. Of the disciplines targeted by Q-Step, and for which there is a corresponding A level, political studies and international relations, and sociology are those most prevalent. All the Centres target more than one discipline, with all bar one of the 15 Centres including sociology as one of these; for political studies and international relations, it is all bar two. In terms of numbers of undergraduate students potentially targeted by these activities, Figure 1 (using HEFCE data¹⁴) shows relatively similar numbers of students take both degree pathways, with sociology consistently attracting slightly more students than politics. However, the extent to which the Government and Politics A level can be considered a mirror of the political studies and international relations degrees taught and targeted by the Q-Step is debatable. Additionally, the relatively small numbers of candidates at A level raises questions to the proportion of undergraduate entrants on this pathway who have studied the A level. Meanwhile, the Sociology A level has a potentially closer alignment with the undergraduate discipline and is taken by more A level candidates, being one of the 10 most popular A levels over recent years. Whilst it is true that one need not take A level Sociology in order to study it at undergraduate level (Scott Jones & Goldring, 2014), approximately 80% of British sociology undergraduates have

¹⁴ Available at <http://www.hefce.ac.uk/analysis/supplydemand/comfd/>

studied the subject at A level (BSA, 2013; cited in Scott Jones & Goldring, 2015). The A level is a site of first contact for many students, shaping their impression of the nature of the discipline.¹⁵

Another reason for choosing to investigate the Sociology curriculum is the interesting case that sociology presents. Although it has been explicitly and ostensibly stated that Q-Step is not an epistemologically driven initiative, the ontological breadth and epistemological wrangling that occurs within the discipline cannot be ignored. Indeed, the assumptions and ethos of the Q-Step programme, and initiatives like it, have come under scrutiny and challenge by authors such as Byrne (2012) and Babones (2016). Despite the ostensible declarations of a lack of epistemological positioning; one cannot escape the epistemological readings of the pursuit of one approach simply by denying that they are important. One such reading is that proffered by Babones (2016):

‘One suspects that the hidden agenda of the ESRC and similar bodies is not the imposition of the use of quantitative data as such but the imposition of the positivist research paradigms closely associated with the use of quantitative data.’ (p.466)

Whilst it is beyond the remit of this thesis to investigate whether or not such a ‘hidden agenda’ exists, this quote gives an indication as to the level of engagement with these matters. Such engagement and breadth within the discipline with matters of epistemology, reflect not only an ontological breadth

¹⁵ But not all, thanks to the retention of Sociology as a GCSE option post-reform (supported by the BSA, as detailed in their statement of support, printed in Network, Spring 2015).

but also a variety of understandings of what it means to 'do' sociology. These positions and issues are discussed in more detail throughout this thesis but are worth raising here to provide more context for the research questions outlined below.

1.3 Research questions

In order to address the aforementioned gap in the literature, the thesis sets out to answer the following research questions:

1. How are quantitative methods positioned in the A level Sociology curriculum, as it is set out in the written documentation?
2. How do A level teachers' understandings of the position of quantitative methods, both in the written curriculum and the discipline influence their pedagogy?
3. What are A level Sociology completers' attitudes towards quantitative methods and how do they perceive the relative difficulty of these elements of the curriculum?
4. Is the ontological breadth and epistemological variety evident in the discipline reflected in the A level curriculum, both written and practiced?

Throughout the following analysis, it will become apparent that *how* quantitative methods and analysis (the original focus of the thesis) are taught became something of a moot point. Although quantitative methods pedagogy is a key area for those teaching the procedure and application of such methods, the marginalisation of quantitative methods, coupled with a lack of

required or assessed application, indicated that there were potentially few instances in which to directly observe this pedagogy in action.¹⁶ Therefore, the research questions focus on the relative positioning of quantitative methods by the various actors of the curriculum.¹⁷ Given the useful comparison offered by psychology (Scott Jones & Goldring, 2014), A level Psychology was also examined as part of the research process. The process undertaken for investigating A level Psychology was very similar to that in A level Sociology, following the same procedure for the written curriculum, teachers, and students. Rather than reporting the findings from this arm of the research in detail, the findings from the Psychology A level are used in a targeted way throughout the thesis as a pertinent means of comparison to the main concern: A level Sociology.

1.4 Thesis outline

Following this introduction, Chapter 2: Development of the A level, discusses the rise of taught sociology in the context of the development of the upper secondary examination system, the expansion of the HE sector, and the rise of taught sociology in the UK. Although the most recent developments are presented in Chapter 4, the exploration here offers insight into the role, nature and issues of the current qualification. It shows how, since inception, upper secondary examinations have tended to dictate the curriculum and highlights

¹⁶ In this context, drawing from the experience of those involved in the aforementioned initiatives (e.g. MacInnes, 2018) and the statistical anxiety literature (as reviewed in Ralston *et al.*, 2016).

¹⁷ Relative to both other elements within the same subject and to similar elements within other subjects.

the role and pressures that school teachers have faced. The history also attests to how these examinations have been used for a multitude of purposes, not least that of university matriculation. By documenting the concurrence of the turn to specialism in the secondary sector and the rise of taught sociology in the HE sector, the logic of introducing the subject to younger students was clear if not left uncontested. The nature of the early Sociology A level is explored and the relationship between notions of a 'core' and appropriateness of the syllabuses on offer examined. Although a discussion of the place of quantitative methods in the discipline is not engaged in, the characteristics of the growth of the discipline in the latter half of the 20th century highlight the diversity and breadth therein. It is argued that the relative lack of literature concerning the nature and role of the Sociology A level provides greater impetus to the research that the rest of the thesis goes on to document.

Chapter 3: Methodology, outlines the methodological approach taken in this thesis and the methods that were used in addressing the research questions. It sets out the distinction, made in order to ease data collection and analytic clarity, between different 'actors' of the curriculum, namely the written curriculum, the teachers and the students. The data collection and analysis processes for each phase of the multi-stage, mixed-method approach are detailed, along with the methodological approach that informs the analysis. Phase I involves document analysis of the written curriculum, to better understand the position of the quantitative methods in the A level, as described and prescribed by policy makers and awarding organisations. Phase II involves questionnaires, both traditional in design and those which take a Q-

methodology sorting approach. This chapter goes into some detail of the analytic process of these questionnaires, conducted with both teachers and students, with dimension reduction techniques described for both approaches. Phase III involved semi-structured interviews with teachers the schedule of which was informed, in part, by analysis of the preceding phases and which, in turn, informed the interpretation and analysis of the findings of the former. Lastly, ethical consideration and methodological limitations are recognised before moving on to the discursive analysis of the following chapters.

The first of the analysis chapters, Chapter 4: The Written Curriculum: Breath and Boundaries, offers insight into the written curriculum, using findings from analysis of the subject specifications and accompanying qualification specifications laid out by the Department for Education and Ofqual, and the exam specifications and scripts provided by the awarding organisations, based upon these. Particular consideration is given to the position of quantitative research methods content with the value attributed to such content inferred through marks available in assessment and the mode of assessment; the language used to denote levels of prescription; and the type of engagement encouraged and expected. Investigation of teachers' understandings of the quantitative content of the subject are also explored in this chapter, highlighting the diversity apparent within the Sociology teachers' perceptions. By including context of the recent reform period, which has seen the return to a linear A level system in England with final summative exams providing the only site for assessment, the chapter discusses the high-stakes exam and

performativity culture which appears to dominate the behaviour of both teachers and students. The impact of this wider context is recognised in the following chapters in the instrumentality it appears to inspire in both students and teachers.

The impact of the performativity culture on teachers' understandings of their role and pedagogy are explored in Chapter 5: A Tale of Two Sociologies?. This culture provides a backdrop to investigations of the role of the teacher in the A level curriculum, from skilled technician providing content through to subject specialists developing 'powerful knowledge' within their students. Learning approaches are also considered here, alongside how the culture and context of A level education, coupled with the prescriptive nature of the written curriculum, erode teachers' autonomy, leading to prioritisation of the role of the teacher as technician. Further explored in this chapter and contributing to the final conceptualisation of the relationship between different influences on teachers practise, is the distinction between subject and discipline. Exploration of a recognition of this distinction highlights the powerful use of the Q-sort method in overcoming potential 'professional desirability', which finds distinctions made between subject and discipline that were not fully recognised in interviews with the same individuals. Levels of identification with the discipline brings research methods to the fore again, with differing conceptualisations of what it means to 'do' sociology discussed.

The last of the analysis chapters, Chapter 6: The Instrumental (Sociology) Student, brings students to the forefront of the analytic discussion. Influences,

limitations and freedoms affecting student choice are explored, along with teacher accounts, in an attempt to establish the routes into the subject and better understand the resulting 'typical' Sociology students described by the teachers. This typical student is positioned as one who is academically weaker, as well as naïve to the subject, but who quickly takes on an instrumental approach to study and performance in the A level course. The chapter is in something of two parts. The first takes a discursive approach similar to that in the preceding chapters, exploring the aforementioned characteristics of the sociology cohort. A shift in tone occurs in the second part which examines student attitudes towards quantitative methods, considering mechanisms and models of engagement, drawing from the social psychology literature. This part of the chapter offers insight into the underlying mechanisms of student attitude towards quantitative research methods, placing the influential factors as both related and temporal in nature. The juxtaposition of the approaches both underlines differences in the findings and highlights where they complement each other. The chapter closes by bringing the findings from both approaches together, with the nuance of the findings discussed, including how students who might typically be expected to be averse to engagement with quantitative methods may not exhibit this aversion in practice.

All of the analysis chapters offer a discursive approach to the interpretation of findings. The discursive conclusion of the final chapter, Chapter 7: Discursive Conclusion, brings the findings of these discussions together. The theme of marginalisation, of quantitative methods and of research methods more generally is discussed, along with the marginalisation of the subject at A level.

Whilst these elements were touched upon in the preceding analysis chapters, bringing them together in this way summarises the relative positioning of them, as well as framing and informing the implications offered in this chapter. The research questions are also returned to here, directly addressed in a manner not seen in the analysis chapters. The extent to which the research can be thought to be answering these questions is discussed along with limitations and, somewhat accompanying, suggestions for further research.

2 Development of the A level

2.1 Introduction

Given that A levels are by far the most numerous and widespread encounters with academic disciplines that home students have in the UK, it is important to appreciate something of how they have emerged, developed, and grown, both generally and in terms of the discipline from which they are drawn. To this end, this historical investigation into the development of the curriculum follows in the footsteps of scholars such as Ivor Goodson in the UK and Thomas Popkewitz in the US. This historical account is important in introducing, and to an extent offering some explanation into, points and positions explored in the following analytic chapters. Whilst the most recent developments of the A level curriculum are dealt with in Chapter 4, the first half of this chapter provides something of a historical narrative by sketching a history of the development of the A level qualification up until the introduction of Curriculum 2000¹⁸. The second half of the chapter places the introduction, expansion and rise of taught sociology in this context.

This historical account of the development of the A level offers insight into the development and purposes of upper secondary examinations; the professionalisation and proficiency of teachers; and the growth, characteristics and destinations of students. Although the account of the expansion of sociology concentrates on the taught in this chapter, this expansion was

¹⁸ More recent developments are offered in Chapter 4 to provide immediate context for analysis for the current written curriculum.

‘paralleled by an expansion in research’ (Platt, 2002, p.181). The growth and development of the discipline in the latter half of the 20th Century are noted with regards to one of the defining characteristics of the discipline of sociology in the UK: the ontological breadth and epistemological variety found within. Rather than focus on divisions and ‘cleavages’ (as Williams *et al.*, 2017, term them) within the discipline, attention is drawn to the diversity apparent through the multiple sites and influences on the development of the discipline over its period of expansion in the latter half of the 20th century. This, along with the background of the wider development of the qualification, is provided as context to the development and character of the Sociology A level, along with the reception that it received. It is argued that the relative lack of literature concerning the nature and role of the Sociology A level provides greater impetus to the research that the rest of the thesis goes on to document.

2.2 Upper secondary examinations¹⁹

2.2.1 Prior to 1951: matriculation, accountability and performance

1951 is something of a crucial year in the study of A levels, and indeed secondary examinations generally, as this is the date that the General Certificate of Education (GCE) was introduced following the recommendations

¹⁹Scotland is notably excluded from this account. Whilst the Acts of Union (1707) established the joint parliament of England and Scotland, Scotland retained authority over aspects of its civic society, including the legal and education systems. In addition, although Rothblatt (2007) notes that the two education systems have paralleled one another since at least the 1870s, the systems could be considered to have diverged in the mid-20th century with the introduction of GCEs in England and Wales and the retention of Standards and Highers in Scotland.

of the Norwood Report (Board of Education, 1943). As will be covered in the following section, few major changes have been made to the A level since its inception in the mid-20th Century, although it did mark a substantial departure from those upper school certificates which came before it. As will be discussed, the A level introduced specialisation and, with increases in the number of students sitting the qualification, aided the massive expansion of the tertiary sector. Although the substance and format of the examinations for 18 year-olds changed with its introduction, the use of final school leaving exams as matriculation and accountability measures had carried over from the examinations it followed, the earliest of which can be dated back to the mid-1800s.

A levels directly replaced the Higher School Certificate (HSC) which had, following its own introduction in 1918, finally replaced (in 1923) a plethora of examinations that had come before it. Indeed, part of the impetus for establishing this 'new' examination (along with its junior, the School Certificate [SC]) was the rationalisation and coordination of the 100+ exams, both academic and professional, that preceded it. This coordination was the remit of the newly established Secondary Schools Examinations Council (SSEC) set up by the Board of Education in 1917. Although the content and running of the exams still remained the responsibility of universities, arranged into eight Examining Boards, the SSECs coordination seemed to realign the structure of the examination process such that it addressed the criticism raised by the President of the Board of Education (1917, reported in Tattersall, 2007) that the preceding system had not paid 'much regard to the general educational

convenience of the country'. It is interesting to note the purpose of the School Certificates, both in how they aligned with the purpose of the A level and how they drew, and were influenced, by the examinations that came before.

As already mentioned, part of the stimulus for establishing a national certification system (of which the School Certificates were the first) was the sheer number of examinations that existed in the early part of the 20th century. The Acland Report of 1911 (Board of Education, 1911) was no doubt inspired by both the establishment of a number of new university examining boards in the early 1900s (see Tattersall, 2007, for a detailed history of examining boards in England), as well as the establishment of Local Education Authorities (LEAs) in 1902, which gave the state a stronger position in which to make such recommendations. The many purposes of the assessment are evident in the recommendations of the Acland Report and the School Certificates practices and are recognisable in modern day exams. It is worth noting that, as with later examinations, these purposes are often the result of a 'process of adaption' (to use Rothblatt's phrase; 2007, p.124) and are not necessarily those which were originally intended (as noted by the 1931 Report on the School Certificate, for example). Of these, the measuring of teachers' performance, the measurement of students' academic development and providing evidence of students' suitability for entry into university are worth pausing on here. Using Willis' (2013) detailed historical document analysis of the examination system in the UK, we can see that these three purposes have their roots in the Victorian system that predated the School Certificates; namely in the College of Preceptors examinations, the Oxford and Cambridge

Locals, and the university matriculation exams introduced by University of London in 1838.

In terms of the measurement of teachers, schools and students, the College of Preceptors (founded in 1846 by a collection of British teachers) is a good place to begin. As Willis (2013) explains, the first examinations that the College designed and administered were for the enrolment of teachers into the profession, which included a 'paper in the theory and practice of education' (p.79). Fairly rapidly the College began to design and administer exams for secondary school children, with the first external, competitive secondary school exam sat in 1850. Originally these exams were tailored to the curriculum of the particular school and covered a wide range of subjects. In 1853, the administrative load of tailoring exams to meet the differing curricula of different schools was overcome when the modern format of uniform papers, sat by all candidates, was introduced. Although originally introduced as a means of revenue generation for the College, the exams provided an accountability measure whereby teachers could be demonstrated to be providing the instruction necessary for students to meet certain levels of educational development. Furthermore, the standardisation of the test, removed from the individual curricula of the schools, enhanced public confidence in the results of the exams, who expected the exams to provide such accountability measures (just as with the Certificate of Secondary Education [CSE] introduced in the mid-20th century; Montgomery, 1965). Although the College had originally been founded to enhance the position of teaching as a profession, public scepticism at the credibility of teachers'

judgements in the examination of their students had remained. With the College of Preceptors student exam well on its way to becoming established (there were over 9000 certificates awarded by 1867; Willis, 2013), 1858 saw the establishment of the Oxford Locals and Cambridge Locals (originally separate, they merged in 1873). There is some debate in the recent literature as to the purpose of these 'Local' examinations, with Tattersall (2007) maintaining that these were matriculation exams, whilst Willis (2013) maintains they were not. Regardless, it is safe to say that these exams, like the second incarnation of the College of Preceptors examinations, became a method of measuring students' learning and came to denote 'a natural close of school education' (University of Oxford, 1982, p.5). The introduction of these uniform exams to the secondary education system allowed institutions to be compared relative to one another (albeit crudely) but it was not until the 1990s, and the introduction of published 'league tables', that schools were ranked by performances in GCSE and A level examinations. Meanwhile, the need to demonstrate a breadth of knowledge in order to achieve a pass in these examinations continued with the introduction of School Certificates and was eventually abandoned in favour of specialisation with the introduction of the GCE, following the Norwood Report (1943; see Section 2.2.2).

As well as incorporating the aforementioned aspects of measurement and accountability into the unifying School Certificates, issues of progression in students' careers was also accounted for. Whilst the School Certificates for 16 year-olds was intended to evidence general educational merit, over three subject groups, the HSC was narrower in focus (if not content) designed to be

an exam more suited to the needs of the universities and professions (Willis, 2013). The notion of an objective matriculation exam was introduced in the late 1830s by the University of London, who sought to step away from the selection processes of Oxford and Cambridge. As with the College of Preceptors examinations and the Oxford and Cambridge Locals, this exam looked for a breadth of competency and familiarity across a range of subjects, arranged into groups (arts, classics, maths). Similar to other exams of the time, the matriculation exam came to denote an end to schooling and the competence acquired therein, with many students taking the exam *whether or not* they intended to progress to university (aided by recognition of the exam's worth from employers). Along with the other exams, over time the popularity of the examination increased (by the 1890s as many as 3,000 candidates were sitting the exam each year; Willis, 2013) and other boards began to establish their own examinations.

As might be expected the various matriculation exams were designed specifically for the needs and requirements of particular universities, paying little (if any) attention to the curriculum being taught in the schools. The introduction of the HSC, replacing and simplifying these examination practices, was intended to be a single certificate which would 'allow entry into any university' (Tattersall, 2007, p.47). Much as the way that A levels have been used since, the HSC effectively became the basic standard for university entry, with individual universities requiring specific additional requirements. In arguably a more transparent way than has been offered since, these requirements were published by the Northern Universities Joint Matriculation

Board (NUJMB).²⁰ Schools were required to sign up to the certificates of a single board, with no guarantee that these would be accepted by universities affiliated to other boards. This gives the impression of little regional movement of students occurring as they progressed from sixth-form to their undergraduate studies, unlike that of modern day practices. Just as with the previous system of multiple examinations, the HSC paid little attention to the existing curriculum of individual schools, resulting in curricula being modified and somewhat determined by the examinations towards which the pupils were working. Whilst this may not be overly dissimilar to modern-day practice, the extent to which the examinations dictated the sixth-form curriculum by the end of the 1930s prompted sufficient concern to trigger a review published as the Norwood Report (1943) which, in turn, inspired reform of the secondary examination system and eventual introduction of the General Certificate of Education in 1951.

Over time, the school certificates had become increasingly popular, another reason for government to step in with reform. Drawing on historical sources (particularly, the Department of Education, 1974), Bolton (2012) details this increasing popularity. His report details that the number of candidates entered for the School Certificate more than trebled between 1919 and 1950 (from 28,800 to 99,900), with a more than ten-fold increase in the numbers taking the HSC in the same time period (from 3,200 to 34,400). Another

²⁰ The NUJMB was founded in 1903 by the Victoria University of Manchester, the University of Liverpool and the University of Leeds, and later joined by Sheffield (1905) and Birmingham (1916) and was a predecessor of the Assessment and Qualifications Alliance (the AQA exam board).

rationale for review and eventual replacement of this system, as we shall discover, is the likelihood of failure due to the requirement to pass subjects across all the groups. Indeed, in 1950 pass rates were such that 73% of those sitting the School Certificate and just 68% of those sitting the HSC were successful in gaining the qualification (Ministry of Education, 1962). Although the introduction of the School Certificates had signified a step-change in the examination system of the country to an extent, in many ways it was simply a rationalisation and amalgamation of the examinations that had gone before and it was not until the introduction of the GCE that significant change was seen in the nature of the examination. The most significant of these changes was the introduction of specialisation, in contrast to the breadth that had been encouraged in the previous examinations, the details and ramifications of which are explored in the following section.

2.2.2 1951 onwards: expansion, diversity and divergence

In 1951, the General Certificate of Education (GCE) was introduced. 16 year-olds saw the prior School Certificate replaced with Ordinary Level (O level) GCEs, with 18 years-olds now sitting the Advanced Level (A level) GCEs rather than the prior Higher School Certificate (HSC). Major differences are apparent between the two types of certification. As described in the previous section, under the old system students were required to demonstrate competency across a range of subject groups in order to receive certification. The new GCE qualifications, on the other hand, allowed certification of single-subjects. This was enacted following the recommendations of the 1943 Norwood Report (Board of Education, 1943) which argued that such practices would both

encourage more students to sit the exams and counter the 'diktat' (Tattersall, 2007) that the previous system had held over school curricula. As the Spens Report (1939) noted: 'most of our witnesses seemed unable to think of the curriculum except in terms of the examination, while some defined the curriculum entirely in such terms' (p.254). The extent to which the latter was actually fulfilled with the introduction of the GCE system is debatable, given the tendency of such summative examinations to become 'high-stake' (Stobart & Gipps, 1997) continuing. With regard to the former, numbers pre- and post-introduction suggest that the reform did have an almost immediate effect on uptake, with entrants for the A level in 1951 over 10,000 that of the HSC in 1947; rising from just over 26,000 (Gosden, 1983) to approximately 37,000 (Bardell, Forrest & Shoesmith, 1978).

The demonstration of breadth of knowledge the School Certificates had required had led to concerns that students were missing out on qualifications simply through failure on a single subject. The GCE circumvented this, apparently engaging classically 'weaker' students who may have been discouraged by the format of the former exams. However, the almost continual rise in A level entry since its introduction suggest other, more significant, factors were (and are) also at work. Before consideration of these, it is worth pausing to examine what is a relatively rapid growth of the qualification. Bolton's (2012) work allows the trend in A level participation to be mapped as a percentage of the relevant age group (Figure 1). Although only extending to 1998/99, the graph shows a gradual increase in participation over the years. Later statistics reveal this trend continuing, showing that in 2004/05,

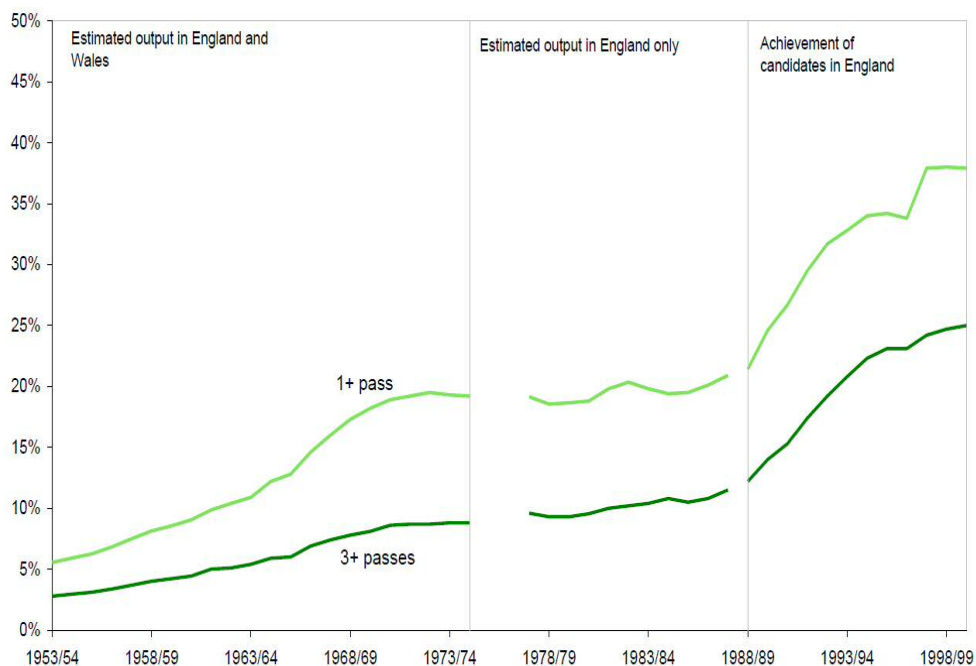


Figure 1: Proportion of relevant age groups achieving A levels (taken from Bolton 2012)

around 39% of the relevant age population achieved at least one A level and 30% gaining at least three.

A levels are not the only level 3 qualifications available in England and Wales, with other academic and vocational qualifications available. However, they are the most popular form of qualification for those studying at this level, sometimes taken alongside vocational BTEC qualifications. HEFCE data (2015) shows that, of those in level 3 education in English schools, 202,195 students were on an A level pathway by 2005-06. By 2012-13 the numbers had risen to 205,170; although this time period also saw an overall rise in the size of the level 3 cohort, along with a rise in proportion of students taking BTEC and combination qualifications so that the overall proportion of A level only students actually decreased (from 81% to 67%).

This increase in participation over time, at least in the earlier half of the GCE A level's introduction, may well have been affected by the length of compulsory education, which has been increasingly raised by a number of Acts of Parliament. Notably, the 1944 Education Act (known as the Butler Act) introduced free secondary education for all with a school leaving age of 15, which was later raised to 16 years old in 1973. Keeping students in school for longer and encouraging them to sit O level GCEs was part of retaining them on an academic pathway, funnelling them towards A level GCEs. Indeed, Willis (2013) claims exactly this, noting that, similar to the situation at A level, students who might not otherwise have sat the School Leaving Certificate were now (since its introduction in 1951) sitting at least one O level, enabling and encouraging those who performed well at this stage to go on to study A levels. Furthermore, the introduction of O levels into the Secondary Modern Schools saw the expansion of sixth-forms. Along with more of their own students taking the exams, students from these newer schools were transferring over to grammar school sixth-forms to enrol on A level courses (Rothblatt, 2007). This increase in the number of candidates sitting the exams was matched with increasing levels of achievement. Bolton (2012) notes the consistent increase in the proportion of students who gained 5 or more passes at 16 years old, along with a concurrent decrease in those not managing to achieve any (as detailed in Figure 2). Notably, there has been a year-on-year increase in the proportion of candidates achieving this 5-pass benchmark since the introduction of the GCSE in 1988, exceeding 80% in 2011/12. Although outside

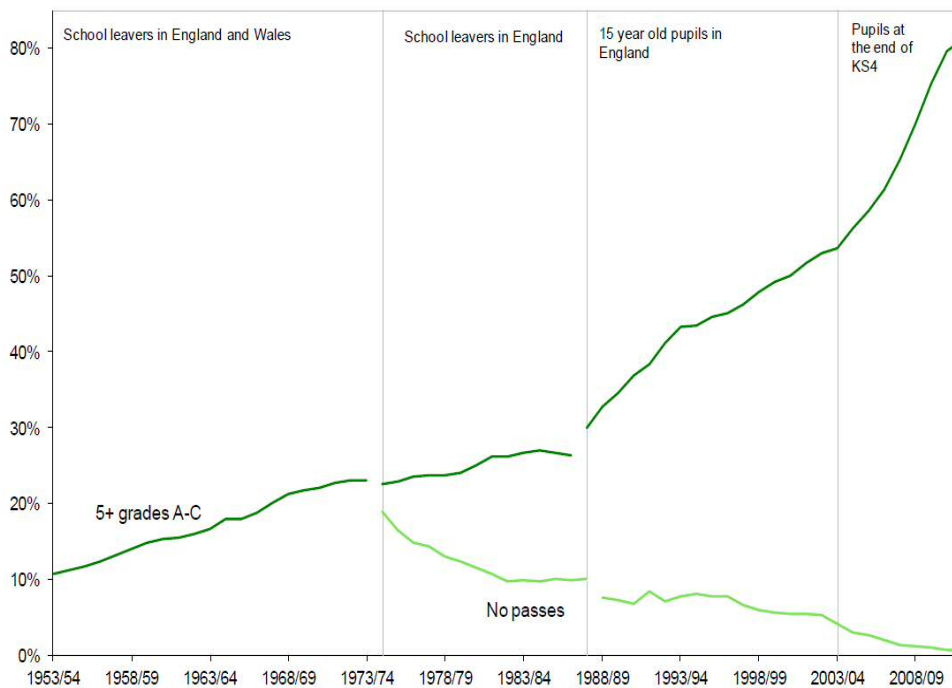


Figure 2: Achievement of O levels/GCSEs (taken from Bolton, 2012)

the remit of this thesis, it is worth noting that issues of comparability and claims of falling standards which accompany such increases in attainment are prevalent and persistent in the public discourse.

Not only was the school leaving age being incrementally raised over time, we can see from Figure 3 (taken from Bolton, 2012) that students have also tended to be more likely to stay in post-compulsory education over time. It is worth noting that in its introduction, the GCE O level could only be sat by those students who had turned 16, which may explain some of the early retention in lower secondary (the dark green line). What the graph does demonstrate is a less steady but significant rise in participation rates in this time period. By the end of 2011, 86% of 16 year-olds and 76% of 17 year olds were thought to be in full-time education in England (Department for Education [DfE], 2013). Figures from the Department of Education (2017) show that in 2013 following

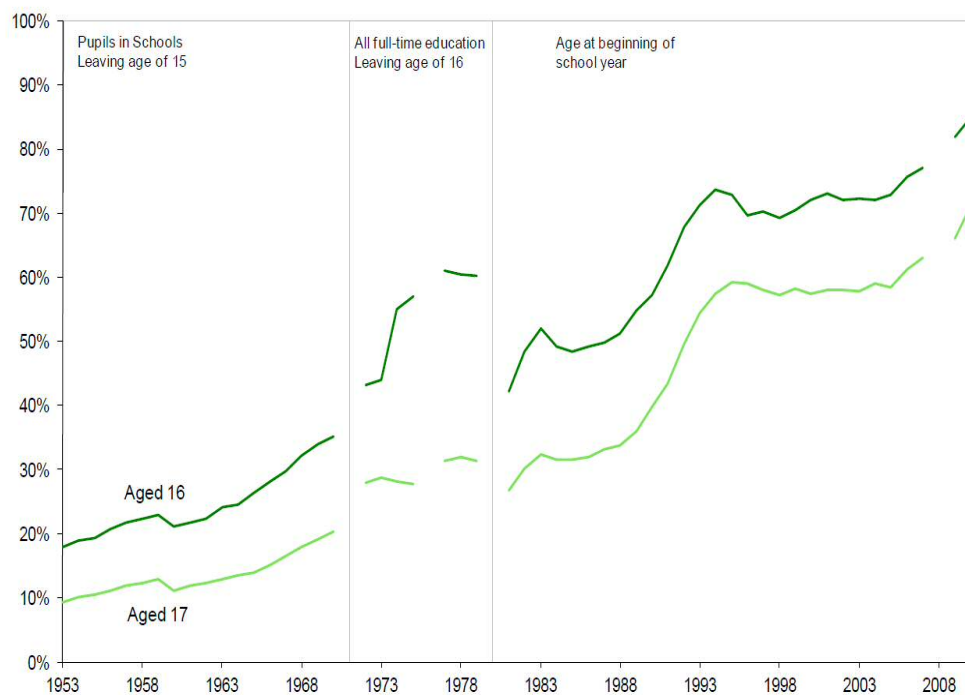


Figure 3: Pupils in full-time education beyond the leaving age (taken from Bolton, 2012)

Key Stage 4 (i.e. at 16 years old) 90% of state-funded secondary school-leavers, entered a 'sustained education destination', with 45% going on to study an AS level 3 qualification the next school year. With the most recent round of reforms in England effectively raising the school-leaving age yet again, these participation rates may well be shown to increase further.

Although ostensibly a more inclusive system in its inception, in the early days of introduction the GCE was predominately the reserve of the middle classes, as had been the School Certificates and Locals that preceded it (Rothblatt, 2007). Who had access to these examinations began to broaden out with the adoption of the examination by Secondary Modern Schools (something which was less than straightforward, as detailed in Brooks, 2008). In terms of purpose, rather than a school leaving certificate as such, the GCE was designed to indicate (through certification) student proficiency in individual subjects

(Willis, 2013). As with many of the examinations that had preceded it, how the qualification was viewed and used by stakeholders within the system departed from this narrow definition. Just as the HSC had been, one of the roles played by the A level was its importance in progression to university. The introduction of specialism obviously deviated from the demonstration of broad (some might argue 'rounded') academic knowledge that the HSC had provided. Universities surmounted this challenge in the Mountford Concordat (1949) in which it was agreed that matriculation could be achieved by four to five GCE passes, two of which needed to be at A level. In something of a retention of the breadth of the previous examinations, mathematics, a science subject, English language and a language other than English were all required at its inception. These stipulations were relaxed and began to diverge from one another from 1955, at which point universities could set their own requirements (Willis, 2013).

It is important to note that the universities were still heavily involved with the examination at this stage. Indeed, it was not until the introduction of the General Certificate of Secondary Education (GCSE) in 1988, and resulting administrative separation from the GCE A level, that they began to lose their hold over the examination.²¹ Over time, their dominance of the examining organisations weakened, with withdrawal from governance and acquisition by

²¹ The GCSE saw the combining of the GCE O level with the Certificate of Secondary Education (CSE); the latter aimed at a lower academic standard and including vocational subjects. Although not discussed in great detail here, there have been efforts over the years to create parity between vocational and academic qualifications of which the creation of the GCSE is some part of.

different organisations (notably, Pearson's acquisition of the forerunner to Edexcel in 2002). To the extent that universities withdrew from the running of examinations, statutory (SCAA, QCA) and, later, independent (Ofqual) regulators were able to exercise greater influence, offering guidance and prescribing regulation of the specifications (syllabuses) and assessment practices of the examinations. Greater centralisation came with the government response to the Dearing Report (1996) which saw the A levels brought in to the National Qualifications Framework (DfEE, 1997). Notably, the Dearing Report also recommended that the GCSEs be reformed so that teachers played a more prominent role in the assessment of their pupils at this age, echoing recommendations made by the Norwood Report (1947). Similar to these earlier recommendations, this was not taken up. As with other internal assessment practices, the reliability and credibility of teachers to mark their own students was questioned, in no small part thanks to the use of pupil performance for accountability purposes.

Just as they could decide what was deemed suitable, individual universities could also decide what was not suitable for matriculation purposes. Over time, subjects excluded from matriculation included the 'new' specialist subjects which were introduced in the period after the creation of the GCE and which deviated from those subjects included in the HSC. These subjects included General Studies (which is still not widely accepted as counting towards entry by the more elite universities) and, notably for the current work, the Associated Examining Board's Sociology (more on this in the following section). Although there had always been issues of comparability, reliability and

equivalency between and across examining boards and their examiners, time period, and type of exam, this refusal to accept some subjects ostensibly examined at the same level as others raises questions of the equivalency between subjects.²² Many have questioned the viability of direct comparisons of subjects ('the myth of comparability' as Nuttall, 1976, termed it) and examinations, both practically, in the public domain (e.g. Wood, 1976), and in terms of the approaches used in comparability research, in the academic domain (e.g. Goldstein & Creswell, 1996). As noted above, since the relaxation of the Mountford Concordant, universities were at liberty to determine which A level subjects were required to enter degree study of subjects within their own institutions.

To a certain extent, the notion that some A level subjects were more suitable for progression and general admittance to HE than others has perpetuated (however explicit or implicit these assumptions were or are). Following the Russell Group's publication of facilitating and non-facilitating subjects, clear classification can be made, whereby English Literature, History, Modern Languages, Classical Language, Maths and Further Maths, Physics, Biology, Chemistry, and Geography are considered facilitating and all others non-facilitating. Notably, HEFCE data shows that the likelihood of progression to

²² See Newton *et al*, 2007, for a collection of papers which provide some examples of the techniques and the history of this area of investigation.

HE is smaller for those with non-facilitating subjects (of which sociology is one) than those with facilitating subjects (81% and 89% respectively in 2010-11).²³

The increased number of candidates sitting A levels (see above) stimulated demand for university places (Tattersall, 2007) which, along with the turn to specialism, created an 'artificial shortage' (Rothblatt, 2007). Rothblatt argues that where there had previously been spare capacity with general entry requirements, following specialisation, where each subject area from each university could specify their own entry requirements, the illusion of lack of capacity was instilled. Such was the demand and perceived shortage of spaces that the Robbins Report (1963) recommended the expansion of the HE system.

Although this history is not about the HE sector as such, polytechnics are important to this piece not only as sites of academic expansion but also the development of sociology (see next section). Prior to being awarded university status in 1992, the polytechnics were part of the public sector, funded and controlled by the LEAs (whilst universities were funded by the University Grants Committee), with degrees awarded via affiliation to a university or the Council for National Academic Awards. The differing sources of funds gives indication of the differing priorities of the two halves of this binary system: the teaching of polytechnics and the research of universities (Bathmaker, 2003). The 1988 Education Reform Act shifted funding from LEAs to the Polytechnics and Colleges Funding Council, with a new structure encouraging growth in this

²³ HEFCE make their data available on their website in an interactive manner. These statistics are based on their 'young participation' rates: <http://www.hefce.ac.uk/analysis/yp/ypalevel/subject/>

sector. University funding was also moved from University Grants Committee (UGC) to Universities Funding Council but the structure did not inspire the same sort of growth seen in the polytechnics with the former institutional type eager to protect research. It was this differing response and a desire to create competition in the sector that led to the 1992 Further and Higher Education Act which afforded the polytechnics (and larger higher education colleges) university status with full autonomy and the power to award their own degrees (Bathmaker, 2003; also leading to the creation of HEFCE).

The Dearing Report (1997) provided HE participation rate by percentage of the relevant age group (reproduced in Figure 4). Following Trow's (1973) definitions, the transition from an elite system (at participation levels of less than 15%) to a mass system (with participation between 15-40%) is clear. This massification of HE is such that the expansion appears destined to reach universality (participation over 40%).²⁴ Indeed, Figure 4 shows that participation rates have been increasing in recent years. In fact, since 2000 there has been an almost year on year increase (peaking in 2011-12, followed by a sharp fall the following year, no doubt inspired by the introduction of drastically increased tuition fees) with the current levels around 18% higher than they were in 2000, despite a dip (of -2%) in the 18 year-old population.

²⁴ Interestingly, Brown and Lauder (1995; cited in Bathmaker, 2003) suggest that at least 80% of the population is capable of successful HE study, if participation was actually universal.

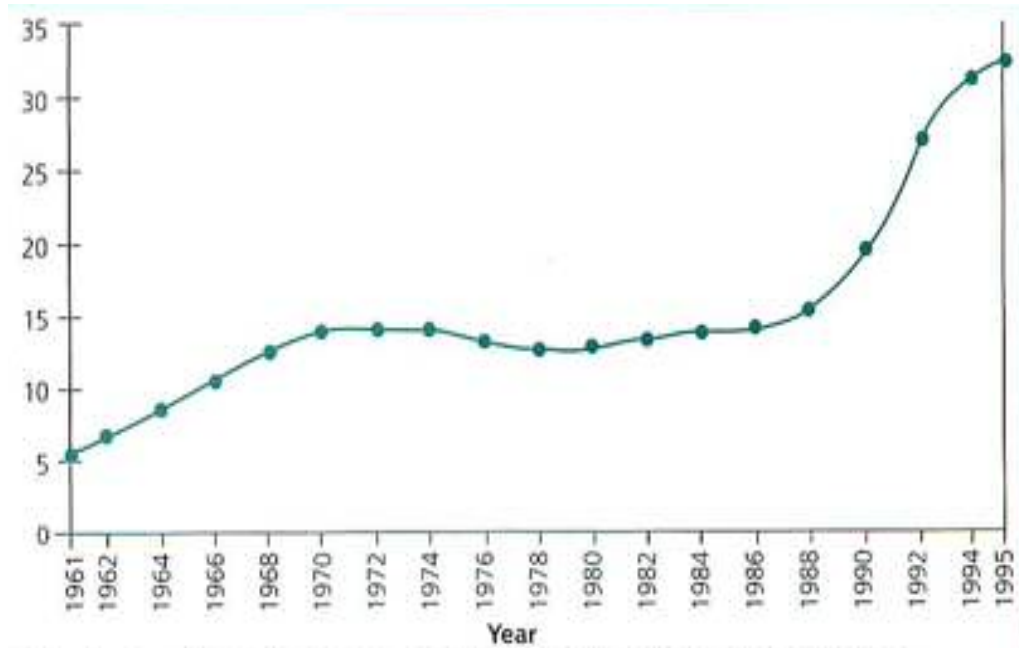


Figure 4: 'Young participation' trends, 1961 – 1995. Higher education age participation index (taken from Dearing, 1997)

The pattern shown in the Dearing graph (Figure 4) demonstrates a similar pattern to that seen in Figure 2, with the percentages of HE participation matching the percentage achieving at least one pass at A level (reaffirming the qualifications key purpose and role in matriculation). Although not the only route into HE, for those who achieve three A levels, 'young participation' (i.e. entry to HE in the two years after attainment of level 3) rates have remained consistently high over recent years (between 2005/06 and 2012/13) at 85% (see Figure 5; HEFCE, 2015). Indeed, Cambridge Assessment (2016) demonstrate in Figure 6 that the majority of all level 3 completers go on to full time education, with the majority of this study taking place in an HEI.²⁵

²⁵ Department for Education (2016) Improvements to destinations of key stage 5 students: time series. Official Statistics. <https://www.gov.uk/government/statistics/improvements-to-destinations-of-key-stage-5-students-time-series>.

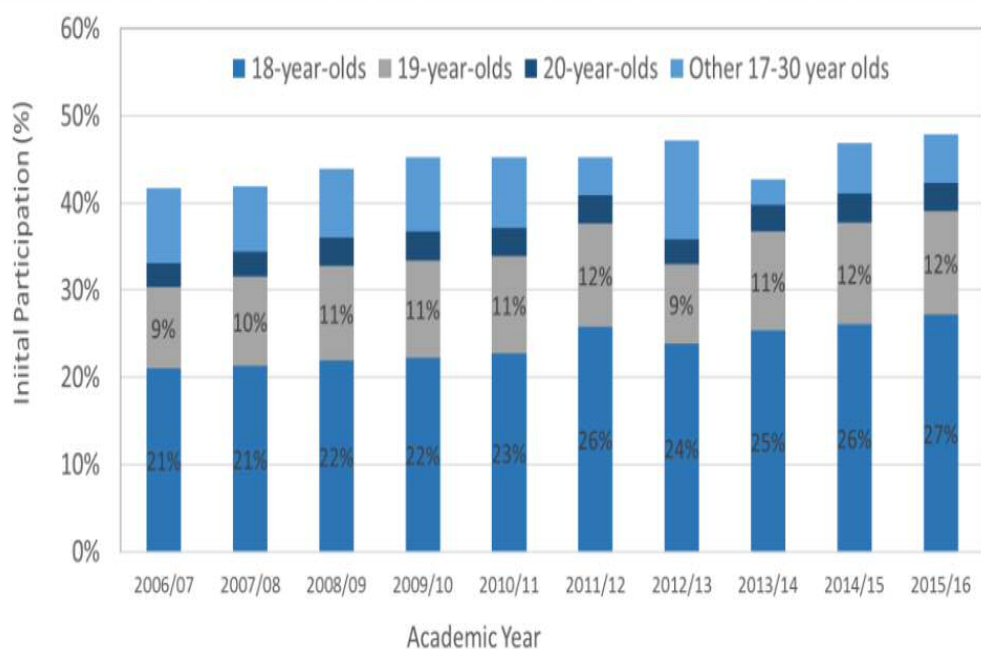


Figure 5: 'Young participation' rates 2005-2015 (taken from HEFCE, 2015)

Interestingly, the report also draws attention to the top of the graph, noting that: 'Although roughly 60% of students from independent schools and state-funded schools go on to higher education, a significantly higher proportion from independent schools go to the top third of HEIs [defined by Department of Business Innovation and Skills as the top third of institutes, when comparing mean UCAS tariff scores] (49% compared to 26%)'.

Whilst the age 16 exams have undergone a slew of reform since the introduction of the GCE O level in 1951 (including the introduction of the CSE in the 1960s and the amalgamation into the GCSE in 1988²⁶) the same cannot really be claimed of the A level examination. Serious concerns were raised in the 1980s, following changes to curricula and the grading system. Lawton

²⁶ On recommendation of Waddell Report (DES, 1978) for a single system consisting of 20 main subjects.

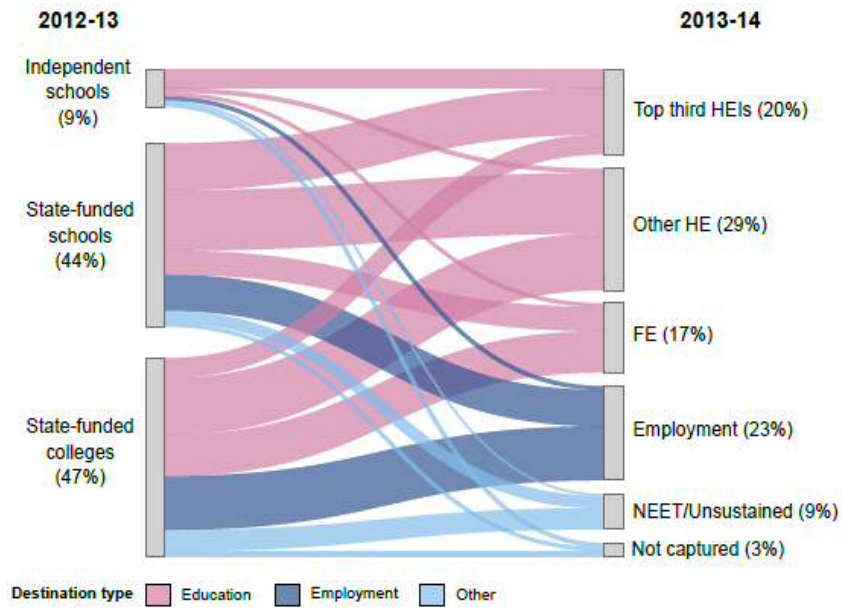


Figure 6: Level 3 completer destinations (Cambridge Assessment, 2016)

(1996) argues that A levels were seen as part of a ‘failure system’ (p.226) which had led to over-specialisation and exacerbated the segregation of vocational and academic. Whilst multiple attempts to broaden and balance the curriculum, particularly by the Schools Council for Curriculum and Examinations (established in 1964) in 1966, 1973 and 1980, had been made prior to this. All had failed. Much of the argument for resisting change seems rooted in the governing establishment’s conviction that A levels represented the ‘gold standard’. Indeed, following the ‘crisis’ of the 1980s, then prime minister Margaret Thatcher reiterated her support of the A level system (in response to a Parliamentary Question as Prime Minister, October 1990) and in November 1991 ‘Kenneth Clarke promised the House of Commons that A-Levels would remain the gold standard’ (as reported in Lawton, p.230). This conviction has created a stumbling block in terms of the parity of vocational pathways and has been criticised by many. As Sir Geoffrey Holland (quoted in

the Times Educational Supplement, 17 March 1995; cited in Tattersall, 2007, p.78), former Permanent Secretary at the Department of Employment, observed in 1995:

‘A levels, far from being the gold standard that ministers and a lot of other people think they are, are in fact an altar on which have been sacrificed the enthusiasm and the hopes and, indeed, many of the capabilities of about half of our young people.’

The introduction of the Advanced Supplementary (AS) syllabuses, was an attempt to broaden the 16-19 curriculum (DES, 1986). Similar to the Advanced Subsidiary courses of Curriculum 2000, these qualifications consisted of half the content and were worth half the marks of an A level (although at the same standard, whilst the former has been accused of being pitched at a lower standard; e.g. Willis: ‘The AS covered the less demanding content of an A level course’, p.150). Relatively few students took the extra examination, with approximately 50,000 entries compared to over 700,000 for A level in 1995 (six years after introduction; Higham, 1996). The lack of take-up was blamed on the perception that the workload was disproportionately high, coupled with the reluctance of HEIs to accept them for matriculation purposes (The Further Education Council, 1994). The role and reform of Advanced Subsidiary courses are discussed in Chapter 4 but it is interesting to note here that post-reform they more resemble the original Advanced Supplementary as stand-alone courses. Not ignoring the re-specification of the 1980s, Curriculum 2000 was

the first substantial restructuring of the GCE system since its inception. Its introduction sent the qualification into something of a 'crisis', shaking public confidence in the system (Tattersall, 2007), whilst still falling short of calls to broaden the curriculum through baccalaureate style systems (see Institute for Policy Research's recommendation in 1990 for an example of this).

In an echo of concerns about the examinations that came before it, the debate around the GCEs also turned to the purposes of general education in a broader sense, with a notable speech by then Prime Minister Jim Callaghan at Ruskin College, Oxford, in 1976 raising questions about the suitability of education in providing the appropriate skills for the workplace (industry), as well as basic literacy and numeracy skills (concerns later echoed in a speech to mark the twentieth anniversary of Callaghan's by then Labour leader, Tony Blair). These concerns continue to reverberate, with conceptions of the general purpose of the education system relative to the position from which it is viewed. Notably for the current study, is the long-standing concern of the level of numeracy evident in students and school leavers (see Chapter 1).

2.3 The development of Sociology

The previous section gave a historical account of the development of the A level which raised several points pertinent to the current study (including the almost concurrent massification of A levels and HE). Attention is now turned to what was happening in British sociology whilst these developments were taking place. Rather than a history of British sociological research as such, the focus here is on taught sociology. Much as Halsey's disclaimer at the beginning

of his informative (if LSE-centred) history of sociology in Britain, the brief history presented here is 'artificially confined in time and space' (Halsey, 2004, p.4). My concern is to present the context and history of taught sociology in Britain, making links to the wider educational environment (as presented in the previous section) and connections to the relative position and diversity which characterise the discipline. Along with the relative newness of both the subject and discipline, the first half of this section also highlights the importance of the location of the development of sociology, and links to the position it was later afforded. The distinction between subject and discipline is an important one here and is further explored in Chapter 5. As Osborne, Rose and Savage (2008) outline in their introduction to *The Sociological Review's* special issue, 'Reinscribing British sociology', this historical account is not given as a celebration or critique, nor as a pre-determination of how sociology might be. Rather, it is offered as a way of providing insight into the position of the subject and the apparent preoccupation with epistemology. Following the brief history of the establishment and expansion of taught sociology in the UK, attention is turned to the teaching of sociology. Particular attention is paid to the teaching of sociology within secondary education. With little research coming out of the UK, much of this literature comes out of the United States, where it has a relatively substantial history as a high-school subject (see DeCesare, 2005a, as well as elsewhere). Many of the issues of curriculum design wherever the subject is found (in terms of country or level of education) revolve around discussion of the discipline's contested 'core'.

2.3.1 The development of the discipline and subject

The development of sociology in 20th century Britain is, to a certain extent, a story of two halves, with a pivotal juncture mid-way through the century (in much the same way as the previous section). Whilst the first chair of sociology was established in 1907 at the London School of Economics (LSE; the social science institution within London University), it was not until the 1950s and 1960s that sociology really expanded and began to take hold in the academic environment (see Halsey, 2004; Burawoy, 2016). Indeed, Bulmer (1985) goes as far as to describe the discipline's growth before 1945 as resembling that of a 'sickly infant' (p.14). This is not to say that sociology was not being taught in the first half of the 20th century but that the teaching which had occurred tended to be confined to LSE (or to those institutions in which students could study the LSE syllabus to be awarded a London External Degree²⁷) or constituted part of the professional training of social workers and teachers or was taught as an aspect of other disciplines. Indeed, Halsey states that in this time period 'everything claimed for sociology was widely held to be covered already by history, anthropology, economics and political science' (p.51). This notion resurfaced both in the early non-specialist membership practices of the BSA (Platt, 2002) and the later reliance on members from other departments (including social policy) for teaching (Halsey, 2004; with reference to the 1970s). Indeed, social policy appears to have been establishing itself in its own right around this time.

²⁷ Southampton, Nottingham, Leicester, Exeter, Hull.

The 1970s also saw social problems 'increasingly tackled by interdisciplinary teams' who were unlikely and perhaps unwilling to call themselves sociologists. That the boundaries of sociology were and are ill-defined has been borne out in the development and character of the discipline, as well as its struggle to claim a foothold in the early half of the last century. This diversity within the discipline has led to a wealth of debate about what does and should constitute sociology's 'core' (discussed in more detail, with reference to curriculum design, below).

That the discipline really came into its own in the mid-1900s owes much to the expansion of HE in the 1950s and 1960s.²⁸ This time period saw the establishment of twenty-eight new university departments (Platt, 2003), rising to 35 by 1975 (Halsey, 2004). By 2008, this appears to have almost doubled, with single-honours sociology undergraduate courses being offered in 67 institutions (Wakeling, 2008). The 1960s also saw an increase from 2 to 23 chairs of sociology in just two years between 1963 and 1965 (mainly in already established departments; Stewart, 1989) increasing to over 200 by the year 2000. Reflecting upon the expansion of the sector, Platt (2000) notes how graduation from sociology rose 'dramatically' through the 1960s up until the mid-1970s, where there was a sharp fall and recovery, to be followed by an 'extremely' sharp fall in the mid-1980s from which 'recovery' has been slow. Part of this picture may reflect the inclusion of post-graduates, whose patterns

²⁸Including the awarding of charters to 10 of the 11 Colleges of Advanced Technology, following the Robbins Report, offering subject teaching and non-specialist programmes in sociology amongst other subjects (Stewart, 1989). Sociology was also taught at the Open University.

can be more or less stable depending on funding arrangements. If we concentrate on undergraduates we see very small numbers of university undergraduate students pre-1960s, rising to around 2,000 in the mid-1960s, with a steady rise dipping in the 1990s, followed by a steep rise following the awarding of university status to polytechnics (Halsey, 2004). Over a decade after the conversion of polytechnics to universities, data from HEFCE reveals that sociology has been one of the most popular (and at times the most popular) social science of recent times, with growth in numbers coinciding with growth in the sector (see Figure 7).

The rapid establishment and expansion of the discipline in HE saw an increased uptake of social science degrees, over and above that which was witnessed in the sciences and applied sciences. Indeed, Stewart (1989) reports on the UGC returns for both undergraduates and postgraduates for which social sciences saw a 181% and 149% rise, respectively, over the period from 1961-1966. Over the same time period, the pure and applied sciences saw a 53% and 120% return at undergraduate, with 61% and 94% at postgraduate, respectively. There is a clear difference in trajectory between the subject areas during this period, which had levelled out again by the end of the 1970s. Of the social sciences, Stuart (1989) shows that sociology was more popular than other disciplines within this subject area between 1966 and 1978 but notes that this popularity began to wane in the 1980s. More recently, using data from the Universities and Colleges Admissions Services (UCAS), Wakeling (2008) has shown that Sociology was consistently more popular amongst applicants than

Human Geography, Social Policy and Anthropology but less popular than Economics and Politics.

A concern of many is the 'quality' of students entering onto these undergraduate courses. How one judges the calibre of students is contentious although is often based on prior average performance, rather than the suitability of their previous qualifications in preparing them for HE study (although this, in itself, is also an area of concern). Along these lines, Leslie (2003) ranked the quality of students of specific subjects based on their application qualifications, placing sociology 115th of 170. However, Wakeling (2008) used UCAS tariff scores to demonstrate that Sociology applicants are 'reasonably well qualified when measured against the average' (p.23). When compared with the rest of the social science subject group subjects, Wakeling found that Sociology applicants were generally less well-qualified than other subjects in their group (Anthropology, Economics, Human Geography, Politics but not Social Policy and Education). These averages mask the differences between different institutions: higher entry requirements are demanded of students applying to the high-performing research-led institutions, with lower requirements for those institutions with a teaching focus.²⁹ Although not explicit nor absolute, these map onto the pre- and post-1992 institutions respectively.

The post-1992s (the polytechnics, as they were then) played an important role in the development of the subject and discipline. Although some of the

²⁹ LSE and Edinburgh require Mathematics GCSE at grade C and above, for example.

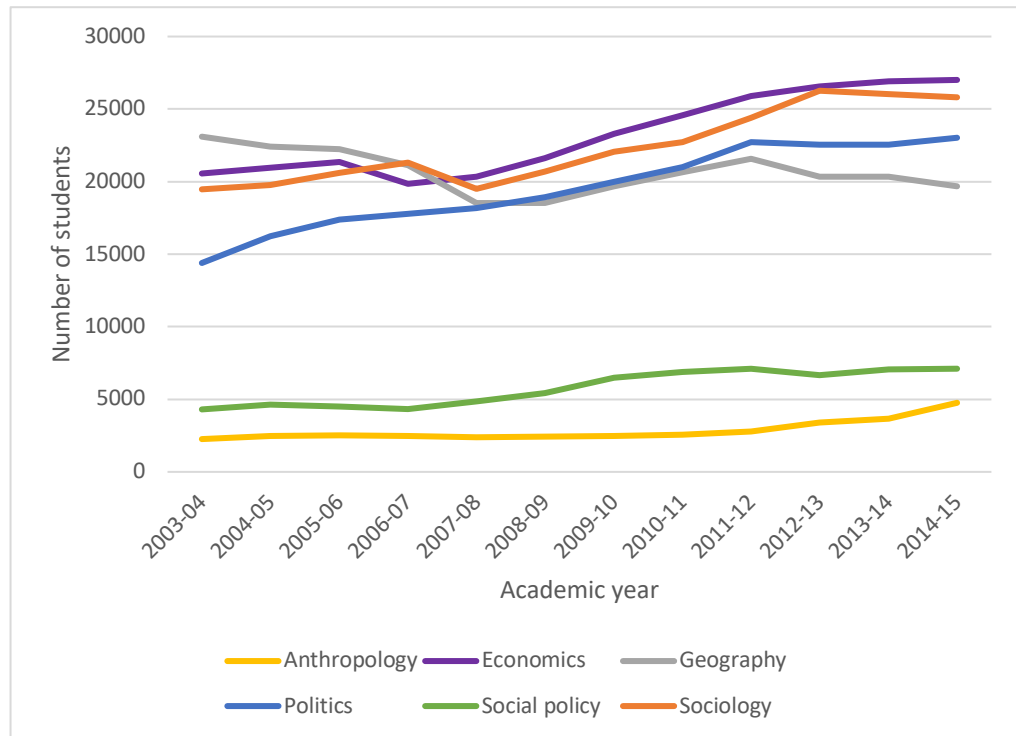


Figure 7: Number of first degree enrolments by subject (2003-2015)

expansion mentioned earlier was happening within the universities, it was the location of the new sociology departments in the new HEIs, with their teaching mission, that massively contributed to the expansion and development of taught sociology. During the 1960s and responding to student demand, the polytechnics began to develop courses in the social sciences (outside of their proposed vocational orientation; Platt, 2002). Although often overlooked in historical accounts of the development of the discipline in Britain (Platt, 2003), it was within these institutions which many researchers, teachers and students of sociology were found. As early as 1974, more teachers of sociology existed in polytechnics than universities (Platt, 2002, 2003). By the mid-1980s between a third to a half of the British Sociological Association membership (itself established in 1951) could be found within polytechnics. In terms of

students, Halsey (2004) notes that around the time that polytechnics became universities (i.e. circa-1992) there were more sociology students in them than there were in the established universities (14,824 compared to 9,256). The expansion of the HE system necessarily allowed and led to diversification of sociology syllabuses. This was particularly noticeable in institutions which had formerly followed the LSE syllabus towards the awarding of an external degree (Southampton, Nottingham, Leicester, Exeter and Hull), where syllabuses took on characters which reflected the strengths of the individual institutions (e.g. Halsey, 2004, cites the influence of anthropology in Hull and social psychology in Nottingham).

As well as the influence of the strengths of their own departments, the rapid expansion created a demand for teaching staff which was difficult to meet with sociologically trained individuals, as Platt (2003) notes: 'it was simply impossible to fill many posts, especially senior ones, with people formally qualified in sociology'.³⁰ As a result, many of the staff filling the increasing number of positions (212 in 1938 to over 502 in 1976; Platt, 2000) were from other, related disciplines. This influx of staff from other disciplines was not a new development. Indeed, Halsey paints a picture of movement both in to and out of sociology even before this expansion (going as far back to the early days of the institutionalisation of the discipline, referring to those who were key in its foundation as either 'wealthy amateurs with careers elsewhere,

³⁰ Or at least candidates who wanted to pursue an academic career. Platt (2002) gives an interesting account of the position of women in terms of this academic labour force, with female sociology graduates much more likely to go into school teaching or social work than academia, if they entered the workforce at all.

academic deviants, or very old men', p.51³¹) and Platt (2002) notes that the professors of the early 20th century tended to have their roots in philosophy. Stewart (1989) notes the 'scepticism' (p.180) that the establishment held towards the development of sociology in the polytechnics. Partly this was a reaction to what was considered a hasty expansion of staff and students, as well as an uncomfortableness between the 'old' sociology of the existing academics and the 'new' sociology developing amongst the new staff. Just as staff were moving in to the discipline in this period, older staff were moving out and over to the more established/stable social sciences such as economics, geography, social philosophy, psychology, and social anthropology (Stewart, 1989). Doing nothing to abate the general scepticism was the location of the bulk of the expansion and the fact that degree teachers within polytechnics tended to have lower qualifications than those in universities (with sociology no exception; Platt, 2003).

It is worth pausing here to consider the importance that the expansion of university status had in strengthening the position of sociology. Throughout the late 1970s and 1980s the discipline had come under attack, as had the social sciences more broadly. According to Eldridge (1990), there was open hostility from the incoming Conservative government of 1979, no doubt fuelled by the 'Gould Report' published two years earlier (Gould, 1977). In his report for the Institute for the Study of Conflict, Professor Julius Gould (himself a sociologist) warned of the threat posed to HE by the discipline due to 'Marxist

³¹ See Abrams (1968).

infiltration' (Halsey, 2004). Not only did this lead to concern voiced in the national press (as noted by Platt, 2002), it supported the incoming government's concerns over the left-leaning nature of the discipline. Secretary of State for Education and Science (1981-1968), Sir Keith Joseph's contempt for the social sciences was made public following the leaking of letters between himself and Sir Geoffrey Howe. For these men, closure of the Social Science Research Council (SSRC) would have been the optimal outcome of the Rothschild Inquiry (1982). Although this was not fulfilled, Sir Joseph was successful in rebranding the SSRC the ESRC, with notable omission in the latter of reference to 'science'. This level of involvement in the funding councils exemplifies the shift in governance of parliament towards a more directive than regulatory role (a claim echoed by Eldridge with regard to the late 1980s).

In terms of school-level sociology, whilst the Sociology GCE was only introduced in 1964/65, 'social studies' had been being taught in schools prior to this. Whilst social studies drew, to a greater or lesser extent, from various social science disciplines, it was not a specialist course nor was it particularly well-defined. Lacking the interdisciplinarity of the social studies of the American school system (Bretsch, 1974), the subject did draw on a variety of the social sciences (including geography, history, and sociology³²) but was interpreted and delivered in different ways by different teachers (as was also the case in Scotland; Wallace, 1954). What united these interpretations were

³² Amongst others. The 'New Social Studies' which concerned Lawton & Dufour's 1973 handbook includes an introduction to what they consider to be the relevant disciplines: sociology, anthropology, political science, economics, psychology (including but, not limited to, social psychology), history and geography.

the aims of the subject and the notion of citizenship education. In the early part of the 20th century this was inspired by the 1926 Hadow Report's recommendation on the 'general character' of education, later emphasis turned to 'world citizenship' in the aftermath of the second world war (e.g. Brimble & May, 1943; Hemming, 1949). Although the turn to specialisation marked a decline (Cannon, 1964; Lawton & Dufour, 1973) and eventual extinction of social studies, later developments saw citizenship (re)introduced as part of the National Curriculum in 2002, following the Crick Report (1998), along with the development of GCSE and A level examinations which concern the 'relationship between the individual, the law and the state, and the nature of identities'. Leighton (2002) questioned the impact that this introduction may have had on uptake of sociology A level, 'having had some taste of related topics', although this potential effect is not borne out in any particular change in the subsequent number of candidates.

The turn to specialisation with the introduction of the GCE in 1951, coupled with the expansion of sociology throughout the 1950s and 1960s, and somewhat aided by the dissatisfaction of the social studies curriculum, led to calls for sociology to be introduced as a specialist subject in the 1960s. Reviews of the social studies curriculum and a call for a new approach were made most convincing by Cannon (1964) and work by Denis Lawton (e.g. Lawton, 1968; and with Dufour, 1973). This 'new social studies' was a step towards the teaching of social *science*, drawing heavily on sociology. McNeill (1982) also cites Cotgrove & Friend (1965) and Hurd (1965) as advocates for the subject. Interestingly, Cotgrove went on to be Chief Examiner for the Associated

Examining Board (AEB; whose syllabus which was introduced in 1964/65) literally writing the textbook (entitled 'The Science of Society' and first published in 1967). Hurd (1965), drawing on the struggle faced by the natural sciences to get accepted into the traditionally conservative educational arena of schooling, noted that sociology's challenge was only just beginning with this introduction. Oxford joined the AEB with the introduction of a GCE A level in Sociology in 1965, followed by other examining boards so that by 1982 the qualification was offered by five boards.³³ Sociology has become increasingly popular, in terms of both the overall numbers of candidates entering for the exam and the relative proportion of total entries. In 1977, 15,796 candidates entered for the examination, 2.8% of the total number of entries. Whilst numbers of entrants for Sociology A level had doubled by 2015, there was a much more modest increase in proportion, with Sociology making up just 3.8% of entries. Whilst this increase in proportion is modest, Sociology is one of the ten most popular A level subjects in terms of entries (and has remained at this level since at least 2006; see Figure 8³⁴). This is no mean feat given the number of A level subjects available (over 50, across the examination boards, at the time of writing) and the lack of universal availability of the subject (see Chapter 6 for details about the varying availability of the subject across institutions).

³³ These boards were the AEB, JMB, Oxford, Cambridge and London. With the rationalization of the number of examining boards (Tattersall, 2007) by the year 2000 these had been succeeded by AQA (AEB & JMB), OCR (Oxford & Cambridge), and Edexcel (London). At the time of the current research, only AQA and OCR (with the addition of WJEC) offered the qualification.

³⁴ Created using Joint Council for Qualifications data available at <https://www.jcq.org.uk/examination-results/a-levels>

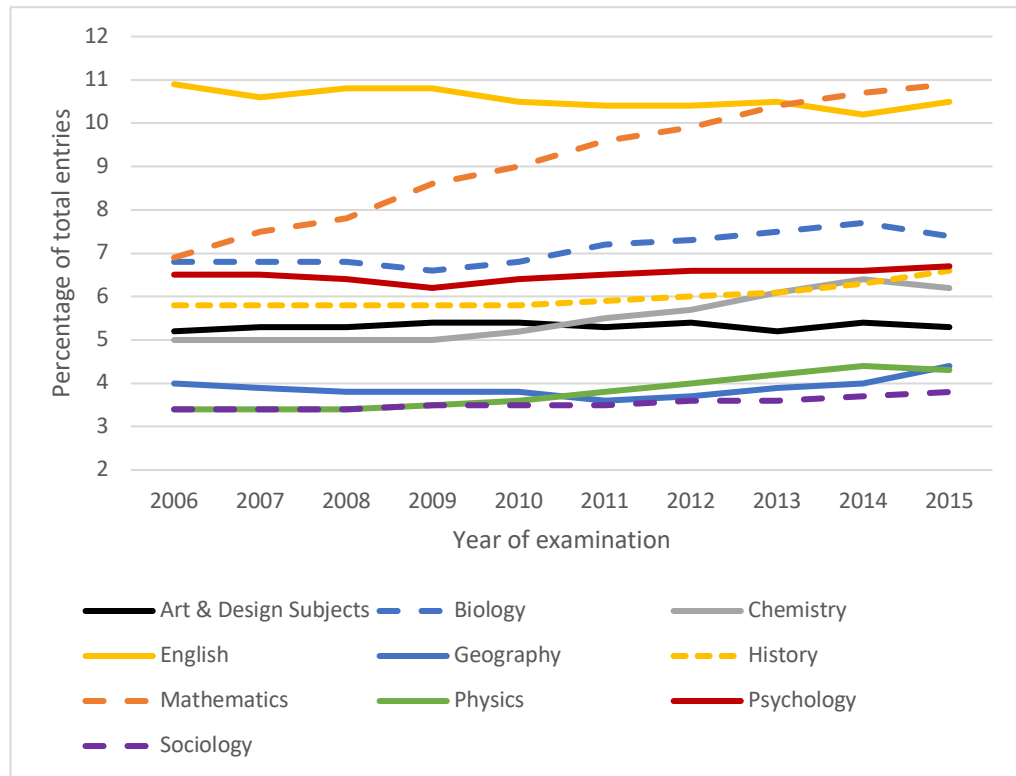


Figure 8: Top 10 A level subjects as a percentage of total exam entries

Part of the initial rise in uptake of the subject appears to be linked to Sociology's role in vocational training. Although not the focus of this piece, another location in which taught sociology could be found during this period was in vocational education, particularly the training of teachers and social workers (see Furlong, 2013, for education). Although we have seen entries to A levels as a whole increasing over the same time period, Stewart (1989) attributes rises in Sociology A level in the 1970s, at least in part, to the increase in demand for trained social workers following the Local Authority Services Act (1970; itself a product of the recommendations of the Seebohm Report, 1968). There is some evidence that some of those who took the A level proceeded into undergraduate study of sociology. Stewart (citing Smith, 1982) notes that two years after the introduction of the GCE A level (in 1966) 863 A level

completers embarked on university courses in sociology. The Sociology A level was by no means a direct pipeline into undergraduate sociology, but it clearly did, and still does, play a role in preparing students for further study of the subject (undergraduate sociology is the most common destination of Sociology A level completers³⁵). Indeed, McNeill (1982) goes as far to say that secondary school (and further education) teachers have a role in supporting HE 'by ensuring a continuing supply of well-taught, well-qualified and motivated applicants for sociology degrees.' (p.6).

McNeill was writing at a time when school sociology was 'coming of age' (to use his phrase). However, sociology had been facing (and continued to face) the challenges that Hurd (1965) had warned of. Some of this concern was about the very nature of sociology as 'dangerously subversive' (Benthall, 1977) with its links to a liberal and, potentially radical, education. Whilst a lot of the literature on this matter concerned HE education, Vulliamy (1973; writing about the social studies equivalent, 'liberal studies' in technical college) offers some insight into how this might be achieved in institutions outside of this arena. His comments on the purpose of such education reveal where concerns of radicalism stem:

'the object is to make students think critically... it is only when a student can place commonly held assumptions in a sociological context that alternative social structures and assumption become possible. We can then create the potential

³⁵ At 12%, see Chapter 6.

for what Freire calls, “education as a practice of freedom” – where we are developing in our students a permanently critical approach to “reality” (cited in McNeill, 1982, p.3)

The extent to which this was generally considered to be the purpose of an A level Sociology education is discussed in the following sub-section. Outside of the school environment, there was evident scepticism about suitability of the A level in preparing students for university. Tattersall (2007) claims that AEB’s Sociology was not accepted for matriculation purposes by some universities at first. However, by the early-1980s (Neville, 1982) a common approach by the universities and polytechnics appeared to be in place whereby it was accepted by most for courses where there were not other specified requirements. Sociology A level does not appear to have ever been a specified requirement for entry on to any courses, something which remains true today.³⁶

Part of the initial concerns surrounding the introduction of the A level centred on the nature of sociology in the universities and the extent to which the A level was representative of this. Some considered the subject to be too complex for students (e.g. McArthur, 1969). Others worried that the GCE was ‘oversimplified and distorted’ (McNeill, 1982, giving the examples of Nichols, 1969; Abrams, 1971; Shipman, 1975; McRae, 1976; Fletcher, 1978). To an extent the former is true of all subjects (as Bernstein would attest) but may have been particularly problematic for sociology which was itself experiencing

³⁶ Note classification by the Russell Group (2016) of Sociology as a non-facilitating subject.

a growth and diversification not seen in longer established disciplines. An academic subject gains its legitimacy to the extent that it represents the discipline and, potentially as a way of ensuring this, the syllabuses tended to develop what Gomm & McNeill (1982) refer to as a multi-perspectival approach, which necessarily focussed on issues of epistemology, leading to the syllabuses 'overaccentuating the differences between different styles of sociology' (p.7). These concerns spiked the interest of the British Sociological Association, and specifically the Teachers Section, which had been closed to those outside of 'professional' sociology (that is those that held a university sociology position, although they need not have had formal training in the discipline; Platt, 2003). Minded by their concern with maintaining the 'professional integrity' of the discipline (Macdonald, 1974; cited in Platt, 2002), the BSA began to get involved with sociology education outside of universities. A panel to advise on sociology curricula (including but not limited to schools) was established, with continuing regular connection to the examining bodies from this point (Platt, 2003).³⁷ Clearly, the increasing number of sociology graduates increased the potential number of sociology school teachers, although this has never appeared to have been thought a necessary pre-requisite to teaching the subject in school (or indeed elsewhere, given the aforementioned influx of teachers trained in other disciplines during the HE expansion). In 1968, at a time when two boards offered the A level

³⁷ With temporary cessation of duties to the ATSS in 1976 (Platt, 2003).

qualification, a special subcommittee was established to consider the lack of training for social science school teachers (Platt, 2002).

Alongside the BSA's increased interest in the teaching of sociology outside of HE, several organisations representing those teaching in these educational institutions established themselves: the Sociologists in Polytechnics (SIP; established 1973), the Association of Teachers in Colleges and Departments of Education (ATCDE, established in 1965), and the Association for the Teaching of the Social Sciences (ATSS; established 1964). The ATSS represented practising school teachers, particularly non-specialists, teaching the new school level (O and A level) sociology in schools and technical colleges (Platt, 2003, citing Cannon, 1965). According to Platt (2003), the ATSS was primarily made up of teachers of A level Sociology, with functions including the promotion of social sciences in schools and the maintenance of standards therein.³⁸ The latter of these might be thought to be particularly important given the amount of non-specialist teaching which occurred, particularly within the interdisciplinary and distinct 'social studies'. Platt states that these courses led on to university work in sociology – but the extent to which that is still true is debatable. With a common concern in terms of the national examinations the ATSS and BSA appear to have had a fairly close working relationship throughout this time period until the later 1990s where, for some reason, 'pre-university issues had become less problematic' (Platt, 2003, p.152). However, it was again necessary for the BSA to comment on the

³⁸ As one might expect, rather than explicitly for sociology, the association had links to the 'new social studies' movement in its early years (Lawton & Dufour, 1973).

national exams (in terms of support for retention of the Sociology GCSE) in the most recent round of reforms of the lower secondary examinations.³⁹ The precarious position afforded to the subject is evident here, with the BSA essentially justifying retention of the subject in the secondary school offer (Mudd, 2015). Later, the ATTS was absorbed into the BSA (in 2012) as a special interest group. Named the 'BSA Teaching Group', this group is still dominated by teachers of A level Sociology (although the proportion of active sociology teachers that it represents is unclear).

2.3.2 Teaching sociology

Bringing these discussions up-to-date, it is notable that there is little recent literature concerning the teaching of sociology as a specialist subject in secondary schools in the UK. What does exist tends to sit outside of the peer-reviewed literature. Outside of articles written and published in *The Sociology Teacher Journal* (the BSA Teaching Group's magazine journal), that which exists tends to be specification-specific guidance produced by the examination boards to support delivery of their syllabuses. The scholarship of teaching and learning within sociology generally has a more established presence in the United States (see Howard, 2010), where the American Sociology Association's *Teaching Sociology* journal dominates the field. Within this US body of literature, there is some research concerning high-school sociology. Whilst this is also relatively sparse, the presence of sociology in American high schools has a relatively substantial past (see DeCesare, 2005a). There is also evidence

³⁹ Interestingly they were not cited as contributing to the most recent round of A level reforms but do still play an advisory role to the examining boards.

of relatively recent literature from outside the US (including the Netherlands: Meijs & Need, 2009; Argentina: Pereyra & Pontremoli, 2014; and Brazil: Lopes, 2011) and some from countries where the study of sociology as a stand-alone subject is compulsory for adolescents (including Greece: Kougioumoutzaki, 2007; and Croatia: Bošnjak, 2013).⁴⁰ Much of this literature is concerned with the curriculum of secondary school Sociology. Of particular interest is the literature which highlights the relative lack of input by HE in the school subject curriculum. Although it is not true to state that HE has no involvement in the development of school curricula in the UK, it is the case that after initial involvement in the establishment of the subject the BSA deemed this area to no longer be of concern (Platt, 2003). In addition to this, whilst the BSA are involved with the examination boards directly, there was no listed official response to the recent consultation concerning the most recent reforms of the A level system (see Chapter 4). Writing in reference to the situation in the Netherlands, Meijs & Need (2009) observe that those charged with this type of neglect, i.e. those teaching and researching in HEIs, tend more concerned with academic than policy or public sociology (the latter of which education in the subject could be considered; see Burawoy, 2005, 2016).

Burawoy's emphasis on public sociology, which captures within it taught sociology, was a response to the 'troubling doubts about the very nature and function of the discipline' (Osborne, Rose and Savage, 2008). Whilst there have

⁴⁰ Information on compulsory nature of the subject collected by the BSA into the prevalence of sociology in secondary schools across Europe, reported in *Network*, Autumn 2015: 'Sociology teaching survives in UK schools – but what about the rest of Europe?'

been many suggestions as to what the focus (in object, method, and purpose) of sociology should be, this ideal for neat definition, prompted by the 'messy' nature of the discipline, is not new nor limited to the UK. Neither, however is it the remit of this thesis as such. The definition of the discipline matters to the subject of sociology inasmuch as the core of the subject reflects the core of the discipline. Ballantine *et al.* (2016) helpfully define the core as the 'distinct disciplinary knowledge... [and] important learning goals', going on to suggest that for taught sociology three viewpoints exist: that of taught sociology as (1) having 'no core'; (2) concerning development of a 'habit of the mind'; and (3) consisting of 'defined essential elements'. Although discussing introductory sociology in the US, the discussion of the latter two of these is particularly pertinent to discussion of A level Sociology in England and Wales.⁴¹ Those who take the view of the first of these, the 'habit of the mind', regard the distinctiveness of sociology by the way in which the social world is viewed and analysed using a 'sociological perspective'. This 'habit of mind' has been termed differently by different researchers, perhaps most famously by Mills (1959) and his 'sociological imagination' (see Chapter 5 for more discussion of this, and with reference to current curriculum practice).

With regard to the situation in English and Welsh secondary schools, the controversial nature of teaching this type of thinking to students was made apparent with concerns over the introduction of sociology to the school

⁴¹ Ballantine *et al.* draw on the work of Keith & Ender (2004) who, through a survey of introductory textbooks, came to the conclusion that the apparent absence of a core 'reduces the social value of sociology as a scientific field and erodes its credibility as a discipline' (p.19).

curriculum (as discussed in the previous sub-section). Not only was the teaching of this 'habit of mind' questioned for its appropriateness through concerns of those suspicious of a liberal agenda within schooling, the discomforting nature of questioning the everyday and taken-for-granted, and the sophistication and complexity to demonstrate an understanding of this was thought by some to be too advanced for secondary and upper secondary students (e.g. McArthur, 1973). However, McNeill (1982) claims that some, if not all, students do achieve this through study of the Sociology A level and as early as 1967 examiners were reporting that they marked answers that were 'of final honours degree standard'. This may well have been true and may still be the case, but it is not true of all the papers received.

Although often suffering from a perception as an easy subject, with low status (see Bleazby, 2015, for an interesting account of subject hierarchy), it has been documented to suffer from relatively low pass rates and low proportions of A grades awarded. Before reform of the grading system in the 1980s, the results of 1977 show pass rates for sociology at 48.5% compared to an overall average of 67.9% and awarding of 'A' grades for just 3.32% of sociology papers compared with 8.4% overall. Notwithstanding the issues of comparability rife in such crude measures, we can take from this that it was less likely for students of sociology A level to achieve an A grade or even pass the subject than most other subjects. This suggests the concerns of McArthur and others like her may have been well-founded. Issues of hierarchy and attainment in the subject are discussed further in Chapter 6, bringing these considerations

up-to-date, alongside characteristics of the students and institutions where A level sociology is found.

Another issue of the teaching of 'habit of mind' relates to the location that such teaching is taking place in and the constraints placed upon teachers in a school environment. Whitty (1976), commenting on Vulliamy's (1973) call and promise about the power of teaching students to think in this mode of criticality, warned that 'constraints of timetables, examination syllabuses and unsympathetic colleagues' hindered such teaching.⁴² Interestingly, he was writing at a time where the syllabuses set by the examining boards were generally much less prescriptive than those found today (see Chapter 4 for details of modern-day Sociology A level examination syllabuses and practices). It is the content that lies within this written documentation that, to an extent, defines the latter of Ballantine *et al.*'s categories, 'defined essential elements'. Indeed, one can appreciate how any subject may be defined by the content therein. Attempts have been made to define this core content for Sociology, including D'Antonio (1983) and Howard *et al.* (2014). Interestingly, Howard *et al.* list four key areas which include the sociological perspective, akin to the 'habit of mind' that Ballantine *et al.* refer to (with the others being sociological theory, research methods, and key concepts). One can imagine that the 'multi-perspectival' approach taken by most of the early syllabuses addressed two of these key areas, sociological theory and research methods, particularly well

⁴² Whitty appears to have been generally skeptical of the new social studies movement, writing with Young (1975) to claim that rather than challenge particular views of the curriculum it was 'merely a cry that a particular commodity, social science knowledge, was not being effectively marketed in school'.

with their emphasis on the epistemology of the approaches. Rather than key concepts as such, topic areas are prescribed within which these concepts may be embedded by the teachers. This organisation around 'an archipelago of empirical questions' (Abbot, 2000) raises issues and concerns when it comes to defining a core for the discipline but does suggest that the syllabus was at least representative, in this organisational regard, of the discipline. What is and is not included in the syllabuses could be taken to represent what those designing the syllabuses understand and regard to be the core of the discipline. Therefore, the position taken by those in such a position determines how the discipline is represented, decontextualized and reproduced in the subject.

Although not as prescriptive as modern-day syllabuses (see Chapter 4 for details of these), the original syllabuses (and their successors of the 1980s) did have some assumptions and expectations of the activities involved in the teaching of the subject. Part of this expectation appears to be that research projects would be conducted by students as part of the two-year course. An example of this is provided in the AEB's 1967 and 1968 examination papers (cited in McArthur, 1973) which ask students to 'Give an account of any project you have undertaken as part of your studies...', although the type of studies conducted appears to have been at the discretion of the teachers and their students. Interestingly, Gomm (1982) notes that whilst questions on research methods had always been on the syllabus, teachers and students had been able to avoid it until introduction of the compulsory research methods question in then new AEB syllabus introduced in 1982. Gomm also notes that rather than knowing about practicalities and procedures, and experiencing this

for its own sake, the key engagement in research projects was to understand the reasoning behind the decisions made about procedure. In line with the multi-perspectival approach taken to the curriculum, attention was focused on the theoretical and epistemological reasoning behind the choice of method. As noted, this served to greater accentuate the differences between the approaches rather than represent the actual position of practicing sociologists (who, it is argued, take a less extreme position).⁴³

Whilst Ballantine *et al.*'s latter two viewpoints of the core of sociology could be considered as goals or learning outcomes for a given course, they do not capture the other outcome of a school education: that of a contribution to a 'core curriculum or general education's goals' (Howard, 2015, p.18). In the previous section it was described how social studies (and later citizenship) was considered desirable for inclusion in the school curriculum for these very reasons; rather than the acquisition of subject specific knowledge the desire was to impact students' overall development. These general educational goals could be considered in terms of the original purposes and uses of the A levels and examinations that came before them (see Section 2.2). Certainly, there was the desire to educate and develop active citizens, but these examinations have also always appeared to be minded to the needs of the professions and HE. In terms of the professions and vocational education, it has been noted

⁴³ That is not to say that such divisions do not exist, the disagreements between differing approaches have been commented on by many and are referred to throughout this thesis. Rather than the simple quantitative-qualitative division which is so oft presented, this multi-perspectival approach, although accentuating difference in one respect, may have the potential to provide more nuance to the discussion than the simple binary.

that sociology played a large role in the training of teachers, and indeed the A level itself appears to have been taken by those seeking employment in the social work sector (see Stewart's claims above). As the content of the school curriculum has become increasingly centralised, goals which are seen to be in the national interest, particularly in terms of catering to the demands of the labour market and economy, have been brought to the fore. As Ball (2008) puts it: 'education is *now* seen as a crucial factor in ensuring economic productivity and competitiveness' (p.1; emphasis added). A part of ensuring this productivity is the focus on numeracy (see Chapter 1) but so too are the destinations of school leavers.

Data from the DfE (2016) shows that 49% of level 3 completers go on to study at a HEI. Given that A levels consist of the academic route into HE and are the most commonly used entry qualifications for young students (with 56.6% of young undergraduate entrants holding an A level as their highest qualification in 2012-13; Universities UK, 2014), the appropriateness of the qualifications for preparing these students for undergraduate study becomes important. Although not a prerequisite to progression to study sociology at HE (e.g. Wakeling, 2008), for those who do on go to study sociology at undergraduate level after completion of A level sociology (see Chapter 6) the A level could be considered an introductory course. For those students, any disconnect between A level sociology and undergraduate sociology may hinder their future studies. In a study of the US context, Howard and colleagues (2014) assessed student learning over an introductory course which was taught in a qualitatively different way than the subject at high school. They found that

students who were novice experienced greater gains than those who had studied the subject at high school. To use Bernstein's terminology, if there is a disconnect between the subject as it exists in the site of production (HE) and that which exists in the site of recontextualization (in this case, the A level classroom) not only does the subject lose 'legitimacy' (as Gomm and McNeill put it) but it can also damage the efforts of those students who determine to follow this pathway of specialisation.

The relatively poor performance of those in the Howard *et al.* study who had taken high-school sociology compared to those who were complete novices, highlights the importance of coherence between the subject at these two different levels of education but also raises associated issues. Of these, the relatively poor performance of these students, particularly in the methods elements of the course, points to selection effects. That is, studying sociology may be associated both with lower general performance (Howard *et al.* refer to it as a potential proxy for GPA⁴⁴) and a likelihood that subjects which would foster development of methods knowledge and skills (i.e. maths and science subjects) are less likely to be taken by these students. As will be discussed in Chapter 6, this may be reminiscent of the situation in the UK. Also pertinent to the current study, another issue revolves around the disciplinary expertise of high-school teachers, which is often low (Lashbrook, 2001; DeCesare. 2005a). Although, a lack of background in the discipline has been shown to be

⁴⁴ Standing for Grade Point Average, an academic performance measure used in the United States, calculated as an average of grades received over all classes participated in.

somewhat characteristic of those involved in the expansion and development of the discipline, the implications that this might have for teachers of the subject in secondary education is explored in Chapter 5.

2.4 Summary

This account of the development of the A level examination has been offered as providing a base from which the current state of the A level, the position of actors in the system, and its role as a qualification can be better understood. Several issues worthy of note can be drawn out of this account, complementing an understanding of modern-day examinations. Of these, it is particularly interesting that the notion of high-stakes examinations dictating curriculum has been noted and questioned since the early days of such examinations. The account has also demonstrated that links between upper secondary examinations and entry into HE have existed since the Victorian Era. Even when not designed explicitly for matriculation purposes, we see the final examinations of schooling used for entry into both the professions and HE (and, subsequently, criticised for their lack of appropriateness for this task). Although considered one of the most highly specialised secondary education systems, it is interesting to note that specialisation appears to be a relatively recent phenomenon in the UK, and that attempts made to broaden the post-16 curriculum have been less than successful over the years.

The concurrent expansion of the HE sector and taught sociology in the latter half of the 20th century, appears to have shaped both the nature of the subject along with the perception that others hold of it. Sociology stands out as a

relatively new addition, both as a school subject and an established discipline in the HE sector. It may be this relative newness which has caused some trepidation with the establishment, although the location of development and teaching may also have played a role. This chapter has not paid much attention to the research concerns of most of the literature with which those involved with the Q-Step programme might concern themselves. Whilst by no means insignificant, a detailed inspection of issues of statistical anxiety (see Ralston, MacInnes, Crow and Gayle, 2016, for a comprehensive review in the context of quantitative methods pedagogy) would be more useful if such demands were made of students of the A level. However, recent research by both the Nuffield Foundation (2012) and Porkess (2012) indicated that opportunities for demonstration of mathematical and statistical skill were, at best, limited. These studies did not consider quantitative methods as a broader topic in the syllabus nor did they consider the wider curriculum and disciplinary context in which such topics were covered. Indeed, little attention has been paid to the detail of the Sociology A level curriculum in recent times. The rest of this thesis reports on the current project's attempt to address this neglect, whilst answering the specific research questions laid out in Chapter 1.

3 Methodology

3.1 Introduction

The gaps in the existing literature make investigation of the A level Sociology curriculum important in understanding how quantitative methods are positioned by the actors of the curriculum, offering insight and context into various initiatives' (including the Q-Step programme's) efforts to effect change in social science undergraduates. Study of the curriculum is necessarily complex. Given that the term can refer to a multitude of conceptualisations (Aoki, 1980/2005) it is necessary here to note that whilst distinctions can be made for analytic purposes between curriculum, pedagogy and assessment (as noted by Wyse, Hayward and Pandya, 2016), these distinctions and divisions are more and less useful dependent on the level of education under review. Whilst stressing the importance of context, Jung & Pinar (2016) exclude assessment from their definition, however in the context of high-stakes exams set in a performativity culture, this exclusion is untenable for the investigation of A levels. Rather than separate out the areas of the A level in this manner, Prideaux's (2003) conceptualisation of curriculum design is useful (as seen in Figure 9). Whilst this conceptualisation is limited in that it positions learners as passive receptors of knowledge, it is helpful in that it distinguishes between three actors in the curriculum: the written curriculum, the teachers of that curriculum, and the students who 'receive' it. Surrounding these elements are matters of policy, context, pedagogy, and learning, all of which were explored throughout the investigation and subsequent analysis.

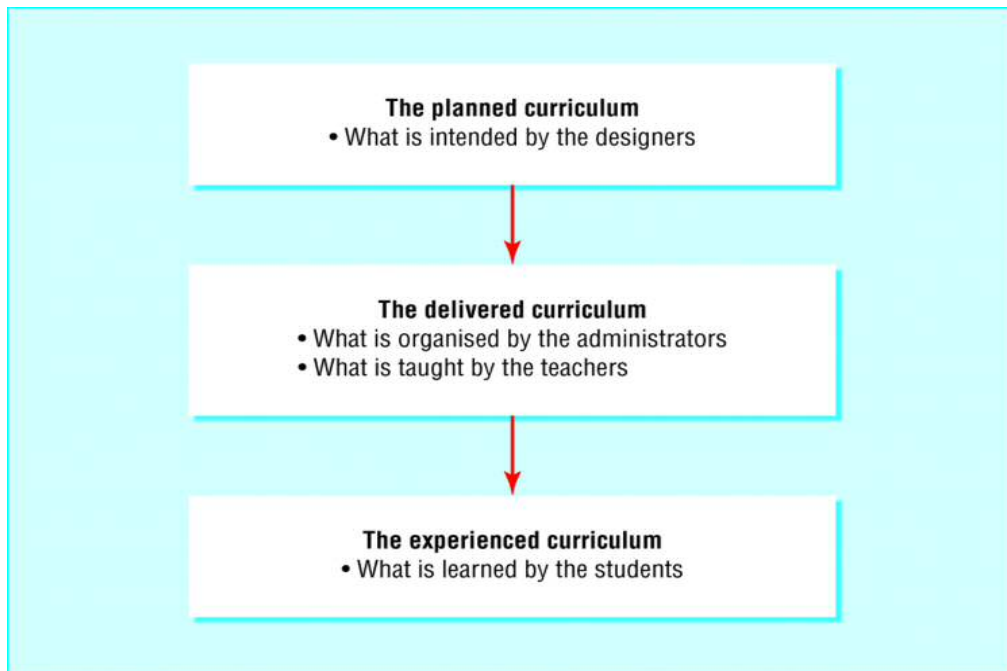


Figure 9: Prideaux's conceptualisation of curriculum

This chapter sets out the methodological approach taken to the study of the A level curriculum and methods used in support of answering the research questions set out in section 1.2. The research follows a multi-stage mixed methods approach, taking both an iterative, dialectic, and comparative approach to analysis. In total, three data collection methods were used across the stages of investigation (document analysis, questionnaires, and semi-structured interviews) and each is detailed separately with their individual analytic strategies described. Table 1 provides an overview of the methods used and samples drawn. For ease of explanation, the methods are presented discretely, although in practice and in analysis a more integrative approach was taken. Whilst some elements could be argued to be truly integrated (e.g. Q method: Bazeley, 2016), it is worth noting that there is debate in the literature to the extent that full integration is possible (e.g. Uprichard & Dawney, 2016). The presentation of the methodological approach taken addresses some of

these issues and allows for discussion of the methodological issues pertaining to the study of methodological issues. Finally, ethical considerations and limitations of individual methods are considered; the latter being somewhat addressed by the opportunity for triangulation through the use of other methods and the dialectic nature of the analysis.

3.2 Methodological approach

In order to investigate the nature of quantitative methods and analysis in A level Social Sciences, a multi-phase mixed-methods approach was taken. In the first phase, the written curriculum of Sociology and Psychology A levels were mapped by analysis of centrally-set and awarding organisation documentation. A mixture of quantitative and qualitative content analysis was undertaken to determine the prevalence and priority afforded to research methods broadly and quantitative methods specifically. The awarding organisations' exam specifications were used to identify common research method terminology included across the boards. These research method items were used in the second phase, where teacher and student perceptions of the methods curriculum within both Sociology and Psychology (separately) were investigated using an online questionnaire. Additionally, in this second phase, student attitudes towards research methods generally and quantitative methods specifically were sought. The third, and final, phase explored teacher experiences of teaching the Sociology curriculum. It also drew and developed on the findings from the second phase, allowing for a deeper and richer analysis and understanding of A level Sociology teachers' perceptions of the

research methods curriculum, its relationship with the discipline of sociology and their role as teachers of it.

Table 1: Overview of methodological stages

Stage	Subject	Sample	Analysis notes
1 Document analysis	Sociology	Subject-specific: GCE AS & A level subject content GCE AS & A level subject criteria Exam board examination specifications ($n = 3$) Exam board question papers & accompanying mark schemes ($n = 12$)	Analysis of examination specifications informed design of subject-specific Q set items for Stage 2 data collection
	Psychology	Subject-specific: GCE AS & A level subject content GCE AS & A level subject criteria Exam board examination specifications ($n = 5$)	
2 Questionnaires	Sociology	Students ($n = 107$) Teachers ($n = 20$)	Sociology & Psychology student responses used together in ATR & PQM analysis
	Psychology	Students ($n = 255$) Teachers ($n = 14$)	
3 Interviews	Sociology	Teachers ($n = 7$)	Purposive sample drawn from Stage 2 sample of Sociology teachers

3.2.1 Mixing methods

A deliberate multi-phase mixed-methods design has been chosen for this research. Mixing methods, so that both quantitative and qualitative 'techniques, methods, approaches, concepts or language' (Johnson, Onwuegbuzie & Turner, 2007; p.120) are utilised within the research process is by no means a 'new' approach to conducting social science research (Torrance, 2012). However, there has been increasing attention to this approach, visible in the number of books (e.g. Creswell & Plano Clark, 2011; Tashakkori & Teddlie, 2003), articles and journals (e.g. Journal of Mixed Methods Research) dedicated to the matter. Many studies are explicit in stating their methodological position when engaging with mixed-methods (Maxwell & Loomis, 2003); not least for the varying reasons for, and approaches to, taking such an approach. The purpose of this section is to briefly outline the paradigmatic, pragmatic and dialectic positions in relation to mixed methods whilst establishing where this research design lies in relation to these positions.

Recently the mixed method approach has been referred to as the third research paradigm (Johnson, Onwuegbuzie & Turner, 2007) sitting alongside, and apart from, the more traditional positivist/quantitative and interpretivist/qualitative paradigms. Traditionally, these two paradigms are set off against one another as alternative and contrasting approaches to conceptualising, addressing and answering questions about social phenomena. Perhaps the conceptualisation of mixed methods existing as a distinct paradigm separately from this is an attempt to overcome this

'oppositional rhetoric' (Schwandt, 2006; p. 808). However, it may not be necessary to separate a mixed methods approach in this way as doing so still suggests that the traditional methodological approaches are incompatible with one another. Instead paradigm pluralism can be embraced whereby more than one paradigm can inform and shape such an approach (Teddlie & Tashakkori, 2012). Further to this, if a pragmatic approach is to be taken, the seemingly most common reason for engaging in mixed methods work, this notion of a new mixed methods research paradigm may be seen as unnecessary and unhelpful (Harrits, 2011).⁴⁵

A pragmatic position does not discount the differences between paradigms, rather they are seen as not being useful to consideration of what methods to employ and as somewhat harmful in that they are often taken to be prescriptive to, rather than descriptive of, approaches taken (Greene & Caracelli, 1997). The pragmatist's concern is to choose the methods that are most useful for addressing the given research problem; assumptions from which the methods are drawn are considered unimportant for answering research questions (Rocco *et al.*, 2003). Further, quantitative and qualitative methods can be separated from the paradigmatic assumptions from which they are derived (Greene & Caracelli, 1997). This stance is distinct from a dialectical position taken by others engaging in mixed methods. A dialectical position does not disregard the philosophies and assumptions underlying the

⁴⁵ It is worth mentioning here that subscription to this notion of a paradigmatic divide has not been universal. Hammersley (1992), for example, argues that all researchers face the same dilemmas and questions, with different routes to a solution possible.

traditional dualist approaches. Neither does such an approach consider them unimportant, rather it seeks to recognise these differences and use them in a complementary fashion (Green & Caracelli, 1997). Such dialectical understanding suggests a 'weaving back and forth' (Fielding & Fielding, 1986) between the approaches and is associated with Giddens' (1976) concept of 'double hermeneutics', along with Geertz' (1979) 'dialectical tracking'.

There are many types of mixed methods research design, all relatively complex by the nature of the variety of methods able to be drawn upon. Such complex designs are seen, by those employing them, to better address and reflect complex social problems and realities (Creswell, Kasen, Plano Clark & Smith, 2014; Maxwell & Loomis, 2003). Although often methods drawn from the dualist paradigms are employed in a linear fashion, an interactive network or 'web' (Maxwell & Loomis, 2003), aligned with the dialectical stance, may enhance this reflection of social reality. Indeed Yin (2006) distinguishes between mixed methods running parallel within a study to those that are combined to be truly integrated. He warns against the tendency for the use of mixed methods without this level of integration, arguing that this damages the integrity of the study. In order to avoid this lack of integrity, to prevent the study becoming several smaller studies, care must be taken.

The approach taken in this research is not to take the stance of mixed methods as a separate paradigm. The design is pragmatic in the sense that it is a bottom-up approach being driven by the research questions. The overarching aim of the research is to gain an understanding of the whole curriculum

process – how it is described, practiced and experienced, and how these stages are related to one another. This is inevitably complex, resulting in a complex design, employing a variety of methods. Whilst I believe employing mixed methods in this way is the best way to explore and reflect this research problem, I am aware that this is not necessarily always the case and that there is still a place within the social sciences for single method research (Ahmed & Sill, 2012). Those employing mixed methods are clearly drawing on a ‘methodological eclecticism’ (Teddlie & Tashakkori, 2012) and they must be versed in a variety of methods so as to be able to choose the most appropriate for the task at hand. Whilst this is true of those wishing to engage in mixed methods research, to a certain extent it should be true of all those engaging in the investigation of social phenomena. Some problems may be best addressed using single methods but without having a comprehensive toolkit of methods from both paradigms from which to draw this may be an enforced, ill-considered ‘choice’. This is reflective of the perceived ‘quantitative problem’ discussed earlier in the thesis (see Chapter 1). The design consists of three stages of investigation, looking at the general (written curriculum and wider Social Science A level student and teacher experience) as well as the particular (individuals’ perceptions). Whilst the three stages of investigation could be considered as three related but discrete studies, thus not meeting Yin’s (2006) distinction of a truly integrated design, the design and interpretation can be considered synergistic and thereby drawing from the dialectical stance as well as the pragmatic. However, within the methods utilised in the research strategy, there are elements which could be considered truly mixed and

integrated: both the content analysis of official documentation and those which utilise Q method. As will be discussed in further detail, Q combines both quantitative and qualitative techniques (Ramlo, 2016) resulting in what Stenner and Stainton Rogers (2004) refer to as the 'qualiquantological' method.

3.3 Phase I: Document analysis

3.3.1 Sample & Design

The curriculum as written operates at a number of levels of regulation and implementation. As such, documents were included for analysis from both regulatory and awarding organisations. In terms of regulatory bodies' documents, the DfE's (2014) GCE AS and A level subject content for sociology, and GCE AS and A level subject content for science (which includes Psychology) were used. These documents outline the minimum knowledge, understanding and skills, with associated aims and objectives, expected of each subject at each level of study. The accompanying documents produced by Ofqual, outlining the conditions and assessment objectives awarding organisations must meet for each qualification, from 2014 were also used. In terms of awarding organisations, a full sample approach was taken, whereby examination specifications from each relevant awarding organisation were used. Given the role that these played in developing material for the following phase of investigation, these documents were taken from those available in a single academic year (2013/14). Similarly, a full sample approach was taken to examination papers and mark schemes, whereby each of the four exams (two

AS and two A level) from each of the relevant awarding organisations from one exam period (summer 2015) were included for analysis. Given that the study took place over a period of reform of the A level system in England, policy documents (including consultation documents which informed said reform) were also referred to. In addition to this, pre- and post- reform documents of those included in the analysis were compared to identify any (in)consistencies in the research method curriculum across the two time periods.

3.3.2 Analysis

A content analysis was conducted once the sample was identified, along similar lines to the advice provided in McCulloch & Richardson (2000). The analysis took a blended approach, using both quantitative and qualitative methods, to allow for interpretative analysis of the documents (McCulloch, 2004; Berg & Lune, 2012). The documents were coded for terms which were thought to necessarily refer to research methods. Once identified, these were then recoded into items which were considered to be quantitative, qualitative, mixed or neither. The context in which these terms were offered was then examined. In terms of the DfE's subject content documents, context referred to the level of prescription indicated by the language used in the document. Furthermore, the type of objective/outcome being referred to (i.e. knowledge, understanding or skills) was noted. This contextual information allowed for value attributions to be inferred from the documents. Similarly, the value attributed to research methods aspects of the curriculum, in terms of regulatory bodies, was assessed through analysis of the weighting of assessment objectives laid out in the Ofqual and awarding organisations'

documents. A similarly blended approach was taken to analysis of the exam specifications and papers, whereby the quantitative information about the proportion of marks available for quantitative research methods was supplemented by type of knowledge being sought, the wording of questions, and the relative position of quantitative compared to qualitative research methods. These qualitative comparisons were conducted internally to each awarding organisation, as well as between awarding organisations, with a mind to the regulatory document context. Along with the position of quantitative research methods within each curriculum, an understanding of the position of research methods, more broadly, was sought by making note of the frequency, attributed value and context of this aspect within the documents.

3.4 Phase II: Questionnaires

3.4.1 Sample

This section describes the four samples who participated in the second phase of research. As will be described the sample frame was purposive in nature as the perspectives of specific groups, namely teachers and students of A level Sociology and Psychology, were sought (see Silverman, 2010) and it was necessary that participants had knowledge and experience of the A level curriculum under investigation (Creswell & Plano Clark, 2011).

3.4.1.1 Teachers

Teachers of A level Sociology and Psychology were sought through a variety of means. In the first instance, a file was created of all of the institutions in England and Wales that offered some kind of A level provision, including

secondary schools with sixth forms, sixth form colleges and further education colleges that offered A levels.⁴⁶ Given that not all institutions offer these subjects, a sample of 100 schools were taken at random with replacement (replaced when institution was found not to have one or other of the subjects). The resulting sample consisted of institutions that offered either one or both of the subjects of interest. These institutions were contacted with a request and invitation for teachers of the relevant subject to complete the questionnaire. Contact was made using email addresses available on the institutions' websites. Where available the addresses for individual subject teachers were used, followed by subject and departmental addresses or, where neither of these were available, through the general administrative address. Whilst there was some response from these invitations, uptake was slow so additional routes to teachers were adopted. Two teacher associations, one for Sociology teachers and one for Psychology teachers, were approached to publicise the research and questionnaire to their members. The Psychology teacher association was reluctant to distribute the link to the online questionnaire (reasons behind this reluctance are discussed in Chapter 4). The Sociology teacher association, on the other hand, were engaged and accommodating with the request with an email request sent to all members,

⁴⁶ Northern Ireland and Scotland were deliberately excluded from this list. The main awarding organization in Northern Ireland, the CEA (Council for the Curriculum, Examinations and Assessment), does not offer Sociology nor Psychology GCE qualifications. In Scotland, the majority of 16-18 year-old students take the Scottish Qualifications Authority's GCE A level equivalent: Advanced Highers.

as well as an article describing the research and requesting participants, written by myself, printed in an edition of the association's journal.

At the end of data collection, there were 20 responses to the Sociology questionnaire and 14 responses to the Psychology questionnaire.⁴⁷ It is worth noting that the Sociology and Psychology data sets are not completely independent from one another: one teacher taught both Sociology and Psychology A level. Table 2 provides sample characteristics of the two teacher samples.

3.4.1.2 Students

Students were sought who had completed their A level qualifications during the period for which the exam specifications used in the prior phase of data collection were in operation. Given the context of this study, i.e. the concern of quantitative training and uptake in HE and beyond, those that had completed their A levels and gone onto HE were considered to be the appropriate population from which to draw participants. In order to recruit these current undergraduate students, or 'A level completers', invitations to participate in the questionnaire were sent to all university Sociology and Psychology departments in the UK for which email addresses were readily available (that is those that were available on their university website). In addition to this, the committees of Sociology and Psychology Student Societies were also contacted to distribute the questionnaire link. Of the departments

⁴⁷ It is worth noting that one response to the questionnaire was removed from analysis. This was after analysis of their open responses revealed that they had not engaged with the sorting process in an appropriate manner.

Table 2: Teacher sample characteristics

		Sociology teachers	Psychology teachers
		(%)	(%)
Gender	Female	65	80
	Male	35	20
Age	24-35	39	64
	36-45	33	7
	46-55	28	21
	56-65	0	7
Years teaching	Mean	11 years	11 years
	Sum	212 years	159 years
Main subject taught	Geography	5	0
	Mathematics	0	7
	Philosophy	5	0
	Psychology	8	80
	Science	0	7
	Sociology	84	7
Exam board	AQA	92	80
	Edexcel	-	13
	OCR	11	3 ^a
	WJEC	0	3 ^a

^a This equates to one response. Although asked to indicate just one exam board it was felt that this information should not be excluded from this summary.

universities (including 4 Q-step centres and 7 Russell group universities⁴⁸). Using Boliver's 2015 cluster analysis of university type, the universities from which responses were obtained appear to demonstrate reasonably good coverage. Boliver used publicly available information pertaining to research activity, teaching quality, economic resources, academic selectivity, and socioeconomic mix of students to identify four distinct types of university. Although no responses were obtained from the most elite universities (Oxford

⁴⁸ It is worth noting these are non-exclusive groups.

and Cambridge; cluster1), the students in the sample were from 11 (out of a potential 39) in cluster 2, 11 (out of a potential 67) in cluster 3, and 1 (out of a potential 19) in cluster 4.⁴⁹ In terms of the students, what distinguishes these universities from one another is the amount spent on academic services, entrance requirements, and socioeconomic status of the student body, all of which are higher for cluster 2 than cluster 3, and higher for cluster 3 than cluster 4. Interestingly, there is no great distinction between clusters 2 and 3 in terms of teaching quality, although cluster 4 fares markedly worse on these dimensions. Boliver's work allows a data-driven distinction to be drawn between the different universities and, for the purposes of this analysis, allows a broad understanding of where the student respondents are 'at'.

Students could complete the questionnaire regardless of what undergraduate degree they were taking. 361 students completed either or both of the Sociology and Psychology questionnaires. Students were sent links to both questionnaires within the invitation and were asked to respond if they had completed either. This led to some overlap, with 40 students completing both. To ensure independence of the two groups, those cases which appeared in both data sets were assigned to a single data subset determined by the undergraduate degree that they were studying. For example, if a student had studied both Sociology and Psychology at A level, and was enrolled on a Psychology undergraduate course, they were assigned to the Psychology data

⁴⁹ Although established in 1850, one university (St Marys University, Twickenham) only gained university status in 2014 so was not included in Boliver's analysis. It is also worth noting that Boliver does attribute descriptive names to the clusters.

subset. Similarly, if a student had completed both Sociology and Psychology A level and was enrolled on a Sociology (or related) undergraduate course, they were assigned to the Sociology data set.⁵⁰ These cases are of specific interest in terms of the comparison between the two subjects and so will be returned to later in the analysis. The following provides descriptive statistics of the two groups, Sociology A level completers and Psychology A level completers, separately.

3.4.1.2.1 Sociology students

107 Sociology A level completers responded to the questionnaire. Of these the majority were female (85%), with a mean age of 19.5 years (SD = 1.239). Most were in the first year of their undergraduate studies (43%), sat their A level exams in July 2015 (35%), and half took them at a school 6th form (53%). There was representation of all four exam boards which provide Sociology A level, with 72% sitting the AQA exam, 3% Edexcel, 18% OCR, and 7% WJEC (interestingly, only 46% of the sample were studying Sociology at the time of completing the questionnaire), with a range of other subjects taken as a major (the most prevalent of which were Psychology, at 20%, and Criminology, at 14%). Details of the breakdown of the sample by the various levels of these variables can be found in Table 3.

⁵⁰ Given the nature of some of the undergraduate courses students reported majoring in, some of these cases were not as neat as this. Generally, those assigned to the Psychology data set were studying towards a Psychology undergraduate degree. Not all those assigned to the Sociology data set were studying towards a Sociology undergraduate degree. Of those that needed assigning to just one data set, Geography, Education, and Social Work were amongst the non-Sociology degrees reported.

3.4.1.2.2 Psychology students

255 Psychology A level completers responded to the questionnaire. All examinations boards were represented in the data (see Table 3 for a breakdown of this). However, five respondents' examinations were awarded by the Scottish Qualification Authority, indicating that they took Scottish Highers rather than A levels, and so were excluded from further analysis. 82% of respondents were studying Psychology at undergraduate level, with the remaining fifth mainly studying Criminology (7%). As with the Sociology student data, the majority of respondents were female (87%), with a similar mean age of 19.7 years (SD = 1.363). Most were in their first year of undergraduate studies (36%), with a similar percentage in their third year (34%). The vast majority (85%) of the respondents sat their A level examinations between 2013 and 2015, with over half taking them at a school 6th form (55%). Table 3 provides more detail of these variables.

3.4.2 Design

The four questionnaires, one for each of the groups from whom perspectives and attitudes were sought, can be found in Appendix I. As well as collecting demographic characteristics, all four questionnaires had a Q sort element, along with a series of questions that asked about the nature of research methods (along the quantitative-qualitative spectrum) with regards to the A level, the discipline and their own preferences. Similarities existed between the student questionnaires were on the grounds of procedural details and exact methods used. Whilst the teachers were asked to spend more time

Table 3: Student sample characteristics by questionnaire completed

		Sociology		Psychology	
		Frequency	Valid %	Frequency	Valid %
A level board	AQA ^a	73	72	166	68
	CIE	-	-	4	2
	Edexcel	3	3	18	7
	OCR	18	18	34	14
	WJEC	7	7	23	9
A level institution	Further education college	16	15	33	13
	6th form college	35	33	76	30
	School 6th form	53	50	137	55
	Other	3	3	4	2
A level year	Pre-2010	-	-	4	2
	2010	1	1	4	2
	2011	2	2	3	1
	2012	8	8	27	11
	2013	29	28	82	33
	2014	28	27	59	24
	2015	37	35	71	28
University year	1 st	46	43	90	36
	2 nd	36	34	68	27
	3 rd	24	22	87	35
	4 th	1	1	5	2
University major	Anthropology	1	1	0	0
	Criminology	15	14	18	7
	Education	3	3	8	3
	Forensic Studies	1	1	3	1.4
	Geography	1	1	0	0
	Human Rights	1	1	0	0
	Journalism	0	0	1	0.4
	Law	1	1	0	0
	Media	2	2	0	0
	Politics	1	1	0	0
	Psychology	21	20	206	82
	Religion	3	3	1	0.4
	Social Science	4	4	6	2
	Social Work	1	1	0	0
	Sociology	49	46	4	2
	Theology	1	1	3	1
Youth and Community Work	1	1	0	0	

^aAQA supply two specification for Psychology AQA A and AQA B. The figures in the table include both.

engaging with Q sort activities, the student questionnaires had separate, additional modules which employed traditional Likert-type scale methods and analysis to measure attitudes towards research methods and quantitative methods. What follows are details of the design of the Q method and attitudinal scales. In that they both employ dimension reduction techniques, similarities exist in the analysis of these methods which will be discussed in section 3.4.3.1. All questionnaires were administered using Qsoftware, a specially designed piece of freeware that allows online completion of Q-sort procedures.⁵¹ The detailed procedures for the questionnaires are provided in Appendix I.

3.4.2.1 Q-method

In a Q-sorting exercise, items are sorted relative to the rest of the Q-set in response to the condition of instruction, such that the item placed in the 'most important' position holds the greatest psychological importance to the respondent only in relation to the other items within that particular Q-sort. All items are therefore considered 'equipossible and equipotential a priori' (Stephenson, 1978: 24). The researcher does not place any value on the terms in this method, allowing the respondent to arrange the items in a way that best conveys all the items' relative value, reflective of that individuals' viewpoint. Context also relates to the nature of an individual's viewpoint as being temporal. In contrast to the apparent assumption in repertory grid techniques that viewpoints (ways of seeing the world) are static, in Q-sort the acknowledgement of a temporal context allows for the understanding of the

⁵¹ More information available at <http://qsoftware.net/>

active process of meaning-making (Watts, 2008) which continuously adjusts and refines our understanding as we are exposed to stimuli. Stephenson (1980) himself summarises the notion of context thus: 'the same statement can have different meanings for different people and different meanings for the same person in different functional settings – nothing is normative' (p. 884; drawing on his 1978 work).

Like any study of subjectivity, the concern is not with the generalisability of the research findings to the wider population. Although the factors that emerge from the data set are in 'themselves generalizations of attitudes held by persons defining a given factor' (Mckeown & Thomas, 1988: 37; summarising Brown, 1986), these generalisations cannot be simply extended to the wider population of A level teachers or students. Indeed, any survey of this kind using traditional methods may struggle to claim true representativeness enabling generalization (although the claim is often made). Such is the nature of these types of investigations that the sample obtained is never truly random; rather, it consists of a self-selected number of participants from a random sample design. An attempt is not going to be made in this study to collect a random sample. Although this study will not be able to claim generalizable findings, careful selection of participants may enable me to think about the typicality of such findings just as one might if conducting a case study (Gomm, Hammersley & Foster, 2000). Further to this, Watts and Stenner (2012) claim that Q-methodology follows abductive logic. Whilst induction concerns itself with generalisations and descriptions of the data, abduction concerns itself with explanation and theory generation (Shank, 1998). In a way

abduction can be seen as an extension of induction, it is after inductive appreciation that abductive insight can be achieved (Pierce, 1955 [1940]). In any case, the purpose here is not for hypothesis testing nor the discovery of external truths, rather an exploration of both individual and shared perspectives of quantitative methods within A level social science.

Four versions of the Q-sort element of the questionnaire were developed, one for each of the four samples from whom perspectives were sought: Sociology teachers, Sociology students, Psychology teachers, Psychology students. The basic sorting procedure was similar across all four questionnaires in that participants were requested to sort a list of statements, referred to in this context as the 'Q-set', into a fixed sorting frame (or 'array') similar to that in Figure 10. As can be seen from the example figure, the sorting frame takes a quasi-normal distribution with items sorted along a bipolar dimension (in this example disagree-agree). This is termed a 'face-valid' dimension (Watts & Stenner, 2012), where contrasts are most positive to most negative rather than most to least positive. The dimension along which items were sorted was dependent on the question, or 'condition of instruction', which guided each sort. These conditions of instructions are detailed in the following subsections. Two Q-sets were developed from the research method terms identified to be common across the awarding organisations' examination specifications in phase I of the research. 33 terms were identified and included in the Sociology Q-set and 36 items were identified and included in the Psychology Q-set. The terms identified covered a breadth of concepts from theoretical and epistemological concepts through to data collection and

analysis terms. Details of terms included in the Q-sets can be found in the questionnaire details found in Appendix I.

3.4.2.1.1 Teacher Q-sorts

The teachers were asked to carry out three Q-sorting tasks under three separate conditions of instruction. The sequential conditions of instruction took the form of three questions:

1. How do your students find these concepts?
2. How important are these concepts to A-level
Sociology/Psychology?⁵²
3. How relevant are these concepts to Sociology/Psychology as a
discipline?⁵³

Guided by these questions ('conditions of instruction'), the teachers sorted the research method terms which made up the subject specific Q-set. Each condition of instruction had its own bipolar dimension, concerned with ease (question 1: difficult-easy), importance (question 2: unimportant-important) and relevance (question 3: irrelevant-relevant), respectively. For each question, an initial sorting exercise was conducted whereby teachers sorted the items into one of three piles representing the extremes of the bipolar dimension for the question and a neutral position. For example, for the first question teachers sorted the items into either a 'difficult', 'neither', or 'easy'

⁵² Deleted as appropriate.

⁵³ As above.

pile. This initial sort allowed for participants to become familiar with the items and how they thought about them in terms of the question being posed.

Following the initial sort, the participants were asked to sort the items into the quasi-normal Q-sorting grid (similar to that shown in Figure 10).⁵⁴ Again, this sort was done in terms of the question ('condition of instruction') being asked. Further instruction was provided asking participants to place each term in the column which best represented their perspective, in terms of the question and scale; resulting in a pattern whereby terms were placed relative to one another. Using the example as before, for question 1 teachers were asked to place items in the Q-sort grid in terms of the relative difficulty they perceived their students to have with them. Placing an item in the left-most position (at 1 on the scale) indicated that the teacher thought their students tended to find this the most difficult, whilst placement in the right-most position (9 on the scale) indicated that the teacher thought their students found this the easiest. Following each Q-sort, the participants were asked to provide open-ended responses as to why they placed items at the extreme ends of the scale. Participants were also asked if they thought that any important terms were missing from the Q-set. Detailed examples of the Q-sort questionnaire that the teachers completed can be found in Appendix I.I: Teacher questionnaire.

⁵⁴ The use of a forced distribution has the potential to be seen as limiting by the participants. However, there is always the danger for participants to respond in a way that they consider appropriate for the circumstance, rather than expressing their actual perception. By forcing them to differentiate between the relative ranking of items in this way, the forced distribution goes some way to circumventing any potential 'socially desirable responding' (Fluckinger, 2014). As this notion is context dependent, one might think of it in terms of 'professionally desirable responding' in the case of the teachers.

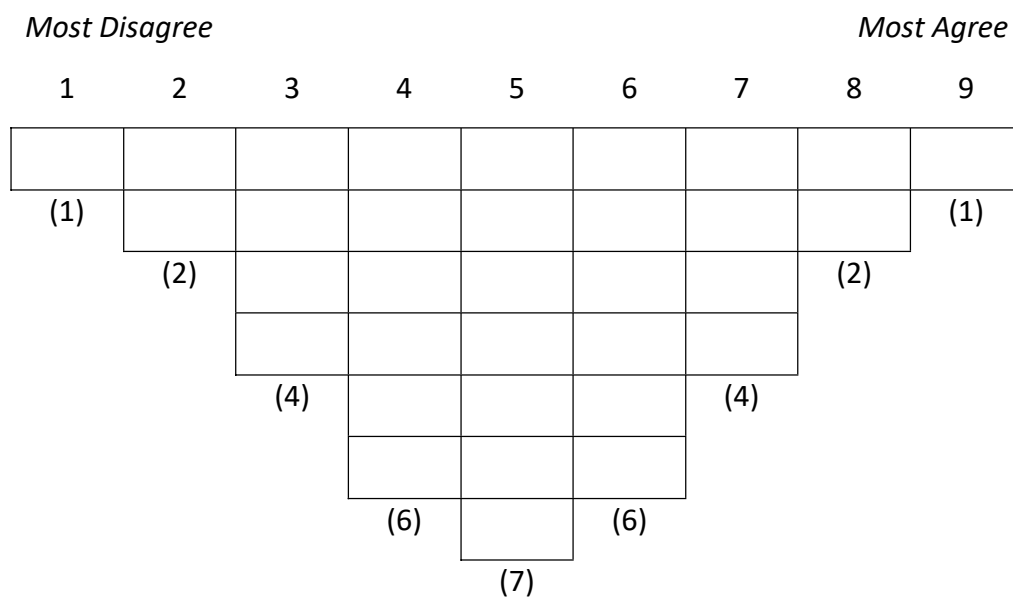


Figure 10: Example Q-sort frame

This design, in which the same set of items was sorted under multiple conditions of instruction, allowed for similarities and discrepancies both within and between teachers’ understandings to be made visible through the analysis (detailed below). Although not sorting the same items, the similar procedural design allowed the headline levels of shared understanding between the two subjects’ teacher samples to be compared (as reported in Chapter 4).

3.4.2.1.2 Student Q-sorts

The student Q-sort activity in the two student questionnaires followed much the same procedure as the teacher Q-sort activity described in the previous sub-section. However, whilst the teachers sorted items under three conditions of instruction, the students sorted under just one. Students were asked to complete the Q-set relevant to the subject being asked about under the question: *How did you find the following elements of your A level*

*Sociology/Psychology course?*⁵⁵ As with the teachers' sorts of their students' perceptions (question/condition number 1 above), items were sorted along a scale which ran from most difficult to easiest. Students were asked to conduct an initial sort, placing items into one of three piles ('difficult', 'neutral', 'easy') in order to familiarise themselves with the items and questions. They were then asked to sort the same items into the quasi-normal Q sort grid, placing items relative to one another so that the final array best represented their perspective of the relative ease of the items. Following this, post-sort questions were asked, requesting reasons for the placement of the easiest and most difficult items, as well as whether they thought any important terms were missing from those sorted (and, if they did, what these items were). The similar design between the student Q-sort activity and the first of the teacher Q-sort activities allowed for comparisons to be made post-analysis as to the shared understandings between the two groups within each subject.

3.4.2.2 Attitudinal scales

Following the Q-sort exercise, student attitudes towards research methods and quantitative methods were investigated using two separate scale measurement tools, both of which were included in both student questionnaires. The first of these tools was a pre-designed, verified scale: the Attitudes Toward Research (ATR) scale (Papanastasiou, 2005). This instrument was utilised to understand students' attitudes to research broadly, rather than quantitative methods specifically. The instrument consists of 32 items which

⁵⁵ Deleted as appropriate.

are thought to be manifest variables of underlying constructs. Participants were asked to score the statements along a scale of 1 to 7, where 1 represented a strong disagreement with the item and 7 indicated a strong agreement with the item. Some items were positively worded, for example: 'research should be taught to all students', 'research is interesting', whilst others were negative, for example: 'I feel insecure concerning the analysis of research' and 'I find it difficult to understand the concepts of research'. These negative items were recoded in analysis to reverse the direction of scoring so as to bring into line with the positive orientation of the majority of the items.

The number of underlying constructs to these manifest variables is debated in the literature. The original ATR scale was constructed by Papanastasiou (2005) using undergraduate Education students who were enrolled on a compulsory research methodology course. The exploratory factor analysis was conducted using principal factors analysis with an orthogonal (varimax) rotation, suggesting a 5-factor structure to the ATR scale. This structure was confirmed by Morgenshtern, Freymond, Agyapong and Greeson (2011), albeit with some rearrangement of which items fell into which factor, using graduate social work students (although details of the analysis were not given). The underlying constructs which the scale is thought to measure assuming this 5-factor structure are: anxiety about research ability; usefulness of research for professional training and practice; positive attitudes towards research; relevance to everyday personal life; and research difficulty. However, a thorough confirmatory factor analysis conducted by Walker (2010) considered model-fit indices of a 1-factor solution, 3-factor solution, and the original 5-

factor solution, and found a reduced scale with a 3-factor solution (with oblique rotation and extracted using maximum likelihood estimation) was the best fit for their data. These factors represented underlying constructs concerning research use, negative attributes of research, and positive attributes of research. Walker's sample differed yet again, collecting data from graduates studying within the College of Education enrolled on 17 different majors. The discrepancies found in factor structure may relate to these differences in sample characteristics. Rather than questioning the usefulness of the ATR scale as a measurement tool, this is raised here as an issue of the design of the scale and to indicate that the following analysis of the scale was conducted with these discrepancies in mind.

As well as the Attitudes Toward Research (ATR) scale, the student questionnaire included a 17-item scale whose purpose was to delve deeper into students' attitudes towards research methods by focussing on quantitative methods: the Perceptions of Quantitative Methods Scale (PQM). The scale was designed (through the adaption of questions included in Ramos & Carvalho, 2011) and verified through the design, implementation and analysis of this research. In terms of location within the questionnaire, the set of items which made up the scale was placed directly after the ATR scale items. This was done deliberately so students were somewhat primed by being asked to consider research methods in a broad sense prior to being asked about quantitative methods specifically. Similarly, students had been asked to complete the Q-sort exercise described above before being asked to complete the ATR/PQM section of the survey. This ordering allowed for students to be

reminded of the types of research methods they would have encountered in their A level studies, before moving onto their attitudes towards these types of methods, increasing in specificity as the questionnaire continued.

3.4.3 Analysis

The analytical approach to the questionnaire data involved quantitative analysis, supplemented with the qualitative insight provided by the open-ended questions. In particular, interpretation of the Q sort analysis was informed and supported by the reasons given as to why research method terms were placed at the extremes of each sort. In this interpretative vein, interpretation of the analyses was also guided by the literature and, with regards to the A level Sociology teacher Q sorts, interviews with participants. Descriptive statistics were calculated for the sample characteristics (reported above), along with summary statistics for the questions concerning the nature of research methods in the curriculum. Summary statistics were also calculated for the underlying constructs of the ATR and PQM scales. These summary statistics were tested for statistically significant differences across groups using simple *t*-tests, calculated by:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{s_p \cdot \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

where,

$$s_p = \sqrt{\frac{(n_1 - 1)s_{\bar{X}_1}^2 + (n_2 - 1)s_{\bar{X}_2}^2}{n_1 + n_2 - 2}}$$

and measures of effect size calculated by converting t into a value of r :

$$r = \sqrt{t^2 / t^2 + df}$$

3.4.3.1 Dimension reduction

Both the analysis of the Q-sort activities and attitudinal scales involved dimension reduction techniques, with the former involving principal components analysis and the latter involving factor analysis. Given that many of the statistical rules of thumb apply to both techniques, this section details the analytic strategy employed in the analysis of the attitudinal scales, followed by that employed in the analysis of the Q-sort data. This juxtaposition highlights how the two approaches are both distinct from and similar to one another.

3.4.3.1.1 Attitudinal scales: Factor analysis

The same analysis plan was followed for both the ATR and PQM scales. In the first instance, this involved partitioning the data into Sociology and Psychology students, whereby the smaller (Sociology) set was used in exploratory factor analysis, the structure of which was later confirmed using the larger (Psychology) data set. A series of steps are involved in the exploration and confirmation of factor structures underlying scales. These are summarised below, with Appendix II detailing how the analysis was put into practice in this study, using the example of the ATR scale. The factor analyses were conducted in IBM SPSS Statistics 23.

- I. *Data screening.* Univariate normality was checked through boxplots (to identify univariate outliers), histograms, mean, standard deviation,

skewness and kurtosis (considered severely non-normal is outside of Kline's $[-3.00, 3.00]$ range; Kline, 1998). Normality is of concern in factor analysis to the extent that non-normality can affect observed correlations (Hair *et al.*, 2010). Therefore, along with the aforementioned tests of univariate normality, assessment of each of the correlation matrix was undertaken. These assessments included visual inspection to ensure a healthy number of correlations over 0.30 (Hair *et al.*, 2010) and Bartlett's test of sphericity, which considers the whole matrix and tests the assumption that the correlation matrix is equivalent to an identity matrix (with a significant result indicating suitability for factor analysis). Additionally, the Kaiser-Meyer-Olkin statistic was used to assess sampling adequacy (with a recommended cut-off of 0.60). Whilst a degree of multicollinearity is a pre-requisite to factor analysis, indicators that correlate too highly are problematic (as their unique contribution can be clouded) and so were avoided (Field, 2009). Such multicollinearity can be identified through inspection of tolerance levels (acceptable levels > 0.10) and variance inflation factors (acceptable levels < 10) (Belsley, Kuh & Welsch, 1980).

Multivariate normality was checked through calculation and interpretation of Mahalanobis distance statistic and Mardia's kurtosis value. The Mahalanobis distance statistic is compared to the chi-squared distribution to assess which cases, if any, were to be considered outliers. The extent to which any identified cases were

considered influential and exhibiting leverage were assessed through examination of Cook's distance (with a suggested cut-off of greater than 1 being an influential record and exhibiting leverage; Cook, 1982). The final test assessing multivariate normality, Mardia's test for kurtosis and skewness, indicated whether multivariate normality is present in the data, indicated through a statistically significant result. The degree to which multivariate normality exists in the data indicates which factor extraction technique should be employed. In this instance, an indication of multivariate normality not existing in the data set led to an extraction technique which holds no distributional assumptions being used: the principal factor estimator.

- II. *Factor selection.* Factor selection is a somewhat iterative process, whereby initial statistics are produced by the first exploratory factor analysis and were used to attempt to determine how many factors should be extracted in the first instance. Rules of thumb exist which guide how many factors should be retained based on the statistics alone. One such rule is the Kaiser-Guttman rule (Kaiser, 1960) of retaining eigenvalues > 1.0 . The reasoning behind the Kaiser-Guttman rule is sound, i.e. an eigenvalue less than one indicating that the factor is explaining less variance than that of an indicator (Brown, 2015), and is often used in EFA to determine appropriate numbers of factors. However, the technique was originally proposed for principal components analysis, not EFA. As Courtney (2013) and Fabrigar, Wegner, MacCallum and Strahan (1999) point out, there are several

concerns over using this technique with EFA, including its tendency to overestimate factors (e.g. Ruscio & Roche, 2012). A commonly employed alternative, sometimes used alongside the Kaiser-Guttman rule, is Cattell's (1966) scree test. This test is somewhat subjective as it involves eye-balling a plot of eigenvalue by factor number to determine where the 'cliff' turns into 'scree'. By identifying this 'elbow' in the plot, where the steep slope of the graph (the cliff) levels out (the scree), one can determine how many factors need to be retained. Again, this test is based on eigenvalues but, despite its subjective nature (especially when there is no clear break in the plot), this method may be more appropriate than the Kaiser-Guttman rule as it has been shown to suffer from less variability over simulations (Zwick & Velicer, 1986). Although common practice to retain only those factors above this elbow, Cattell's original criterion sought to retain the first factor on the scree also (Hayton, Allen & Scarpello, 2004).

Alongside these, sometimes incongruent, techniques, a third technique was used to determine the number of factors to be used. Horn's (1965) parallel analysis (see also Humphreys & Montanelli, 1975) utilises the scree plot generated from initial values and compares this to a plot of eigenvalues generated from a random data set. This attempts to account for the fact that the data used to generate the initial values are generated from a sample rather than drawn from the population (Horn's main criticism of Kaiser's rule). Essentially the parallel analysis

takes into account the proportion of variance resulting from sampling error and can be considered a 'sample alternative' to the Kaiser-Guttman rule (Courtney, 2013, p.4; Garrido, Abad & Ponsoda, 2012, p.2). Following the procedures laid out in Hayton, Allen and Scarpello (2004), a series of random data sets were created (n = 50). Although the recommended number of random data sets generated for parallel analysis can vary up to as many as 1000 (e.g. O'Connor, 2000), there is no standard procedure for this (Hayton *et al.*). Horn recommends that the sample be reasonably large, and Crawford and Koopman (1979) found no significant differences between results with 1 randomly generated data set and 100. Using the average of eigenvalues of the random data sets, a new criterion for factor retention was set, whereby those initial eigenvalues from the actual data set which exceeded the corresponding eigenvalues from the random data set were retained.

- III. *Factor rotation.* Rotations of the final solution (i.e. after the final number of factors has been decided) are often applied to better describe and discriminate between the factors identified. Although rotations do affect the extent to which indicators load on each factor, by maximising loadings close to 1.0 and minimizing those close to 0.0 (see Comrey and Lee, 1992), they do not affect the fit of the model (Brown, 2015). Essentially a rotation is a transformation that allows this to happen by rotating the axes, the factors, upon which the indicators are plotted. These rotations can be done in such a way as to allow the factors to correlate with one another (oblique rotation)

or constrain the factors to be uncorrelated (orthogonal rotation). Commonly orthogonal rotation is employed. Partly this is due to the impression that this results in factors that are easier to interpret as they represent simple correlations between the indicators and factors, rather than being influenced by the covariance of factors in the underlying structure (as is the case with oblique rotation; Brown, 2015). However, this makes little sense substantively, if the underlying structure is likely to be measuring some overarching concept then it makes much more sense to allow factors to correlate with one another. As the purpose of both the scales under investigation and the indicators themselves within those scales are concerning the same topic, it makes substantive sense that the factors, whilst measuring separate and distinct aspects of this concept, are related to one another. Taking these concerns into consideration, an oblique rotation was used.

IV. *Assessing quality of alternative solutions.* The goal of rotation, and factor analysis more broadly, is to be left with a solution which describes the structure of the data whilst being easily interpretable, which has a 'simple structure' (Thurstone, 1947). This is partly informed by mathematical considerations, with each factor having a reasonable number of indicators (i.e. over 3) which load highly onto it and no others, as well as substantive ones; that is, the factors must make sense. Having decided on an initial number of factors to be extracted in the first instance (as determined by the preceding steps),

a factor solution was sought using principal factor extraction and oblique rotation. All variables used in the questionnaire for each measurement tool were used in the first instance. Those items that had no salient loadings (those $< \pm 0.3$) on any of the factors extracted were removed from analysis and the solution run again. In addition to considerations of the salience of factor loadings, how well the factors were defined was also taken into consideration. Items which had salient loadings on more than one factor, 'cross-loadings', were also noted. Those factors that only had a few indicators (three or less) whose primary loadings were associated with them, were considered poorly defined. Although Hair and colleagues (2010) suggest using a three-indicator rule, whereby factors that have at least three indicators are retained, Brown considers factors that have three items should be considered poorly defined and so eliminated. Throughout these assessments the substantive interpretation of the factors was considered, such that the final solution met the criteria laid out thus far *and* produced salient, interpretable constructs.

V. *Interpretation of the final solution.* Interpretation of the factors begins, to a certain extent, along with determining the optimum number of factors to extract. Once this had been decided upon, the pattern matrix for the solution was produced. The pattern matrix is distinct from the structure matrix (a multiplication of the pattern matrix and factor correlation matrix) which reflects the inter-correlation between the factors as well as the relationship between

the indicator and factor. The loadings are somewhat similar to those coefficients returned by multiple regression (Brown, 2015). They indicate the relationship between the indicators and a given factor, whilst controlling for the influence of the other factors sought. In practical terms, squaring the loading returns the percentage of the indicators variance explained by the factor (Hair *et al.*, 2010).

Therefore, the higher the loading, the more important that indicator is to interpreting the factor. Whilst loadings greater than ± 0.30 were retained for interpretation of the structure, loadings greater than ± 0.50 were utilised for substantive interpretation of the factors (these indicators deemed to be 'practically significant' (Hair *et al.*, 2010, p. 115). In terms of statistical significance, the required level varies as a function of sample size, number indicators used, number of factors extracted, and necessitates an inflation of the standard errors estimated. Whilst statistical significance is not the primary concern for this aspect of analysis, given the details of this particular case, a loading of around ± 0.50 should suffice (using the rule of thumb outlined in Hair *et al.*, p.115).

In this analysis, loadings were highlighted to indicate the factor to which they were most strongly associated. The loadings which were considered substantively significant were also noted ($> \pm 0.50$) and used in the interpretation of the corresponding factor. The solution for both exploratory analyses appeared to be simple (Thurstone, 1947) in that all indicators loaded onto only one factor and all factors appeared to

be well defined, with several indicators, and were substantively coherent.

In terms of factor inter-correlation, whilst it made sense that the factors be allowed to correlate with one another, too high a correlation would have suggested some potential redundancy of the factors extracted. Brown suggests factor inter-correlations of 0.80/0.85 to be too high, implying 'poor discriminant validity and suggest that a more parsimonious solution could be obtained' (p.32). Factor analysis involves a careful balance between attempts to achieve parsimony and substantive considerations of best interpreting the underlying structure of the data. In both cases, the factor correlation matrix revealed medium to weak correlations, which made substantive sense without compromising the solutions power of explanation.

- VI. *Confirming the factor structure.* The exploratory factor analysis, detailed in the previous steps, resulted in simple structures that were readily interpretable and made substantive sense. In order to determine whether the factor structure observed in the Sociology student data was representative of an underlying structure that exists amongst pre-tertiary/undergraduate students more broadly, the factor analysis was extended by running a tentative confirmatory factor analysis (CFA) model with the Psychology student data (essentially an EFA model in the CFA framework). The main difference between CFA and EFA, which is pertinent to this analysis, is the extraction method used. Whilst principal factors extraction was used

as the extraction method for the prior analysis, the extraction method used in this tentative confirmation is maximum likelihood. One of the advantages of using maximum likelihood is that it allows for goodness of fit measures to be calculated by comparing the covariance matrix of the actual data to that of a matrix estimated by the model (Hair *et al.*, 2010). There are several indices that can be used to assess a model's fit, although in this case the chi-squared goodness of fit statistic was used (testing the assumption that the model fits the data). Whilst the models in this case were not found to be a good fit, it is worth noting that the data was found to be multivariate non-normal to which the chi-squared test is particularly sensitive and so not much concern was given to this. In a further divergence from the EFA described in previous steps, rather than an assessment of alternative solutions, the number of factors to be extracted, as determined by the EFA, was specified at the outset. However, the relationship between these factors and the indicators included in the analysis (the same indicators as used in the final solution found in the EFA) was not specified. Rather than full blown CFA then, it is better to consider the analysis of the Psychology student data set as tentative; it is an EFA using a 'confirmatory perspective' (Hair *et al.*, p.120). Unlike with full CFA, this confirmation does not (and cannot) assess any comparative measures of fit of nested models. Rather it attempted to assess the stability of factor structure between the two samples.

VII. *Reliability analysis.* An aspect when creating scales of any kind is the extent to which the scale demonstrates internal consistency. This is assessed on an individual item level, by inspection of item-total and inter-item correlations, and on a sub-scale level via Cronbach's alpha. As the factor structure (if not loadings) had been directly replicated in the tentative confirmatory analysis, these statistics were calculated using the whole sample. As a general rule of thumb, item-total correlations are thought to be adequate when they exceed 0.50, and inter-item correlations when they exceed 0.30 (Hair *et al.*, 2010; Robinson, Shaver & Wrightsman, 1991). Cronbach's alpha levels of 0.70 – 0.80 are sought (Kline, 1999; Cronbach, 1951). Part of the reason that sub-scales were used for the reliability analysis, rather than the whole scale, is because this value operates as a function of the number of indicators on the scale (Cortina, 1993; Cronbach, 1951). Those items which showed very poor correlations with other indicators and which had total-item correlations well below the recommended cut-off were removed from the sub-scales. It is worth noting at this juncture that the recommended cut-offs were not strictly adhered to.

VIII. *Factor scores and summated scales.* Finally, once the optimum number of factors and items which made up those factors was decided upon, the factors could be used in analysis of attitudinal positions towards the underlying constructs associated with research methods and quantitative methods. As factors are representative of

underlying constructs, factor scores can be interpreted as the extent of a respondents' affiliation with that factor. Coarse scores are commonly calculated, which Brown (2015, p.37) refers to as 'unweighted composites' of item scores for particular subscale. For example, the score given by a respondent for each indicator associated with Factor 1 could be summed (Comrey & Lee, 1992), or a simple average of these taken (DiStefano, Zhu & Mîndrilă, 2009), to provide a coarse score representative of that particular respondents' positive attitudes toward research. However, this method can result in scores that misrepresent the underlying factors (e.g. Grice, 2001). An alternative approach, is to calculate refined scores for each respondent. Whilst there are many ways in which these can be calculated, the least squares regression method (Thurstone, 1937) was the original inception. This technique compensates for instances where differing scales of measurement have been used (Field, 2009). Although there are some issues with this approach, these estimates generally suffer from less bias than coarse factor scores (Grice, 2001), without eliminating all bias (DiStefano, Zhu & Mîndrilă, 2009). They also take into consideration the whole underlying structure. Rather than pay attention to the relationship between an indicator and the main factor on which it loads (as in coarse scores), the technique also accounts for the relationship between the indicators and all of the factors within the structure, as well as the strength of these relationships. Whilst refined scores are generally preferred if

uncorrelated scores are not necessary (Tabachnick and Fidell, 2007), interpretation of these coefficients can be tricky. Indeed, when it comes to exploratory work of the kind practiced here, Tabachnick and Fidell (2001) note that a coarse score approach is adequate. Further, when the concern is one of generalisability, Hair *et al.* recommend the use of coarse scores, or as they refer to them 'summed scales' (p. 122).

Given that this analysis is fairly exploratory in nature, with the concern on dimension reduction so that the underlying attitudes and associations between them might be better understood, coarse scores for each factor were calculated for each student based on their responses to the corresponding indicators. An advantage of using all the relevant indicators to summarise the students' positions, with regards to an underlying factor, is that the influence of measurement error of individual indicators is minimised (Hair *et al.*). Additionally, they lend parsimony to any further multivariate analysis. For the time being however, the scores shall be used to describe the data and patterns therein. Average scores, rather than summed, were calculated, retaining the original 1-7 scale of agreement. This was deemed most appropriate given the varying number of indicators present for each factor (and possible to compare between factors, and between scales, given the same measurement scale was used throughout). Some consideration may be given, with this technique, to the loadings of the indicators to the factor to which is designated. This

could be done with a cut-off put in place, e.g. the substantively significant cut-off of 0.5, or by applying a weight based on the factor loadings themselves. Whilst the advantages of this are readily apparent (as they take account of the extent to which the indicator represents the underlying factor), this technique can be affected by the extraction and rotation procedures (DiStefano, Zhu & Mîndrilă, 2009). As was observed in the analysis, whilst the factor structure may remain the same across sub-samples, loadings may well vary. Thus, these techniques were deemed to be no better than taking simple averages of the sub-scale indicators.

3.4.3.1.2 Q-method: Principal components analysis

Analysis of the Sociology teachers', Sociology students', Psychology teachers' and Psychology students' Q-sorts were conducted independently to the other groups. Additionally, separate analyses were conducted for each of the teachers' Q sort activities. This resulted in eight Q-sort analyses being conducted, one for each of the student samples and three for each of the teacher samples. The purpose of the analysis was to identify patterns within and across individuals (Barry & Proops, 1999), through identification of groups which held similar response patterns to one another. As will be discussed, this latter identification is often conducted using similar factor analysis techniques to those described above; what Ramos (2016) refers to as the empirical grouping of people. However, the analysis and interpretation of data collected via Q-method departs from that above in a number of ways, as do some of the decisions outlined in the stages of analysis explained below. The main

difference between factor analysis of Likert-type scales and that commonly utilised in Q-methodology is the unit of analysis. Whilst the former aims to identify shared variance between items, the latter aims to identify shared variance between cases (thus identifying shared relative perspectives of the issue at hand). Put another way, Q-methodology sorts respondents rather than items. The differences in analytic approach mean that Q-method analysis is often referred to as 'inverted factor analysis' (Stephenson, 1935; Watts & Stenner, 2012).

Whilst the analyses in this study were conducted on each of the four samples separately, and direct comparison of results was not sought, the overall structure and patterns of shared perspectives within the groups were looked at alongside one another to get a sense of differing levels of coherence between and across groups. These comparisons, along with the appropriateness of procedural decisions made, will be discussed throughout the following, which outlines the stages followed for each analysis of the Q-sorts. Analysis of the Q-sort data was conducted in R using the 'qmethod' package (Zabala, 2014).

- I. *Correlation matrix.* This matrix is the basis of the following dimension reduction analysis but also gives an initial indication as to the relationships between individual's perspectives within the group. Rather than a simple data screening procedure, as in the factor analysis described above, detailed inspection of the correlation matrix was carried out with attention paid to the strength of relationships

between cases. Clusters of strong correlations within this matrix suggest potential groups of similar response patterns. The number and strength of significant correlations within the correlation matrices gave an indication as to the overall levels of agreement and diversity of perspectives (as measured by the Q-sorts). The greater the number of higher, positive correlations, the fewer disparate perspectives may be present in the sample, and therefore fewer groups of shared variance may be found.

- II. *Data reduction.* Unlike the analysis of attitudinal data, and the common practice of Q-methodologists, the data reduction extraction method used in this part of the analysis was principal components analysis. Whilst factor analysis assumes an underlying structure to the data, principal components analysis does not; it is a data driven extraction method, which attempts to explain 100% of the variance in the data. This is distinct from factor analysis which assumes some level of error, through measurement and sampling. Although contested within the Q-method community, these allowances made through the assumptions of factor analysis are not of concern here. Whilst samples have been taken, it is not claimed that this a representative sample from which generalisations can be made. This is particularly true of the small samples obtained for the teacher questionnaires. Thus, the goal here is neither to identify an underlying structure which exists in the wider population. Rather, the

aim is to identify any shared perspectives, as measured by the Q-sort activity, within the participants selected for inclusion.

- III. *Rotation.* As mentioned, groups (or components) were extracted using principal components. As with the analysis of the attitudinal scales, factor rotation was utilised for ease of interpretation. It's important to note that this rotation is not manipulation of the data, rather it is manipulation of the axes along which these data points sit. The axes are the standpoints by which the groups of data points identified, i.e. the components, are described. Through rotation, these standpoints can become better defined, leading to more meaningful interpretation. The rotation used in this analysis, was varimax (Kaiser, 1958), an orthogonal rotation. This rotation technique aids interpretation through maximising the variance of loadings onto components such that components represent few cases, which in turn tend to load onto few components (Abdi, 2003). Being an orthogonal technique, varimax also retains the relationship between the axes, i.e. they are not allowed to correlate with one another as in oblique methods.
- IV. *Assessing solutions.* Whilst eigenvalues, scree plots, and significant loadings were all used to guide how many groups were to be extracted from the data (as in the procedure used in analysis of the attitudinal scales) there is a greater focus on Q-methodology on the interpretation of each solution on the way to determining the

appropriate final number of components or factors to extract. As such, following advice offered within the Q-methodology literature, the initial number of factors extracted was seven (Brown, 1980; Watts & Stenner, 2012). At each iteration, the eigenvalues of the components were assessed to determine the statistical strength and explanatory power of each component. Given the nature of this analysis, the Kaiser-Guttman rule of dropping those components with eigenvalues less than one makes substantive sense given that these would account for less variance than an individual Q sort and so add less than simply examining the Q-sorts as collected. Cattell's scree plot and Horn's parallel analysis were also used to examine the suitability of solutions and guide the appropriate number of components to extract. In addition to these, the number of cases loading onto each component was examined. Similar to factor analysis of attitudinal scales, the rule of thumb is to have a minimum of three significant loadings for a component to be meaningful (Brown, 2012). As mentioned, the analysis hoped to explain as much of the variance and represent as many perspectives as possible. Whilst the former was examined by totalling the variance explained by each component (with a rule of thumb of adequate solutions having total variance > 40% followed; Watts & Stenner, 2012), the latter was inspected through the statistical loadings of cases onto components. Throughout these analyses, there were some cases which did not significantly load onto just one component. Rather

than representing perspectives which were distinct and separate from others in that analysis, these tended to load reasonably heavily onto more than one component, suggesting a perspective somewhere between those described by the components. These statistical rules of thumb were utilised alongside substantive interpretation in various iterations of the analyses, using differing numbers of components extracted, before deciding upon an appropriate solution.

- V. *Interpretation of results.* Interpretation of the results of the analysis begins throughout the iterations of assessing solutions described in the last step with the final interpretation conducted once the adequate number of components to be extracted is decided upon. The analysis provided a component array for each component extracted. For each component, this array is the average sorting pattern of those which significantly load onto the component. It details the average column placement for each item, resulting in an array which can be visualised in the same manner with which it was collected; that is, the average component array can be laid out in the same sorting pattern as the original Q-sorts. Part of the interpretation of the perspective that each component represents involved examining these arrays in a holistic manner to see where items were placed relative to one another, with particular attention to those placed at the extremes. These interpretations were guided and supplemented by the open responses provided by participants loading onto a given component as to why they placed certain items

at the extremes of their sort. As such these interpretations attempted to provide deeper understandings of the perspectives represented, as well as providing descriptions of the perspectives uncovered. As well as the relative position of items within a given component array, the extent to which these were similar or dissimilar to other components were explored. The analysis thus far had identified how similar or dissimilar components were to one another but did not indicate in which ways they differed. The analysis allowed for an indication to be made as to whether items were 'consensus' or 'distinguishing' statements. Consensus statements are those which the components give a similar score to each other; the components can be thought of as holding a similar relative perspective on these items. Distinguishing statements are those which the components give a dissimilar score from one another; the components can be thought of as holding differing relative perspective on these items. This information was used in conjunction with the placements of the items to allow relative positioning of items to be considered between components, as well as within. Thus, interpretation of components, and the perspectives they represented, was conducted in terms of both shared and diverse opinions. Lastly the components were given names which summarised their position, described through their relative positions both within and between component arrays, with interpretation supplemented by qualitative open-ended responses to

the post-sort question – and ultimately the interview data collected in the next phase.

The Q-sort allowed for a breadth of items to be sorted, from theoretical and epistemological concepts through to data collection and analysis terms, with room for the teachers and students to give reasoning for the relative placement of items. The conditions of instruction (i.e. the questions) by which the teachers sorted the items concerned the students, the written A level, and the discipline itself. Given that the same elements of the syllabus were sorted each time across the conditions of instruction within the teacher samples, the extent to which teachers, at an individual level, demonstrated a recognition of a discrepancy between the subject and discipline was also explored. Alongside this the level of agreement of perspective across the different conditions was examined within and across subjects. Furthermore, within subjects, the level and type of variation between students' perceptions of the relative ease of the research methods terms and teachers' perceptions of the students that they have experienced was also compared. The findings of this phase of analysis went on to inform (and, to a certain extent, was informed by) the following, third phase of investigation.

3.5 Phase III: Semi-structured interviews

The third and final stage of data collection included semi-structured interviews with a sub-sample of the teachers who had already completed the Q-sorting exercises. Whilst qualitative interviews were written in to the original design, capitalising on the rich data they offer, to a certain extent this phase also grew

organically out of the research process. Analysis of the questionnaire brought up several interesting aspects of divergence and difference of positions, particularly in relation to the A level Sociology teachers, which warranted closer investigation. The interviews not only came about and were informed by the questionnaire results, the insights gleaned through the interviews also enabled better interpretation and understanding of the perspectives made visible in the Q-sort analyses. Although laid out in a separated, sequential manner here, the actual analysis took place in an iterative manner with some analysis of phases II and III not necessarily easily identifiable as a distinct phase (Hammersley & Atkinson, 1997).

3.5.1 Sample

Given the interesting results of the A level Sociology teachers, including a diversity of opinion both amongst and within these teachers' responses, and that this diversity was not evident in the A level Psychology teachers results, it was decided to conduct interviews with the former group of teachers only. At the conclusion of the questionnaire detailed in the previous section, teachers were asked if they would be willing to participate in an interview. Of those who indicated that they would be willing to participate, individuals were selected for inclusion such that the interview sample covered the various categories of position represented in the questionnaire analysis. This was by no means a clearly defined sampling strategy in the usual sense, given the multiple points of diversion and categories to cover. The sampling strategy was driven by the results of the analysis of the data from the prior phase. Within this, the individuals selected for interview were thought to typify the

perspective that they held in relation to these emerging categories (rather than be generalisable or generalised positions; Patton, 2002). This has echoes of Blumer's (1979 [1939]) notion that 'a half dozen individuals' with such knowledge constitute a far better "representative" sample than a thousand individuals... who are not knowledgeable' (p.xxxiii). In fact, the number of teachers involved in the interviews was seven.

The teachers taught in a range of schools, from specialist colleges to sixth form colleges, with some more selective than others. Some of these had only A levels as their post-16 offering, with others offering a range of courses, including vocational, in-work and university programmes of study. Of those institutions with a mix of vocational and academic offerings, it is interesting to note that Sociology was sometimes taken as an A level alongside vocational qualifications but that this was considered an exception rather than a common occurrence. The scale of the institutions within which the teachers worked also varied, not just in terms of range of courses offered but also the number of potential students. The largest, a federation of several academies had a student body of over 15,000 with 29 pupils per A level classroom, whereas one of the specialist colleges had classes with just 4-6 students in them. In terms of where Sociology sat within these institutions, the schools/colleges varied greatly in terms of their organisational structures. Some teachers were entirely classroom based, whilst others shared offices with teachers of other subjects within humanities and social sciences (including psychology).

3.5.2 Design & analysis

The approach taken to conducting the interviews was a semi-structured one. There were a few key questions that were developed with a desire to explore issues that came out of the analysis of the questionnaire in more depth, along with questions relating to the research aims of the study which had not been (fully) addressed in the previous phases. The decision to keep these structured questions to a minimum allowed for greater flexibility within the interview schedule. Given the diversity of experience and perspectives of those interviewed it made sense that they might wish to speak to a greater or lesser extent about certain topics of the schedule. Therefore, along with headline questions, prompts were developed for certain topics, although the easy nature with which the interviews took place meant that these were seldom necessary. Perhaps partly due to the nature of those who teach, all of those interviewed were very comfortable engaging with the questions asked and often supplied information on additional, relevant areas.⁵⁶ Whilst the questionnaires had been useful in identifying sites of shared and diverse opinion, they did not explore other influences on the teachers' experiences of teaching quantitative methods. The interviews allowed space for this and the schedule was modified accordingly when themes emerged which appeared to be salient and important to those being interviewed (such as advised by

⁵⁶ This may be more about those who teach A level Sociology specifically. As will be explored in the analysis chapters, these teachers may well feel that their work is undervalued and therefore relish the opportunity to discuss their experiences of teaching this subject.

Bryman, 2012). The interview schedule can be found in Appendix III: Interview schedule.

As indicated above, the design of this phase was informed by the findings of the previous. Whilst this in itself could be considered a data driven approach, the analysis of the interviews was conducted with the findings of the previous section in mind. Although attempts were made to free analysis from the confines of the research questions to a certain extent, it was difficult to leave my own position and insights behind during the analysis process.⁵⁷ In fact, such separation was not entirely desirable here as analysis and interpretation was an iterative one, whereby previous findings helped in the interpretation of this phase's data and vice versa. Whilst keeping this overarching whole in mind, a thematic analysis of the individual interviews was undertaken (roughly following the guidelines laid out in Braun & Clarke, 2006). The thematic analysis was neither purely inductive nor theoretical but positioned somewhere between the two, thus it is difficult to assert a certain framework from which this analysis was conducted. Moreover, whilst a close reading of the interviews was conducted, it was important that the whole narrative which was being presented through the interviews was preserved (Hollway & Jefferson, 2013). Each transcript was coded and recoded several times with themes emerging during this process. Themes which developed out of the analysis of the previous phase's data and throughout conducting the

⁵⁷ The notion that this is even possible has been challenged by critiques offered by those such as Thomas & James (2006), not that this detracts from use of other useful features of the theory.

interviews themselves were also borne in mind throughout the coding procedure. Once coding was complete, these codes were organised into these themes and the relational aspects of these themes was explored through mapping of the codes, themes and sub-themes. Understandably, with such a detailed discussion of a phenomena such of the research methods curriculum there were many interlocking themes which emerged. Some of these appeared as specific to certain individuals, whereas others were found across the interviews. Likewise, whilst some were attributed more concern (whether positive or negative), others were mentioned but not considered to be very important. Themes were chosen to be included in the write-up of the analysis in the following chapters to the extent which they contributed to the discussions therein and their contribution in terms of providing insight into the research questions addressed.

3.6 Reflective and ethical considerations

Rather than detail all the methodological limitations of each technique used in the research, the use of mixed methods in this interpretative approach to the research questions hopes to offer a means of triangulation (integrating data from multiple sources; Babones, 2016) that enables methodological limitations of the parts to not detract from the methodological strength of the whole. However, some limitations are referred to in this section in terms of the overall design.

3.6.1 Research limitations

3.6.1.1 *Sample*

As will be discussed in greater detail in Chapter 6, not all institutions offer the subjects under investigation. Furthermore, within the institutions that do, not all have subject-specific teachers. This was found to be the case for Sociology more commonly than Psychology. When taught by a non-specialist teacher, Sociology classes tended to be taught by humanities teachers, with Psychology being taken on by Biology or Sociology teachers. It does not appear to be unusual for Level 3 teachers to teach more than one subject (especially in the smaller institutions), although the frequency with which it was found in Sociology did surprise me. It is not that this research necessarily sought to gather the experiences and perspectives of subject-specialists, but it tended to be the case that those recruited did teach just the one subject on which they were reporting. We could consider these individuals as those most knowledgeable about the curriculum; the few experts which Blumer (1979 [1939]) refers to. However, it does mean the experiences of those who teach the subject as an additional subject (perhaps less than willingly), the non-specialist teachers, are not necessarily represented here (although some of those interviewed could fall into this category). There are several reasons as to why subject-specialist teachers may have been more likely to respond to the invitation to participate. These include how easy these individuals were to reach with the invitation (with subject specialists more likely to have been contacted directly), time-tabling (with non-specialists more likely to have a fuller schedule) and general interest (with subject specialists intrinsically more

interested in their own subject). Furthermore, one can imagine that those who are non-specialist may not have felt confident in participating. Whatever the case, the limitations of the sample are acknowledged in the claims made about the findings.

3.6.1.2 Curriculum as practised

My wish to study 'delivery' and 'experience' simultaneously reflects Ball's approach to interpreting the curriculum as a process (Ball, 1993). Conceptualising the curriculum as a process, it is necessary to investigate how such a written curriculum is actualised by all those involved. In this context, 'practice' not only denotes the observable activities that occur in the classroom but the meaning behind those practices (Wenger, 1988). Of particular interest is how such practices convey the perceived value of certain aspects of the curriculum (in this case, quantitative methods). Although direct observation of lessons might have provided some insight into the enactment of the curriculum, in light of what observation usually denotes (i.e. evaluation of professional practice) such activities may not be welcome. In what is sometimes termed 'the Hawthorne effect' (after Elton Mayo's studies of the workplace; Mayo 1945), the presence of an observer in the classroom is bound to have some impact on the behaviour of all those present. Additionally, the research methods aspect of the curriculum made-up very little of the overall curriculum and, as such, observations may have been ineffective in capturing the depth of insight required to answer the research questions. Whilst some researchers may assume that belief predicts behaviour to the extent that they are causally related (e.g. Munby, 1982), the relationship between belief and

behaviour is surely more iterative and subtle than this. In an educational context, this can be seen in the notion of the Pygmalion Effect (Rosenthal & Jacobson, 1968), whereby belief influences behaviour which in turn influences belief, in a cyclical nature *ad nauseam*. Operating on the assumption that belief goes some way to predicting behaviour, the focus of this research is not on *what* happens in the classroom, rather the attitudes and perceptions that determine *why*.

Just as observations of classroom behaviour may not reveal the underlying attitudes and beliefs about the topic being taught, neither may direct questioning. Uncovering such underlying beliefs may prove tricky for several reasons. For example, teachers may be unwilling to express opinions that deviate from policy (in terms of the curriculum and/or the institution in which they work). This is not to suggest that such teachers would be deliberately deceptive about their own opinions (although this must not be ruled out altogether). Rather, when being asked in a professional setting what their opinions about certain aspects of their professional practice are they may answer with their professional 'voice' rather than their personal one. Alternatively, it may be that individuals are less than aware of and/or not readily able to articulate their underlying beliefs (Greenwald & Banaji, 1995). This may be because such beliefs are implicit rather than explicit. There has been a great deal of research to indicate that implicit and explicit attitudes regarding the same topic need not be congruent with one another (see Wilson, Lindsey and Schooler, 2000). Whilst it is explicit attitudes that individuals report as guiding their behaviour, implicit attitudes held also have an effect

(Dovidio, Kawakami & Gaertner, 2002). Although much of the existing research surrounding these concepts is concerned with social cognition rather than matters of education, it is not unrealistic to assume that teachers may hold beliefs about their subjects and the content therein which may be considered implicit. This may particularly be the case if those implicit beliefs differ from the values attributed to the topics through the written curriculum or the professional communities within which they practice. Therefore, it seems necessary that the underlying, perhaps implicit, attitudes and beliefs about quantitative methods are sought from the teachers themselves. Attitudes are notoriously hard to measure. As Thurstone (1928) himself recognised, they are complex and often indescribable with use of single quantitative measures. Measuring implicit attitudes may therefore be considered even more difficult and so alternative methods to the traditional need to be sought. One such methodology that allows for exploration of individual subjectivities whilst satisfying the practical and theoretical demands of this research is Q methodology (Stephenson, 1953). Q methodology allows for both constructivist and constructionist viewpoints to be investigated (Watts and Stenner, 2012). Watts and Stenner use Foucauldian language to describe this, whereby participants' individual Q-sorts are seen as an expression of their subjective position and the factors extracted interpreted as being representative of the main discourses at work in the data.

3.6.2 Ethical considerations

Consent was obtained from participants in the questionnaires and interviews on the grounds that their responses would remain anonymous in the final

analysis. As such, respondents to the questionnaire were given an ID number with which all analyses were conducted and reported. The only identifying information collected from these participants in these questionnaires were their email addresses, which were only required to be valid if they were willing to participate in follow-up interviews. These email addresses were used to contact interview participants in the first instance, subsequently being used to match up interview data with corresponding questionnaire data. Those that were interviewed were given pseudonyms. Whilst Sociology teachers may be identifiable within the schools or colleges that they work in, given that there is often just one teacher responsible for these lessons, the institutions within which they work tend not to be referred to in enough detail as to make this an issue. However, there was one instance in which a teacher revealed information about special challenges faced by themselves which, coupled with the sparse contextual information offered, may have made this teacher identifiable. As such the specific details of this part of the interview, whilst interesting and pertinent, were excluded from the reported analysis. This pertains somewhat to the 'dangers' raised by those who contest the standard procedures of anonymity (such as Saunders, Kitzinger & Kitzinger, 2015) and argue that such practices can distort findings. Generally, however, the data did not compromise participant anonymity, with the only other instance retracted at the end of interview by the participant themselves.

All questionnaires (which included the Q-sorting exercises) were completed online and interviews over the phone. Informed consent was obtained at the beginning of the questionnaire procedure, with assurances of anonymity and

right to withdraw their response (providing they provided a valid email address at the relevant stage of the online procedure). Similarly, verbal informed consent was obtained before embarking on the interview schedule with participants and their right to withdraw responses re-assured at the close of the interview. No withdrawal was made in either method, although one participant did withdraw part of their interview at the end of the session as they were concerned it may have made them identifiable and put them in a compromised position. Along with anonymity of interviewees, awarding organisations were anonymised in the write-up of the analysis of their examination specifications, examination scripts and accompanying mark schemes. Although all of these documents are publicly available, the interest of the analysis was not to establish the extent to which certain boards perform over others, rather, in this regard, the purpose was to document the level of variability within these interpretations of the centrally-set subject content and assessment guidelines. Ethical approval was obtained for the research by the Cardiff University School of Social Sciences Ethics Committee.

3.6.3 Reflective considerations

Having laid out my methodological approach earlier in this chapter, it is fitting to address my position as the researcher in the study here. Researchers necessarily bring their own experiences, understandings and knowledge to the phenomena under investigation; researchers 'see' the researched through lenses tinted by their own experience. Rather than discredit such research, the act of reflexivity means that these lenses are themselves acknowledged for the role that they play in the research processes (see O'Reilly, 2009; May &

Perry, 2011). In fact, the notion of reflexivity can be expanded further to a dialectical inquiry which includes aspects of the researcher, the participant and the context (see Anderson, 1989). As such it is important that my own experiences are made explicit here, in an acknowledgement of how these may have interacted with and been reflected in the interpretation and lines of enquiry pursued (as advised by Becker, 1988).

I feel that it is important to reflect on my background, in terms of the experience (or lack thereof) that I have had of the topic under investigation. My academic history, prior to embarking on my doctoral studies, had not included sociology. As such, I knew little about the discipline and the research methods used therein. My A level studies included Psychology, Law and Religious Studies, with an AS in Applied Mathematics. I mention the latter because one of the worst marks that I received in any examination was in my statistic module. This is relevant as later on in my academic career, I developed an interest and specialism in statistics, eventually resulting in a distinction achieved in an MSc in Quantitative Methods for the Sciences, Social Sciences and Medicine, awarded by a Mathematics and Statistics Department from one of the leading universities in the UK. Indeed, even at A level I had an interest in statistics: conducting a quantitative methods coursework project as part completion of my Psychology A level. My own personal experiences of learning statistics has been largely positive, I am fortunate that I both enjoy and am good at this field of inquiry, so my lack of achievement in my AS level mathematics statistics module both stands out and is worthy of reflection. Two things have arisen out of this and have influenced the way that I have

thought about the current research. One of these is the role of affect in learning. Rather than affect being influenced by the subject matter itself, in my case it was the negative relationship that I had with my tutor which influenced my attitude and engagement with the material. This was put into stark contrast with the statistics tutor that I had throughout my undergraduate (Psychology) degree, whose affable and approachable demeanour encouraged my engagement and interest. Whilst not the purpose of this research to investigate these interpersonal relationships per se, it has made me conscious of the active role that teachers can play in shaping students attitudes towards curriculum content and even the potential they have for learning.

My quantitative background is also worth highlighting here. Having studied psychology at both A level and undergraduate level I had some insight into how research methods were positioned within this discipline. Interestingly, my psychology undergraduate degree was completed in an Educational Research department and it was made clear that qualitative research methods which were occasionally advocated were not necessarily nor commonly found in psychology more broadly. A relatively large proportion of our training involved quantitative research methods and I was exposed to the negative attitudes, self-efficacy and affect of the majority of my fellow students in relation to these modules. These experiences gave me insight into how student level affect influenced their experiences and achievement in these activities, something which was later corroborated in my own teaching experiences within a Social Science department. As a graduate teaching assistant, I was involved in the teaching and promotion of quantitative methods to a range of

students at different levels of their academic career, as well as offering support and encouragement to colleagues embarking on quantitative research projects. I have also been involved with some of the activities of the Q step centre located at my university. Whilst all these activities could be seen as advocacy for quantitative methods, they have not been conducted in an oppositional way. However, it is the case that I have had to learn about the use, value, and values of qualitative methods throughout my doctoral studies. The transition from an environment dominated by quantitative methods to one dominated by qualitative methods, along with exposure to accompanying critiques of the 'alternative' was not easy to navigate. However, through reflection and study, I feel that I have arrived at a position which lends a useful critical eye to the topic under investigation here.

Through acknowledgement of and reflection on my own position in this research I hope to give context to the interpretations presented of the findings, experiences and perceptions of the participants in the research. Whilst I hope to provide insight into the A level Social Science curriculum, I acknowledge that what is presented here is *my* (informed) interpretation. The insights and explanations offered and uncovered through the research are one way of describing the situation. In this way, the position that I am taking is similar to the position of Letherby (2012) and, to an extent, critical realists (such as Bhaskar, 2008).

3.7 Summary

In order to answer the research questions laid out in section 1.2, this thesis takes a methodological approach which focuses on using a range of methods to better understand the complex phenomena of the curriculum. The iterative, dialectic approach taken to the analysis blurs the boundaries between the methods of data collection in the following analysis chapters. Similarly, the following three chapters provide in-depth, discursive analysis loosely distinguished by each 'actor' of the curriculum with the written curriculum dominating Chapter 4, Sociology A level teachers being the main focus of Chapter 5, and the final analysis chapter (Chapter 6) centred around A level completers. Although ostensibly only concerned with one aspect of the syllabus, the insights garnered through data analysis and collection, allows for extrapolation and interpretation which moves beyond the confines of quantitative research methods.

4 The Written Curriculum: Breadth and Boundaries

4.1 Introduction

This opening analysis chapter offers insight into the written curriculum, arguing that it not only informs but, to an extent, dictates teachers' classroom practice, providing the content and assessment practices which dominate the A level experience. Just as Prideaux (2003) conceptualised a journey of curriculum from the written documentation, through teachers' transmission, to students' reception, the formulation of the written curriculum itself can be seen as a journey in terms of a feedback loop which consists of formulation and reformulation through intervention by policy makers, examination boards, academics, publishers and others. This chapter outlines the role that these actors play in the shaping of the written curriculum, using the recent A level reforms as both an example and contextual backdrop with which to frame the following analysis. Attention is paid to the research methods content of the Sociology curriculum at all levels of the written curriculum, including centrally set guidance, awarding organisations' exam specifications and the exams themselves. Within this, particular consideration is given to the position of quantitative research methods content with the value attributed to such content inferred through marks available in assessment and the mode of assessment; the language used to denote levels of prescription; and the type of engagement encouraged and expected. The awarding organisations' exam syllabuses, along with a full course of exam scripts from a sample year, are thoroughly analysed in this regard, and variation between the boards noted.

Throughout investigation of the written documentation, teachers' accounts, collected through interviews, supplement and inform the analysis. After consideration of the position of quantitative research methods within the written curriculum the chapter turns to teachers' own understandings of the quantitative content of the subject, as well as its position within the discipline. This part of the analysis draws on the findings from the preceding analysis, as well as A level Psychology. Whilst Sociology is the main focus of the current study, the position of research methods within A level Psychology and the perceptions of those who teach it are offered as a contrast, highlighting the diversity apparent within the Sociology teachers' perceptions. The latter are explored in depth and in the context of the analysis of the written documentation. The chapter concludes with a summary of the key points of the analysis, setting the scene for and tone of the following analytic chapters.

4.2 Reform and divergence

Before discussing the recent reform to the AS and A level system, it is worth pointing out that this point of reform is also a point of divergence for the English and Welsh education systems. Whilst education has been a devolved responsibility of the Welsh Government since 1998 (Government of Wales Act 1998), until very recently the qualifications system has remained relatively similar to that in England, with exceptions including the introduction of the Welsh Baccalaureate and the increase in effective leaving age raised to 18

years old in England.⁵⁸ Recent reforms to the qualifications system, put into effect with new syllabuses introduced in 2015, have seen greater divergence between England and Wales. This divergence is larger at GCSE, with differences in grading systems, subject content (and associated assessment objectives), and the structure of assessment. At AS and A level, the main differences are apparent in the structure of assessment and the relationship between the AS and A level. The Welsh system retains many of the key features of the pre-reform qualifications, where AS courses can be taken as stand-alone qualifications or combined with A2 units to form a complete A level (although will now only contribute 40% towards the latter, rather than the 50% of previous years). In Wales, the courses are unitised, with the opportunity open for students to retake individual units of the qualifications. Meanwhile, in England, AS courses and A level courses have been separated into two distinct qualifications, with AS courses not contributing to the A level qualification in any way. Both courses are assessed under a linear system, with examination at the end of the course. In terms of retaking the qualification, under this new system students in England must retake all of the exams associated with it. This reflects the more traditional system of A level examination which was in place before the introduction of AS levels with implementation of Curriculum 2000 at the turn of the century. This return to the linear system may well reflect the ideological importance attributed to

⁵⁸ Technically, the school leaving age remains at 16 years old but as of 2015 young people must continue in some form of education or training until the age of 18. The school leaving age remains at 16 years old for the rest of the UK.

tradition by neo-conservatives, such as those currently in government, although it has also been argued that the introduction of AS levels was, in itself, not that much of a departure from the original structure of the qualifications (e.g. Young, 2008, amongst others).

Leaving aside ideological motivations, ostensibly the move in England to a linear system is an attempt to combat some of the recent concerns raised about modular systems. These concerns include the development of a 'resit culture' which, it is argued, emphasizes and centralises examinations (Poon Scott, 2011). Higton *et al.* (2012) found that an expectation of a second chance which this kind of culture engenders was detrimental to students' expectations and experience of further studies (see also Ricketts, 2010).⁵⁹ It is also argued that the removal of a modular system may move away from a surface approach (learning to the test) towards the development of more sophisticated, synoptic understanding; that is a move away from instrumental approaches (Hayward & McNicholl, 2007). Whilst the implication here is that a linear system will allow for the teaching and learning of the subject as a whole, it is important to note that the exams are still divided into separate topics. Arguably, the reform is not removing modularity of teaching or assessment, it is simply moving the timing of that assessment. Although not the focus of my study, some of my teacher participants based in England did raise the issue of linear examinations and the potential positive outcomes of this. As in Higton *et al.*, there was some indication of an increased flexibility which may allow the introduction of a

⁵⁹ Along with grade inflation making the job of discriminating between students more difficult for university admissions.

research project (although the likelihood of this materialising remained vague). Also, somewhat surprisingly, one teacher (Aaliya, a Sociology teacher at a 6th form college) was optimistic that the new system might benefit weaker students who, she argued, tended to simply repeat their GCSE performance in the first set of exams, given they are positioned just months apart. However, the main concern of the reform for the teachers interviewed was that of recruitment. Despite Sociology being the 10th most popular A level subject in the UK (JCQ, 2015; out of over 35 available), the teachers interviewed expressed anxiety in terms of maintaining viable numbers. The subject was described by many teachers of being taken as an AS ‘filler subject’ by students who they then managed to convert onto the full A level course.⁶⁰ The notion of Sociology as a ‘filler’ subject has links to its perception as an easy subject, something that will be discussed in more detail later in the chapter (and in greater detail in Chapter 6). The restructuring of the A level system, such that there is no obvious progression from AS to A level, has inspired this anxiety about a reduction of candidate numbers. However, there is evidence of awarding organisations referring to ‘co-teachability’ of the AS and A level, claiming that the courses are designed in such a way as to reduce the burden of teaching courses simultaneously, as well as allowing students to move over to the A level within the first year of study. How this will play out in practice remains to be seen. For those teachers who were the only Sociology teacher in their institute (and notably not subject specialist) these pressures were even

⁶⁰ Interestingly, post-reform some of these teachers reported sustained growth in the uptake of the subject.

more pronounced. Charles (a humanities teacher in a grammar school) maintained that 'real term cuts' to funding will mean that schools are forced to reduce their A level offer, with those subjects seen as less useful for onward study liable to be dropped. Although relatively popular, Sociology may well be one of those subjects given that it is not deemed to be a 'facilitating subject' (Russell Group, 2016).⁶¹

Despite the divergence in structure, much of the AS and A level content remains similar across the two systems, as do the assessment objectives for most subjects and the grading system for reporting purposes (i.e. grades A*-E for A level courses and A-E for AS level courses). In fact, most of the content remains similar to the legacy (pre-reform) qualifications. One can imagine that as qualifications are developed over time, greater differences will appear, although the common starting point for all the jurisdictions should ensure at least broad similarity and comparison to be made in terms of the standards of these qualifications. This is clearly a crucial aspect of the reforms: that divergence does not develop to the extent that the use of the A level qualification as an uncomplicated route to HE or employment is compromised. To this end, there is a Memorandum of Understanding between Ofqual and Qualifications Wales (the respective regulatory bodies of England and Wales)

⁶¹ As defined by the Russell Group's A level Content Advisory Board (ALCAB). They defined 'facilitating subject' to be those A levels which are most commonly required by universities for acceptance onto many undergraduate degrees: English Literature, History, Modern Languages, Classical Language, Maths and Further Maths, Physics, Biology, Chemistry, and Geography. Sociology A level is not even required for undergraduate study of itself.

which recognises both the legitimate similarities and differences between each jurisdiction's reformed qualifications systems.

Both Ofqual (established in 2010 under the Apprenticeship, Skills, Children and Learning Act 2009) and Qualifications Wales (established in 2015 under the Qualifications Wales Act 2015) are independent regulatory authorities, who approve and regulate awarding bodies and their qualifications. The establishment of a separate regulatory authority for Wales followed the recommendation of the Review of Qualification for 14 to 19 year-olds in Wales 2011 and further highlights and differentiates the devolution and responsibility of this policy area. Similarly, Northern Ireland also has its own regulatory body: the Council for Curriculum Examinations and Assessment (CCEA; established under the Education (Northern Ireland) order 1988).⁶² The regulatory bodies set the requirements which exam boards must meet in the design of any new qualification, as well as operating regulatory and quality assurance functions. Of the three regulatory bodies, Ofqual has the largest remit, setting the requirements for all subjects taught in England, as well as most subjects in Northern Ireland and subjects in Wales for which no qualification has been developed to meet the Qualifications Wales requirements. Post-reform, all three countries have awarding organisations which specialise in country-specific qualifications: AQA, Edexcel (Pearson), Eduqas (WJEC), and OCR in England; WJEC in Wales; and CCEA Awarding

⁶² In terms of AS and A level reform, the system in Northern Ireland is similar to that described for Wales.

Organisation in Northern Ireland.⁶³ As previously stated, much of the content of the syllabuses and examinations within each subject remains relatively consistent across both the awarding organisations and jurisdictions.

Not only has the content remained fairly consistent between the awarding organisation and jurisdictions within the context of the reform, but for many subjects it has also remained fairly stable across the pre- and post-reform time periods. Although undergoing a thorough review process, of the 13 subjects considered in the Smith Review 2013,⁶⁴ most required substantive but minor changes (including Psychology) with few needing only minor but non-substantive changes (including Sociology) and only one needing major substantive changes. It is important to note that changes have been made to the written curriculum since the current research started, with some minor changes to the centrally set subject content requirements as well as the exam specifications set by the awarding bodies. However, given the similarities and legacy of the systems, along with the fact that the majority of A level certificates are taken in England (92% in 2013, for example), it is the English context that will be detailed in terms of curriculum development. Where appropriate reference will be made to any discrepancies between pre- and post-reform content and assessment practices, with the consultation

⁶³ Scotland is deliberately excluded from the discussion here given the historical divide between the Scottish education system and the rest of the UK, as well as the earlier, more radical reform of the Scottish system (Gamoran, 1996).

⁶⁴ Art and Design, Biology, Business Studies, Chemistry, Computing, Economics, English, Geography, History, Mathematics, Physics, Psychology, Sociology.

documents themselves also providing insight into the practices and understandings that underpin development of the written curriculum.

4.3 Research methods and the formation of the written curriculum

4.3.1 Subject content

In terms of how the regulatory authorities influence the shape and content of the written curriculum for recognised academic qualifications, we can follow a path of documentation and regulation from centrally-set basic subject content, through to final examination papers. Given that the current research was conducted prior to and throughout the period of reform described above, the following refers to the situation in England, which to a large extent still influences, directly and indirectly, the examinations sat in Wales and Northern Ireland. The starting point for the written curriculum in terms of documentation produced is the subject content document produced by the DfE. This contains the minimum knowledge, understanding and skills, with associated aims and objectives, expected of each subject at each level of study. Whilst much of the content of these documents is prescriptive, the relative sparseness is an indication of the intention that the depth and detail of the courses be provided by the awarding organisations. It is thought that providing some level of flexibility allows awarding organisations opportunity to respond to developments in the field in a timelier manner than centrally designed regulations. In practice, the subject content documents tend to remain relatively stable over time (as discussed above) and when reform does happen, insight into content development can be garnered. The recent reform period

provides insight into how this content is developed, with representatives from HE, awarding organisations, schools and colleges, learned societies and professional bodies consulted on reforms proposed in the Smith Review (2013).⁶⁵ Given that the review concluded that no significant nor substantive changes needed to be made to the Sociology curriculum, the 'reformed' 2014 content document is discussed here.

Before turning to research methods specifically, it is worth noting two aspects of the Department of Education's (2014) GCE AS and A level subject content for sociology document that link to issues which came out of the analysis of interviews with teachers. The first is that the document states that 'the study of A level sociology *must* focus on contemporary society' (emphasis added). A criticism voiced by some of the Sociology teachers was the lack of contemporary examples and understanding used in the syllabuses and exams. Relating this to the design of the curriculum, how one interprets the language of the written documentation becomes important. For an examiner I spoke to, contemporary examples could be those from the past 15-20 years. For others within my teacher interviews (especially those with an eye for policy developments), the pace at which society and associated sociological thinking develops, this is an inadequate interpretation of 'contemporary'. Toni, a Sociology teacher with a PhD in Education, expressed this viewpoint particularly vehemently in relation to her field of expertise. She spoke of this placing teachers in a problematic situation, whereby teaching more

⁶⁵ There was a notable absence of direct consultation with the British Sociological Association in this review process.

contemporary understandings and examples may prove a disservice to students in terms of their written exams but that by teaching dated examples and understandings may place students at a disadvantage if they go on to further study in this discipline.⁶⁶ We can see here an acknowledgement of one of the purposes of A levels, aligned with that put forward by Ofqual, beyond achievement of the qualification as an end in itself and as a route into further study in HE (see Chapter 2 for the historical precedence of this). Toni was by no means alone in this criticism, although some took a different tack. For example, Rob (a Sociology teacher with a Masters degree in the Sociology of Education) questioned whether the root of this issue lay in the written curriculum or in the discipline itself; he argued that there is a dearth of current, influential sociological thinkers and, as such, it is not the curriculum at fault but a short-coming of the discipline.

The second aspect worth mentioning relates to what, for some, is the core of studying sociology: development of the sociological imagination. Although not explicitly referred to by any of the teachers interviewed, Chapter 5 discusses how this relates to Sociology teachers' pedagogy and is explicitly referred to in the subject content thus: 'Students must be encouraged to develop their own sociological awareness'. The use of 'must', as with the previous aspect discussed, signifies the prescriptive nature of these centrally designed

⁶⁶ Whilst it has been noted that A level Sociology is not a prerequisite to entry onto a sociology degree programme, Higher Education Statistics Agency data shows that it is the top degree choice for those with a sociology A level who go on to undergraduate study (at 12.28% of those who took A level Sociology going on to enroll on a sociology undergraduate course; bestcourse4me, using HESA Student Record 2005/2006 to 2013/2014).

documents and is associated with notions of requirement. Some of the research methods content laid out in the document is also treated in this manner. Specifications designed under this subject content have to ensure that students are required to 'demonstrate knowledge and understanding of a range of methods and sources of data and to understand the relationship between theory and methods' along with an ability to analyse and evaluate the collection and recording of evidence, as well as demonstrate an ability to interpret and evaluate evidence. Importantly, 'evidence' is explicitly positioned as including both quantitative and qualitative data and special mention is given to the identification of significant social trends (which denotes a quantitative approach). This 'emphasis' on quantitative methods was reported as 'welcomed' by some of those consulted in the reform review process. However, it was not deemed necessary to produce a separate annex of terms required to be understood (such as is produced for each of the science subjects, for example), nor make a minimum mathematical content (such as exists for science subjects⁶⁷). This apparent emphasis may not be recognised by all who teach the subject. Partly the impression of the subject content relies heavily on how it is enacted and assessed by the awarding organisations. Whilst the teachers participating in the current study were aware of an increased emphasis on numeracy generally, with reference to Ofsted's (the school inspectorate in England) requirements that 'outstanding' lessons

⁶⁷ Minimum mathematical content required ranges from 10% (Psychology) to 50% (Physics).

include some numeracy aspect, this was not explicitly recognised as something which had changed within the subject content.

The extent and level of quantitative content in the curriculum did appear to be considered important to some of the teachers interviewed. The relative importance of teaching students and prioritising one approach over the other appeared to come from two different foundations: the practical and the theoretical. The theoretical included teachers' own understandings of the nature of the discipline, as well as their own epistemological approach to studying society. These were diverse, both between those who prioritised one approach over the other and within those who prioritised a certain approach.

These understandings will be explored in more detail later in this chapter, but it's interesting to note here that even those who claimed not to take a stance on this did tend to indicate some prioritisation of either quantitative or qualitative approaches, be it for these theoretical reasons or for the practical reasons outlined in the following. Although in the minority, some stressed the importance of teaching students the value of and skills in quantitative methods for what one might consider practical purposes, what might be termed 'transferable skills' in other educational settings. They emphasised the skills that their students might need in employment and further training, seeing their role as somewhat preparing their students for this 'wider world'. One teacher in this camp argued that students should be taught more quantitative skills for 'work, employment, and getting a job in anything, or just for life, they

need more' (a Sociology teacher at a sixth form college, who himself as 'positivist', referred to in the following as Michael).

As well as preparing students for work, it's worth noting at this juncture that whilst the teachers did consider their role to be preparing students for HE (including trying to cultivate a 'sense of independent self-study' in spite of the criticism raised above about the modular system), this was not expressly preparation for studying Sociology at degree level. Indeed, teachers were aware that very few of their students appeared to go on to study Sociology further. Rather, this training was in generic skills, of which some teachers felt quantitative methods was a part. This might be considered an activity which had long-term implications, whereas the practical aspects behind the reasoning why qualitative methods should be prioritised centred on the shorter term. These short-term concerns were grounded in teachers' awareness that students were more easily able to gain marks with an understanding and use of qualitative over quantitative research methods. Furthermore, some of my teachers acknowledged that this awareness, coupled with students who were perceived to be less able or willing to engage with quantitative methods (see Chapter 6 for more on Sociology students), meant that when faced with limited resources (particularly time), qualitative content was prioritised over quantitative.

The differences here between long-term and short-term goals have ties to the instrumental approaches to learning for which exam-centric teaching is often accused (see Chapter 5 for a more in-depth discussion of this, as well as

Watkins, 2010). The short-term concerns of the marks available to students demands an instrumental approach, fostering a surface approach to learning, but arguably so too does the long-term focus on transferable skills, albeit to a lesser extent. Treating these as discrete skills pulls away from an integrated, deeper approach, with the focus on a purposeful, transferable nature falling short of a deep approach to teaching the subject as a discipline, with a prioritisation leading away from encouraging a deeper engagement and understanding of the subject. The issues of instrumentalism and performativity in this context are explored further in the following analysis chapters. At this juncture, the focus turns to whether this ‘awareness’ that the teachers hold about the preference for qualitative methods is evidenced in the written curriculum.

4.3.2 Assessment practices

There is a clear emphasis on skills of analysis⁶⁸ and evaluation rather than practical skills throughout the subject content document (see previous section). In terms of a practical element, whilst the subject content does refer to such, the modality changes to suggestion rather than prescription: ‘[demonstration of skills] *could* be achieved by students designing and conducting sociological investigation’ (emphasis added). Recent policy in England tends towards an aversion of non-exam assessed work contributing to any final grade. This is seen most clearly in the reforms to A levels, which resulted with the removal of non-exam assessment from subjects which had

⁶⁸ Analysis here is not equivalent to analysis of data.

managed to retain it despite previous reforms, resulting in all subjects (bar Geography) having assessment based purely on exam performance.⁶⁹ Contrary to the appeal from HE and learned societies to improve students' practical skills, the overall reduction in the weighting of non-exam assessments in the latest reforms questions the government's commitment to meeting this call. Prior to reform, science subjects (with the exception of Psychology) had a practical element that constituted 20-30% of the final exam mark. Post-reform the practical element of the course no longer bears any weight on the A level grade obtained, but is given a separate mark, reported alongside students' final grades. Similar to both Psychology and Sociology, students' theoretical and conceptual understanding is assessed in the written exam. Ofqual documentation (A level Reform: Regulatory impact assessment, 2014) highlights general concerns over non-exam assessment that tend to centre on its reliability (or lack thereof). The document cites clustering of grades between students and higher achievement for individuals compared to written exams.

There is a tension in the position afforded to teachers in these discussions. On the one hand, it is argued that removal of practical assessment will remove constraint placed upon teaching activities (thereby giving teachers more autonomy in the classroom). At the same time, the potential lack of reliability and verifiability of grades awarded by teachers are raised as issues of concern

⁶⁹ This tendency has also been apparent in the removal of vocational and skills-focussed qualifications from secondary schools, in the wake of the Wolf Review (for an overview of these arguments in this context, see Harrison, James & Last, 2014).

(questioning teachers' ability and professionalism). This echoes the position teachers find themselves in within the performativity culture of high-stakes exams (discussed in more detail in the following chapter); with one hand teachers are apparently given more autonomy, yet the other removes it with measures of performativity linked to exam grades (seen, in this culture, as the only valid measure of student learning). Taking away non-exam assessed elements of the course is discussed in the reform literature as relatively unproblematic. Using the example of Geography fieldwork, the burden of responsibility is placed at a school/classroom level. Geography fieldwork continued to be a stable element of most A level courses, despite removal from the assessed element of the course. The argument being that if teachers deem a practical element to be integral to the teaching a subject, they will teach regardless of whether it appears in the centrally set requirements.⁷⁰

None of the teachers interviewed included a research project element within their teaching of the A level, despite encouragement to do so in both the subject content and exam specifications. This may be because some of them had other subject specialism but may also partly reflect the argument presented above that teachers do not deem it integral to the teaching of the subject. Whatever the case, the lack of hands-on research does accentuate the difference between the subject and discipline. Teachers interviewed tended to consider those who engaged with the 'doing' of the discipline to

⁷⁰ Perversely, subsequent reforms to Geography have seen the reintroduction of individual investigation as a required element in the assessment of the A level. This non-exam assessed element constitutes 20% of the new Geography A level.

belong to it; the lack of 'doing' in the A level may well part of the reason why these teachers did not consider themselves to be members of the discipline itself (See Chapter 5, for a more detailed discussion of this point). Whilst not considered integral to teaching the subject, it was widely accepted by the teachers that 'the best way for them [the students] to understand is for them to do some research'. However, this was not pursued because of the instrumental position that most teachers saw they needed to take in response to the amount of content needing to be covered. Furthermore, the instrumental position taken by students themselves was seen as a barrier, with Charles asserting that students were reluctant to engage with what they may perceive as non-essential material and become 'quite critical of teachers who don't stick to what's necessary to get them through the exams'. Interestingly, this reluctance to engage with non-essential material stands in opposition to the concern raised in the 2014 Ofqual document mentioned above, in which the practical element is positioned as attracting students. However, the lack of engagement with non-essential practical elements was further highlighted by Rob (a GCSE and A level Sociology teacher in an academy sixth form). Rob gave the example of his GCSE students, with whom he felt he could 'get away' with running a research project, with the implication that he would not be able to with his sixth form students. He was somewhat disheartened when assessing the practical usefulness of this theoretically useful task, commenting 'invariably... they produce a document, but they didn't actually do any research'. This gives the impression that even at this stage of their education students are being shaped by and are very aware of the centrality of the exams

to their success in a performativity culture. Ultimately, rather than increase teachers' autonomy, the lack of a *requirement* of such activities appears to actually limit their opportunities to exercise their pedagogy.

The objectives for qualification assessments, along with relative weighting, are set by Ofqual, building upon the Department of Education's subject content documents. Awarding organisations must meet the resulting subject level conditions, along with other requirements, in order to be able to award qualifications in each corresponding subject/level. In terms of the GCE subject level conditions and requirements for Sociology, we see that content is referred to as landing in one of two camps: 1) sociological theories, concepts and evidence; 2) sociological research methods; with the three assessment objectives delineating along lines of skill: demonstration of knowledge and understanding; application; and analysis and evaluation. Research methods are referred to in each of the three assessment objectives, although it is important to note that the advice provided in the GCE Subject Level Guidance for Sociology (Ofqual, 2014) notes that less emphasis should be given to research methods than theories, concepts and evidence. Whilst acknowledging the overlap between theories, concepts and evidence, this latter document positions research methods as distinct and separate, with permission for them to be targeted and assessed discreetly. Although, as will be shown in the following section, exam boards often attempt to embed research methods within specific topics.

4.3.3 Awarding Organisations

Given the majority of A levels are achieved in England (92% in 2013), and that the syllabuses have remained relatively stable in content, if not structure, pre- and post-reform, this section will focus on the three awarding organisations that set A level Sociology in England: AQA, Eduqas (WJEC)⁷¹, and OCR. AQA has the largest market share of all A levels taken in England (46% in 2013), with Sociology being no exception.⁷² Although the subject content documents are designed such that they are intended to allow flexibility of content of exam specifications, there is a great deal of similarity across the awarding organisations. All three specifications go some way to embed notions of evidence, trends, patterns and quantitative methods within the substantive topic areas and sociological theory.

The extent to which research methods, and quantitative methods particularly, are distinctly examined varied across the boards. The main differences between the boards lie in the level of detail provided in the specifications (e.g. the listing of specific terms), along with how much of an emphasis is given to research methods in and of themselves. Interestingly the two specifications with the highest amount of detail are the two for which research methods are only examined in one component (read: exam paper). The Board with a

⁷¹ It is worth noting that Eduqas is the new brand of WJEC, set up to issue A levels in England. Much of the content between Eduqas and WJEC syllabuses is similar (hardly surprising that they both have the same pre-reform legacy qualification preceding them).

⁷² Sociology A level: 84% AQA(23.4k), 13% OCR(3.6k), 4% WJEC(1k). Sociology AS level: 82% AQA(34k), 14% OCR(5.8k), 4% WJEC(1.5k). (Joint Council for Qualifications Data).

sparser specification, which also notably did not take the reform opportunity to amend content (unlike the other two), explicitly assesses research methods in two of its three components. Following the permissive nature of the recommendation to include students' own sociological investigations, two of the boards encourage active involvement with the research process. The third takes this one step further, requiring students to 'design, justify and evaluate a piece of sociological research'. This assessed engagement with the research process circumvents the lack of coursework requirement, going further than merely encouraging students to engage with the research process, even if only in a limited way. This circumvention was also used by Olivia as a way to engage her students with research methods.⁷³ Although, as testament to the pressures on the timetable, she stressed how this was done very rapidly and, therefore, somewhat superficially, dropping it if there was something more crucial (i.e. that could be associated with attainable grades) to cover or revise. Previous research by the Nuffield Foundation (2012) has investigated mathematics in Sociology A level (amongst other subjects), examining the extent, difficulty and type of mathematics used in examinations taken in the summer of 2010. The study found that as well as variation between the awarding organisations, there was variation resulting from the proportion of marks for which mathematics was necessary (which ranged from 1-3%) and marks which were could potentially be obtained using mathematics (ranging

⁷³ Interestingly, not as exam preparation, as one might expect in the performativity culture described here and throughout the thesis, as she used an alternate examination board.

between 12-19%). On the whole, the opportunity for demonstrating mathematical knowledge and understanding arose through reference to others work (hence the range of potential marks). None had complex tasks or calculations to perform. The remit of the current study goes beyond mathematical content, to encompass a collection of processes, skills and knowledge (in a similar vein as Payne, 2011). For this reason, a similar analysis of examination paper content was conducted, with more up-to-date papers from summer 2015.⁷⁴ It is worth noting that these papers were written and taken under the pre-reform examination system (but after revision of two of the three specifications used in the Nuffield study). Given that content and emphasis has not significantly changed pre- and post- reform, these exams were taken as a snapshot of a whole course and include both AS and A2 units from that year. Rather than the range of marks available being of primary interest here, where opportunities to use quantitative knowledge are provided by the exams and how quantitative methods are positioned by the framing of questions is explored. Outside of units specifically concerned with research methods, there was limited opportunity for reference to quantitative methods. This presented itself in one of two ways, there were some questions where students *may* have presented evidence or theory from a quantitative study, whilst other questions required at least some kind of quantitative awareness in terms of understanding trends.

⁷⁴ Following the example of the Nuffield study, the exam boards have been anonymised in this analysis.

More concrete examples are the questions asked within the units explicitly related to research methods. The boards all had two out of the four papers that made specific reference to research methods, given a total weighting of between 50% and 60% towards the final grade. The approach and extent to which these papers examined research methods both in context and as a distinct topic, varied between the boards; the total contribution of research methods ranged from about a fifth to a third of the final grade. These marks were differently obtained in the different exam boards. One exam board provided a number of questions, which ranged from short answer responses worth few marks, through to essay type responses worth half of the marks available on the paper. At the other extreme, another board had just one question per paper concerning research methods, requiring an essay type response worth between 40% and 52% of the paper. All used stimulus material in some form, with one board using short fictional examples (the first in the prior example), which contrasts nicely with another which used lengthy summaries of actual research (the second in the prior example). The use of fictional scenarios may well be useful for testing specific knowledge and understanding but when coupled with the fact that students tend to only engage with research methods in the abstract, does nothing to foster the importance that this area of knowledge and expertise has in the practical.

Of the questions that were explicitly about research methods, the extent to which quantitative research methods were examined varied enormously. For one board, which only had two questions explicitly about research methods, the methods for which students needed to be familiar in order to answer the

question adequately were qualitative. Where quantitative methods may have been used, it would most likely only have been as a position of contrast to the qualitative methods asked about and was by no means required by the mark scheme. Indeed, whilst the mark scheme makes clear that quantitative methods may have been used to answer some questions, throughout this Board's papers the emphasis is very much on the qualitative and theoretical.

In contrast to those for which knowledge, understanding and skills related to quantitative methods were not explicitly tested, one Board's examinations did have questions that required knowledge of quantitative methods. However, the way in which these questions are framed becomes problematic. Whilst in a later paper a balanced 'strengths and limitations' question is asked (in relation to official statistics), the earlier research methods paper requires candidates to list the 'problems' of quantitative methods. This problematic positioning of quantitative methods is not something which is found in relation to the assessment of qualitative methods. Indeed, the last exam board requires that candidates design a qualitative study, in contrast to the quantitative one presented in the stimulus material. This board gives the least weight to research methods in its exams but the innovative engagement with research design makes it stand out. Although not explicit, it could be argued that requiring students to design a qualitative study privileges these techniques, certainly qualitative methods carry more weight in the exams by this Board.

Qualitative research methods were referred to much more frequently than quantitative within all three awarding organisations' exams for this period. There was little required quantitative knowledge, as well as relatively little opportunity to demonstrate in-depth, balanced understanding of quantitative techniques and issues. Whilst there was some need to understand patterns and the use of official statistics, it is notable that they tended to be presented as problematic in direct evaluation. It has been noted that these were pre-reform exams. Given the increasing focus, over recent years, on the development of quantitative knowledge and skills within education more broadly (see Chapter 1 for an overview of some of the initiatives arising out of this numeracy push), it is interesting to note that the quantitative content does not appear to have increased in the post-reform Sociology specifications. As discussed elsewhere in this chapter, there has been little reform of content or focus within the Sociology curriculum. Furthermore, the opportunities for demonstration of quantitative knowledge has been reduced under the current (post-reform) examination system which has seen a reduction in the number of papers which explicitly address research methods.

Exam specifications are not the only mechanism by which awarding organisations shape the curriculum. They also develop a wealth of resources to be used alongside these in an attempt to support the teaching and learning of the content included within their own specifications. These resources include, for example, planning and recruitment resources, teaching resources (including Teacher Network Groups), and assessment resources (including actual and specimen question papers, mark schemes and examiner reports).

It is worth noting that there are other resources available, for example many of the teachers interviewed created their own resources, using their own knowledge and utilising online resources. HEIs and professional organisations also play a role, although the former may not be particularly formal or readily accessible. With regard to HE involvement, a particularly proactive teacher described how he had developed a working relationship with a local university's sociology department who provided information about how they used (qualitative) research methods in their own work.

Whilst many of the aforementioned resources are predominately aimed at supporting teachers, a student market exists for textbooks, revision guides and unit specific student support materials tailored specifically to each of the awarding organisation's specifications, some of which are produced by the exam boards but others of which are produced by the wider publication industry.⁷⁵ Indeed, whilst Platt (2008) notes that some introductory texts to Sociology cater to A level as well as undergraduate students, it is the case that the majority of A level publications are exam specific. The narrow focus of these textbooks (in terms of explicitly only addressing the content of the exams) was raised as a concern in research examining fitness for purpose of A

⁷⁵ The separation between awarding organisations and the publication industry is by no means definitive. Indeed, Pearson operate as both the largest publisher of educational works *and* as an awarding organisation. (under the Edexcel brand). Pearson are the largest education publisher in the world, despite recent declines in sales of textbooks in the US market (Sweney, 2017). This decline highlights the importance of changing specifications, which require revised editions of literature, in sustaining this part of the publication industry. Essentially, new specifications create new revenue for publishing houses. Such vested interests in an exam-driven system, which feeds an industry of specification-specific textbooks and student guides (e.g. course study guides and revision guides), cannot be viewed as anything other than problematic.

levels (Higton *et al.*, 2012). Related to the purpose of the A level examination (as discussed in Chapter 2), there is a concern that a system that does not reward wider reading does not adequately prepare students for the level independent study expected of them at undergraduate level. This echoes the criticism raised by one of my teachers, who placed the blame for a historical criticism she had at the feet of the awarding organisations rather than the text books (with argument that exam papers could be kept more up to date than text books).

In terms of content then, the text books are dictated by the content of the specification. We can think of these stages of development of the written curriculum as building upon one another, developing depth and detail as they get closer to use by the students themselves. As such, the text books treat quantitative methods in much the same way that the exam specification does. Both contexts reproduce the widespread, and problematic, misconception of quantitative methods being solely associated with positivist approaches. This is coupled with an association with 'official' modes of investigation, resulting in quantitative methods being treated as a site of critical engagement in a way that qualitative methods are not. An example of this, and a return to notions of differing modality, appears in a revision guide for the leading awarding organisations specification. The revision guide breaks down each module by topic and provides example questions and advice on how to answer these examples. For research methods, experiments, questionnaires, interviews, observations, official statistics, and documents, are all separately covered. The advice for each of these example questions recommends balanced responses

on the strengths and weaknesses of each method and uses prescriptive language, such as 'should', 'refer', 'consider', 'examine', for all but the example question for official statistics. The tone changes for the question on official statistics which presents an emphasis on the limitations, with prescriptive language for what limitations to cover and permissive language for the consideration of strengths. Even though the question asks for an assessment for strengths and weaknesses, strengths are apparently seen as less important and are less readily associated with a quantitative/positivist approach. The permissive or prescriptive nature of language used throughout all of these documents signifies the relative importance attributed to aspects being presented. It also ties to how one approaches a syllabus. As will be shown in the following chapters, a response to the performativity culture of highly prescribed, high-stakes examinations is one of instrumentalism. This is shown to be the case for both teachers and students and suggests that if something is not positioned as a requirement, it may well be overlooked in favour of things that are.

4.4 Teachers and research methods

The position of teachers has been interspersed into the above and will be developed more fully in the following chapter; regarding the latter, this will be in terms of the way their interaction and understanding of the written curriculum and discipline is influenced by and shapes their own understanding of their role as a teacher. For now, it is worth considering the research method content of the curriculum and whether teachers consider the level of content

sufficient for the subject, with special consideration of the quantitative content of the discipline. The interviews were conducted with the quantitative push within HE very much at the fore of my mind and so much of the discussion centres on quantitative, rather than qualitative, methods. Both the interviews and questionnaires revealed a diversity of opinion on this topic, not unlike that found in the literature and discourse in HE. Whilst the focus of the research was on Sociology, Psychology was also used as something of a comparison. An impression emerged, throughout implementation and analysis, of two disciplines that have different approaches towards research. On the surface, this is the apparent in the differing preferences of the majority of the two disciplines, with Sociology leaning towards the interpretivist and qualitative and Psychology towards the positivist and quantitative. This surface difference masks the much greater level of diversity present in the two disciplines. Whilst there are those in Psychology who use qualitative methods (social psychologists particularly), this is the minority, with the rest accepting the 'truth'⁷⁶, as they see it, of quantitative methodology. Reflecting this, the analysis of the Q-sort activities (see Chapter 3 for details of the analysis) with Psychology teachers revealed few, and very similar, shared perspectives regarding research methods and their students, the A level, and in terms of the discipline.

Within both groups there was greater agreement when it came to perceptions of their students, with increased diversity vis-à-vis the A level course and still

⁷⁶Notions of 'truth' become particularly problematic given the replication crisis evident in the psychological literature (e.g. Open Science Collaboration, 2015).

greater diversity in terms of the discipline. However, the Psychology teachers demonstrated a greater level of agreement between their viewpoints than did the Sociology teachers; indicating that the Psychology teachers had a more consistent view of the nature of research methods within their discipline. This is interesting and perhaps slightly unsurprising, given that there is greater methodological diversity within sociology than psychology, particularly in relation to the theoretical foundations from which the methods stem. Whilst there is some variation in the methods used within different branches of psychology, they all tend towards a traditionally 'scientific' approach to research, grounded in the natural sciences and Popper's notions of falsification. Sociology, on the other hand, is much more diverse, with social researchers drawing on a range of theoretical underpinnings which, in turn, affects their beliefs about the nature of methods within the discipline. Interestingly, the Sociology teachers raised several theoretical approaches as missing from the items used in the Q-set, including verstehen, Marxism and postmodernism. These various approaches suggest an openness and willingness to question and re-evaluate the nature of the truth that sociology is trying to measure. Whilst the Psychology teachers appeared to have the same level of variety when it comes to various measures of 'truth', they were preoccupied with the term validity, which in itself is necessarily about truth claims in research.

The Psychology teachers' preoccupation with validity was exemplified in the response received when a psychology teaching group was asked to distribute the questionnaire, which utilised Q-sorting tasks. The concerns preventing the

group from distributing the questionnaire centred on grounds of validity of the measure. The method was unfamiliar to them, with Likert-type scales for attitudinal items much more common in the field. Fundamentally, it appeared that they did not consider the method to be meeting the assumed intention of the research (i.e. it was not measuring what they thought it was intended to measure). This is a neat vignette of an attitude towards research that many of those in this discipline appear to hold, with a particular view of the 'proper' way to research individuals. This contrasts with the response from the Sociology teaching group, who were open and interested in this 'new'⁷⁷ methodology. This openness and interest may well stem from a methodological pluralism and/or the diversity of methodology which already exists within the discipline, creating a culture which is receptive to novel and innovative techniques. The notion of truth and validity also play a role here. Whilst the psychologists' notion of validity concerns itself with some objective truth with external reference, the sociologists' notion tends to be concerned within subjective truths which have reference within individuals. As such, the former tends to rely on proven methodology which has been previously validated (e.g. scales of measurement which have been subjected to tests of internal consistency), whereas the latter is less concerned with the tools of measurement than the accounts and experiences it uncovers. These positions can be differently critiqued as running the risk of methodological fetishism on

⁷⁷ New as in 'new to them', denoting that those encountering it are unfamiliar with the technique.

the one hand (the former) and a lack of rigour on the other (the latter).⁷⁸ These arguments around methodological difference, plurality, and otherwise are explored throughout this thesis in some respect or other, as is the problematic nature of impermeable methodological boundaries (also see Capdevila, 2007). The refusal from the Psychology teaching association to distribute a survey which did not fall within their own methodological boundaries is an instance of such problematic boundaries becoming manifest.

Whilst perhaps not overly surprising, the diversity demonstrated by the Sociology teachers warranted further investigation. Whilst the research method arena appeared to be accepted and coherent within Psychology, the level of diversity both within the Sociology teachers and the discipline more broadly indicated a space in which potential tension may occur, needing to be explored and better understood. As well as exploring the relative importance given to research method items within the A level and discipline (see Chapter 3 for methodology and Chapter 5 for a more in-depth discussion of the results of these), the questionnaire contained a measure which considered the extent to which the nature of research in sociology may be quantitative or qualitative. The results of this are shown in Table 4. As might be expected, there is a lean away from the quantitative with the majority of the sample considering the discipline to be mixed methodologically and the A level syllabus reflecting this.

⁷⁸ See Johnson, Long and White (2001) for similar concerns raised about methodological pluralism in a qualitative context.

Table 4: Nature of research in sociology

	Qualitative % (n)	Somewhat qualitative % (n)	Mixed % (n)	Somewhat quantitative % (n)	Quantitative % (n)
Fundamentally, sociology is...	10 (2)	10 (2)	75 (15)	5 (1)	0 (0)
The impression given by the A level syllabus is that sociology is...	5 (1)	10 (2)	80 (16)	0 (0)	5 (1)
Personally, I am drawn to the...	15 (3)	40 (8)	30 (6)	0 (0)	15 (3)

In something of a contrast to the results of the questionnaire, when interviewed several teachers made reference to the oppositional position quantitative and qualitative are placed in and how they reluctantly had to teach this 'false dichotomy'. This is distinct from meeting the truly integrated understanding of mixed-methods⁷⁹ advocated by Yin (2006) and paints a picture of a 'methodological eclecticism' (to use Teddlie and Tashakkori's (2012) language). For the teachers, this always erred on the side of qualitative being dominant, with teachers positioning sociologists as qualitative researchers who 'do a little bit of quant alongside' (Toni, specialist college). Even if some teachers present the discipline as truly mixed, the biases they hold themselves can influence how the students come to understand the discipline, particularly given the common lack of prior exposure that students have. Whilst tempting to focus on student performance, Blazar & Kraft (2017)

⁷⁹ As distinct from methodological pluralism. See Deetz (1996) for an insight into how reduction of methodology to methods may be considered problematic.

present long-term student outcomes as related to the belief held by their teachers. Much of the literature concerns in this area concerns subjects/topics for which high levels anxiety are found amongst both students and teachers, such as mathematics. One such study, found that student attitude towards mathematics was related to teachers' anxiety, with the effect more salient for female students of female teachers (Beilock *et al.*, 2010).⁸⁰

Although few reflected on these issues during interview, James (a Sociology teacher at a sixth form college) alluded to the influence that his own preferences had. Imagining how his students identify with the subject he considered his role stating:

'[James is] 'this Sociology teacher but he's not very good with numbers and I'm not very good with numbers so I can empathise with him. This *must* be the subject for me because we're the group that doesn't really do numbers.' So, [we] sort of label ourselves really.'

The quote from James ties into notions of labelling and the effect that those labels can have on the status of a subject, particularly within a school/college setting. There is no doubt that a hierarchy of subjects exists within the school setting. This can be seen in the distinction between abstract academic subjects (afforded higher status) and practical, often vocational subjects (afforded lower status). Partly this is a traditional distinction (Bleazby, 2015) but modern

⁸⁰ Suggesting that sex-linked modelling was playing a role (see Bussey & Bandura, 1984).

influences also contribute to the perceived hierarchy. The modern influence particularly shapes the hierarchy within academic subjects, with those chosen for inclusion in the English Baccalaureate and the recognition of 'facilitating subjects' (Russell Group, 2016) considered of higher status than others. Those subjects seen as positioned at the top of this hierarchy are those of mathematics and science. Bleazby (2015) puts forward a compelling argument as to why this is the case, starting with Plato through to the amenability to the modern education system. If we take it that these are the highest status subjects, then other subjects which utilise their methods will also be treated in this regard.⁸¹ As such, those subjects which explicitly utilise quantitative methods, associated with numeracy and the scientific method, are regarded as higher status than those that do not. Hence, Sociology is at a disadvantage in terms of the hierarchy of school subjects, it is not part of the English Baccalaureate, nor is it considering a facilitating subject, and it does not overtly promote what is widely understood to be the scientific method nor is it particularly quantitative (as seen in the above analysis of the written curriculum).

In addition to the aforementioned, it is a new subject, in two ways. It is new in terms of its existence, compared to other subjects, with development as a school subject only in the latter half of the 20th century (see Chapter 2 for more on the history of the development of the subject). Secondly it is new to many

⁸¹ Rather than a tenuous link, the use of similar methods is tied to the language of the subject and the hierarchical development of knowledge (along similar lines to Bernstein).

students which study it. Although the characteristics of the typical student who studies Sociology will be explored in Chapter 6, it is interesting to note the insight of teachers in terms of recruitment practices of their institutions. It appears that students who are considering Sociology but who are seen as 'quantitatively minded' (i.e. they have what might be regarded as a 'reasonable' grade in GCSE Mathematics⁸²) are steered towards higher status subjects, in which Psychology is included, given its level of mathematical content and inclusion in the Department of Education's Subject Content for Science. Clearly, steering these students away from Sociology may well contribute to the quantitative shortfall seen elsewhere in the discipline.

The question of status is clearly tied up in a number of issues and impacts upon recruitment, with more than one teacher referring to low status as a barrier to students taking the subject on. Internally, some teachers try to address this with the choice of syllabus, with claims that the 'most academically rigorous' specification is chosen, with the hope that this will change the perception of students and staff. The issue of how 'scientific' the subject appeared, and whether an increase in quantitative content may affect status, was considered by some teachers. On the one hand, there were those, like Olivia (a Sociology teacher at an FE college), who recognise the quantitative push arising from political values of government and management but who sought to resist such suggestions. Olivia puts it thus:

⁸² Often a grade C at GCSE Mathematics is required for enrolment onto a Psychology A level course but not for enrolment onto Sociology A level.

‘Although more quant would raise status from scientific community and government, raise our profile, but that may not be what we want to do as sociologists... whether we want to compromise what we’re trying to achieve with research to meet the standards of other disciplines.’

Perhaps unsurprisingly, Olivia considered herself and the discipline to err towards the qualitative, claiming that qualitative methods were simply more appropriate for sociological investigations. There was a sense of pride in the resistance that sociology has to this kind of pressure indicated here; a resistance to the use of quantitative methods which would be a sign of acquiescing to the mainstream. This position sits contrary to that presented by other teachers who argued *for* an increase in quantitative methods in the A level. It appears that, to an extent, those who erred towards qualitative methods conceptualised sociological investigations as concerning the stories of individuals, whilst those who considered the purpose of sociology to study phenomena at a societal level lamented the apparent lack of rigorous quantitative methods in the curriculum.

Another teacher who stressed the importance of an understanding of sociology as the study of society and not of individuals was Aaliya (a Sociology teacher at a 6th form college). To that end, she argued that the appropriate methods for studying society are quantitative and was disparaging of those who pursue a qualitative agenda, pointedly asking: ‘whatever happened to

Goldthorpe?'.⁸³ Whilst others were relatively happy with the content of the written curriculum, she took it upon herself to implement additional exercises in quantitative methods, not directly linked to the final assessment. Another 'quantitative' teacher, Michael (a Sociology teacher at 6th form college) also stressed the study of society, considering himself as a positivist rather than interpretivist.⁸⁴ Interestingly, he equated quantitative work with the scientific method and, unlike the division implied in Olivia's account, apparently considered sociology to be a part of the scientific community. He summarised it thus:

'the origin of sociology is to be scientific, otherwise we just end up studying our own esoteric avenues of what we're interested in and it doesn't really broaden out to a field of knowledge that is objective'.

These contrasting positions somewhat reflect the ongoing debates within the discipline more broadly. It is interesting to note that those who erred towards the qualitative were relatively happy with the apparent 'emphasis' on quantitative methods, which the review process identified, but that this emphasis was not recognised by those who erred towards the quantitative (nor by the preceding analysis of the written curriculum).

⁸³ This is a particularly interesting position to juxtapose against the nature of quantitative methods used in psychology to study individual differences.

⁸⁴ Possibly demonstrating a simplistic notion of the relationship between quantitative methods and positivism present throughout the quantitative/qualitative debate outlined here and discussed elsewhere in the thesis.

4.5 Summary

This chapter offered insight into the processes and actors which develop and enact the written curriculum. Inclusion of an outline of the recent reforms allows for the context of the content to be better understood and, along with teacher interview data, aided analytical engagement with the requirements, boundaries and guidance therein. The return to a linear system for A levels in England, with grades 100% determined by performance in end of course exams, results in the highest of high-stake assessment practices. Although the reforms are thought by some to combat the instrumentalist approach that appears rife in an exam-heavy course (e.g. Hayward & McNicholl, 2007), increasing the importance of final exams does nothing to address the performativity culture within which schools and colleges operate and may, perversely, increase the instrumentality of teachers and students. Indeed, as discussed in this chapter, the content and structure has changed little, save for the timing of examinations.

The teachers' accounts included in this analysis reflected this instrumentality. With regard to research methods particularly, the lack of a requirement of a practical element perversely limited teachers' opportunity to include one should they have wished, with elements prescribed as required taking precedent in a tight timetable. Detaching the study of research methods from practical work becomes problematic and begins to draw lines between subjects and disciplines (explored in more detail in the following chapter). In this context, research methods are somewhat marginalised generally, with

quantitative methods marginalised still further. Despite the apparent ontological breadth and steps towards methodological pluralism hypothesised earlier in the chapter, when comparing sociology and psychology, there was little opportunity to demonstrate knowledge, understanding or even awareness of quantitative methods. Those opportunities that did exist often positioned such techniques as problematic, a contrast for qualitative, or as supplementary. This position was also taken by the teachers, who ostensibly position the quantitative/qualitative divide as a 'false dichotomy' but who tended to conceptualise the discipline as mixed or predominately qualitative, 'with a bit of quant', rather than pluralistic. Furthermore, few reflected on the influence of their own preferences, even when these did not marry with their perceptions of the A level or discipline. This chapter set out the context within which teachers operate, along with their varied responses to the 'architecture' of the subject. The following chapter further explores these variations between and within teachers' understandings of Sociology and these are negotiated within this context. Issues of the status of the subject and the, somewhat associated, characteristics of the typical Sociology student have also been introduced here. These will be touched upon again in the next chapter but explored in detail in the final analysis chapter.

5 A Tale of Two Sociologies?

5.1 Introduction

When we think of ‘sociologies’ we may think of the various sociological approaches that are taken in exploration of aspects of society such as religion, food and nutrition, disability and illness, the digital, sex work, and even everyday life.⁸⁵ In introducing the title history of her book ‘Sociologies of Disability and Illness’, Carol Thomas makes a somewhat apologetic explanation for her use of the term, claiming that thus far ‘sociologists have found it unnecessary to journey into the plural because their discipline has thrived upon theoretical diversification and empirical variety’ (p. 3). Given the plethora of places this term is now used, I would argue that use of ‘sociologies’ is less uncommon and ‘ungainly’ than Thomas suggests but that she is right to link it to the diversification and variety, as she puts it, within the discipline. Sociology certainly has a larger than usual (in terms of other disciplines) range of theoretical traditions and frameworks, from which perspectives of substantive phenomena can be studied. These various traditions and understandings of what it means to study aspects of society in a sociological manner have their own associated methodological approaches and techniques. The idea that the discipline thrives on this diversity is somewhat contentious, with Abbot (2000) arguing that it is this very diversification and

⁸⁵ For examples of publications in this area see Blasi & GiorDan (2015; religion); McIntosh (1996; food and nutrition); Thomas (2007; disability and illness); Daniels, Gregory & McMillan Cottom (2016; the digital); Hardy, Kingston & Sanders (2016; sex work); Neal & Murji (2015; editorial foreword of a special edition of *Sociology* on the sociologies of everyday life).

lack of central organising tenet (methodological, theoretical or conceptual) which endangers sociology as a coherent discipline. Rather than a central tenant he argues that sociology is organised around empirical phenomena, resulting in a multitude of acceptable methods and theories to work from. When discussing the sociologies of whatever empirical phenomena is under investigation, it is more common to frame these in terms of the theoretical tradition or framework, as this is thought to both guide and shape the methodology that one chooses.

Reflecting the diversity of theoretical approaches, there are also diversity of methodological approaches within sociology. As an alternative approach to defining 'sociologies', we can consider this in terms of the philosophical aspects and/or the empirical aspects of research. The philosophical standpoints, i.e. the ontological and epistemological beliefs, taken by researchers are often referred to as 'perspectives' in A level texts (see Chapter 4 for more discussion of the role of the written curriculum). They tend to be associated with certain theoretical traditions, and major theorists, as well as deeming appropriate certain methodological approaches and empirical methods for data collection and analysis. Using a simplified example, this can be demonstrated with the two traditional 'perspectives' of positivism and interpretivism being commonly understood to prefer quantitative and qualitative methods and techniques, respectively.⁸⁶ Indeed, those within the discipline do talk about quantitative sociology and qualitative sociology as

⁸⁶ This is an admittedly crude dichotomisation but one which is oft repeated. My own position on the matter is offered in Chapter 3.

separate and distinct from one another, especially when referring to their own professional identity (there are colleagues within the discipline that refer to themselves as either a qualitative or quantitative researcher, often seemingly at the exclusion of the other). Rather than focus on this distinction within the discipline, this chapter is purposefully entitled 'a tale of two sociologies' to highlight a different distinction: that between the sociology that is practised within HE and the Sociology that is taught in schools and colleges.

In this chapter, the subtlety of sociology with a lower case 's' and Sociology with an upper case 'S' highlights the distinction of sociology as a discipline and Sociology as a subject. This distinction is particularly pertinent when considering what is taught at Sociology A level and how teachers conceptualise their role. Bernstein's principle of pedagogic discourse is useful here in understanding how subjects in schools are distinct from the disciplines in universities from which they stem. Put simply, Bernstein proposes that as a discipline moves out of its site of production (in this case, the university) into an educational setting (in this case, the school or college), it is 'ideologically transformed... from an unmediated discourse to an imaginary discourse' (p.33) through the pedagogical acts of selecting what is taught and how it is taught. Given the UK model of designing and implementing curriculum, it would be easy to equate the *what* with the written curriculum, whereby a discipline is transformed within the state level 'official recontextualising field', and the *how* with what takes place in the classroom, where it is transformed by teachers in the 'pedagogic recontextualising field'. Although often taken to refer to just the written curriculum, 'curriculum' can be defined such that it includes

teaching and learning (Jung & Pinar, 2016). Leaving aside learning for the moment, both the *what* and the *how* of recontextualization are considered aspects of the curriculum here. Whilst useful to separate them out in the manner of Bernstein for conceptual and analytical purposes, it is important to bear in mind that, in practice, these fields overlap and interact with one another with varying degrees of influence and power (as was seen in discussion of the written curriculum in Chapter 4).

The distinction between subject and discipline also exists within HE. In fact, Parker (2002) reflects that this distinction has been made the focus of HE as part of its 'commodification'. She highlights important characteristics of each thus:

'Subject' is reassuringly concrete—a subject can be defined, has a knowledge base which can be easily constructed into a programme of knowledge acquisition and, perhaps most importantly, of quantitative assessment. Subjects are inclusive—anyone studying on a subject programme belongs, whereas 'discipline' brings with it tricky questions about access and boundaries: about inter- and multi-disciplinarity, about who can be said [to be] practising the discipline. However, subjects are also passive—they are taught, learned, delivered.'

(p.374)

Parker reiterates my distinction between subject and discipline along lines of practise. The 'tricky questions' become trickier when we think of disciplines

such as sociology, which have what Bernstein (1999) refers to as a weak grammar with multiple specialised languages, where 'acquirer[s] may well be anxious whether he/she is really speaking or writing sociology' (p.164). Placing this aside for the moment, Parker appears to create a hard distinction between the two; demonstrating an understanding of teaching and learning that appears to be focussed on the transmission and reception of content. This stance, popular in recent years, where a good teacher has been conceptualised as one who is a 'competent craftsman' (Moore, 2004; Connell, 2009) or 'skilled technician' (Mitchell & Lambert, 2015), has been challenged in recent debates advocating a 'return to knowledge' (as epitomised by the title to Young's 2008 book *Bringing Knowledge Back In*). I will return to these debates and conceptualisations of what it means to teach a subject later in this chapter, focussing now on whether the teachers in my sample recognised this apparent distinction between the subject that they taught and the discipline from which it was drawn; that is whether they made a distinction between Sociology and sociology.

5.2 Teaching sociology

A recognition of a distinction between sociology as a discipline and Sociology as a subject may well require a knowledge of the discipline from which the subject is thought to be distinct. This could be taken as read when considering sociology teaching within HE, where teaching happens at the site of production, by the practitioners themselves. However, this has not always been the case. As discussed in Chapter 2, following the rapid expansion of

university places within the 1960s saw demand for sociology lecturers increased with many of those brought in to teach holding first degrees in different disciplines (Platt, 2012; Payne, 2014). Even today, not all those who teach sociology modules within HE necessarily have a sociology background. A particularly relevant example for this study is the case of quantitative research methods modules, where few (as little as 1 in 5 according to Williams *et al.*, 2004) may have a background in sociology, instead apparently ‘brought in’ for their methodological expertise.⁸⁷ Much of the existing literature on the teaching of undergraduate sociology, both in the UK and the US, often assumes that those teaching tend to be sociologists first and foremost, and teachers of sociology after that. Particularly within the higher status, research-led institutes, where lecturers tend to operate under a ‘research and scholarship’ contract, teaching is often conceptualised as a necessity which allows for the proper work of researching. Under such a model, sociologists must learn how to teach. Similarly, when we think of teacher training within secondary education broadly we may well think of a transition from subject specialist to pedagogue (see Shulman, 1987). Whilst not all teachers of A levels need be subject specialists, or indeed require a formal teaching qualification (requirements were revoked in September 2013 for those teaching in Further Education colleges), it is the case that the standard route to gain access onto subject specific teacher training courses for many disciplines is to obtain an undergraduate degree in the subject specialism one wishes to go into. This

⁸⁷ The reasons and implications for this are discussed in Williams, Sloan and Brookfield (2017).

initial training in the discipline arms these individuals with knowledge of the subject in terms of content but also provides a more tacit understanding of the culture of the discipline. The following implication being that those who do not have this disciplinary background are less likely to understand the culture, or what Bernstein might refer to as the language, of the discipline.

Information from The Universities and Colleges Admissions Services (UCAS, 2016) shows that there is no subject specific route for Sociology as a stand-alone subject, such as exists for other secondary curriculum subjects, in teacher education.⁸⁸ Rather than a single subject pathway, those training to be sociology teachers along a PGCE pathway must take a broader 'Social Science' route. This PGCE route is variously described by providers as covering 'sociology and psychology as main subjects' (University College London), 'sociology, psychology, politics and law' (Manchester Metropolitan University), 'psychology, sociology, politics, law, health, and social care' (Bishop Grosseteste University). The variety of disciplines under this umbrella term 'social science' is also reflected in the entry requirements onto these courses, the ultimate pertinent point being that one need not have prior discipline specific knowledge to become a teacher of Sociology A level. Furthermore, trainee Sociology teachers are not offered the same degree of specialisation as trainee teachers of other subjects; an effective 'specialism ceiling' exists for those wishing to become Sociology teachers. More broadly, we know

⁸⁸ In fact, Sociology is the only subject out of the top ten most popular subjects not to have a single subject pathway. It is important to note that although single subject PGCEs exist for other subjects, there are many other ways in which teachers may come to teach a subject within a school or college setting.

anecdotally that teachers of a given subject, particularly outside of the 'core'⁸⁹ subjects, are not necessarily always subject specialists. This becomes problematic if the aforementioned popular contemporary conceptualisations of teachers as skilled technicians (Mitchell & Lambert, 2015), able to teach any content, are rejected.

Turning to my sample, I am drawing on both the Q-sort and interview elements of my work with A level Sociology teachers (see Chapter 3 for details of data collection and analysis). In terms of the Q-sort sample, only half of the teachers held a first degree in sociology (either as a single or joint honours), with the others holding first degrees in other social science (criminology, politics) or humanities (history, theology) subjects. As a brief re-cap, the Q-sort procedure required the teachers to sort a selection of research method elements, taken from the written curriculum, under several 'conditions of instruction' (Watts and Stenner, 2012). The Q-sort allowed for a breadth of items to be sorted, from theoretical and epistemological concepts through to data collection and analysis terms, with room for the teachers to give reasoning for the relative placement of items. The conditions of instruction (i.e. the questions) by which the teachers sorted the items concerned the

⁸⁹ Considering 'core' here to mean subjects deemed central to students' education by inclusion in the National Curriculum. Sociology has a notable absence from the primary curriculum as well as from the performative English Baccalaureate measure. The English Baccalaureate measures school performance by those students who have gained a GCSE in English, mathematics, history or geography, the sciences and a language. See Long & Bolton (2017) for a briefing paper on the implementation and intentions of the English Baccalaureate. Additionally, Sociology is absent from the A level performance measure of AAB in at least two facilitating subjects.

students, the written A level, and the discipline itself. It is through examination of the last two that a picture of the level of shared understanding amongst the teachers emerges. Given that the same elements of the syllabus were sorted each time across the conditions of instruction, we can also determine whether the teachers demonstrated a recognition of a discrepancy between the subject and discipline. Although only concerned with one aspect of the syllabus, the shared viewpoints found in the teachers and their explanations of these viewpoints, along with interview data from exemplars of the positions, allows for extrapolation and interpretation which moves beyond the confines of research methods teaching. I will start with the first of these, exploring teachers understanding of the subject and their approach to teaching it.

5.2.1 Approaches to the A level

Analysis of the Q-sort data shows that the teachers appeared to fall into one of two camps when it came to what was considered important to the A level. To explore teacher perceptions of the A level, the teachers were asked to sort the 33 items under a condition which asked 'how important are these concepts to A level Sociology?'. They were sorted into a quasi-normal, pyramid array from most unimportant to most important. Whilst every individual held a unique perspective, in that their final sorted arrays were distinct from one another, the Q-sort analysis allowed for shared perspectives within the sample to be uncovered through the use of dimension reduction techniques (in this case principal components analysis). Following statistical rules of thumb and substantive interpretation, the two-component solution was considered the best solution capturing all but two of the teachers' perspectives (see Chapter

3 for details on the procedure and how these types of decisions were made). The two viewpoints held by these distinct groups can be seen in Figure 12: *Theoretical A level Approach* and Figure 13: *Instrumental A level Approach*. These present what we can consider to be the average position of those within each group and are useful to compare side-by-side in analysis and interpretation.

Before individual interpretation of the two groups, it is worth noting that there was some agreement in terms of the relative importance of items compared to others. These can be seen in Figure 12 and Figure 13 by the italicised text. These are known as consensus items, which are identified statistically by similar placements within each of the groups' arrays. The relatively few consensus items (9 out of 33) indicates a relatively large degree of diversity between these two groups. Whilst it is tempting to assume that the lack of consensus could be due to the diversity between the syllabuses being used it is worth noting that the vast majority of the teachers tended to use the same syllabus (92% used AQA). In any case, identification of placement consensus tells us nothing as to the reasoning behind why items were considered to be less or more important than others. The teachers were asked their reasoning for placing the items that they placed at the extreme ends of the sorting pattern. The reasoning behind placement of even those items found to be consensus in the average group array begins to reveal the distinction between the two groups. Whilst the teachers appeared to agree on the relative unimportance of case studies, experiments, longitudinal studies and access to

the A level, reasons given for these placements ranged from the instrumental in the *Instrumental A level Approach*: 'not used so much at A level' (case study; ST8), 'less important for [the] exam' (experiments; ST1) and 'not on my syllabus' (experiments; ST7); to the theoretical in the *Theoretical A level Approach*: 'it is my belief that good sociological research cannot take place in artificial environments so experiments in this context are unimportant' (experiments; ST4).

The *Theoretical A level Approach* (Figure 12) perspective was the most straightforward to interpret with items towards the important side of the array concerned with theoretical and epistemological concepts, such as objectivity, subjectivity, theoretical understandings and positivism. Conversely, items towards the unimportant side of the array were more concerned with practical aspects of data collection (e.g. case study, survey, experiments) and forms of data (e.g. official statistics, patterns, trends). Considering the post-sort responses as to why items were placed in the extreme positions revealed that those identifying most strongly with this group tend to think that these aspects are 'fundamental'; with reference to theoretical understandings (ST6) and objectivity (ST19), specifically. Fundamental in this case implies that these items are key to understanding the link between theory and, presumably, those research methods listed towards the unimportant end of the array. Interestingly, this pattern is somewhat similar to those found in the first sort the teachers did of student perspectives, with the most important items here marrying with the most difficult items in the student sort (see Chapter 6).

Most unimportant

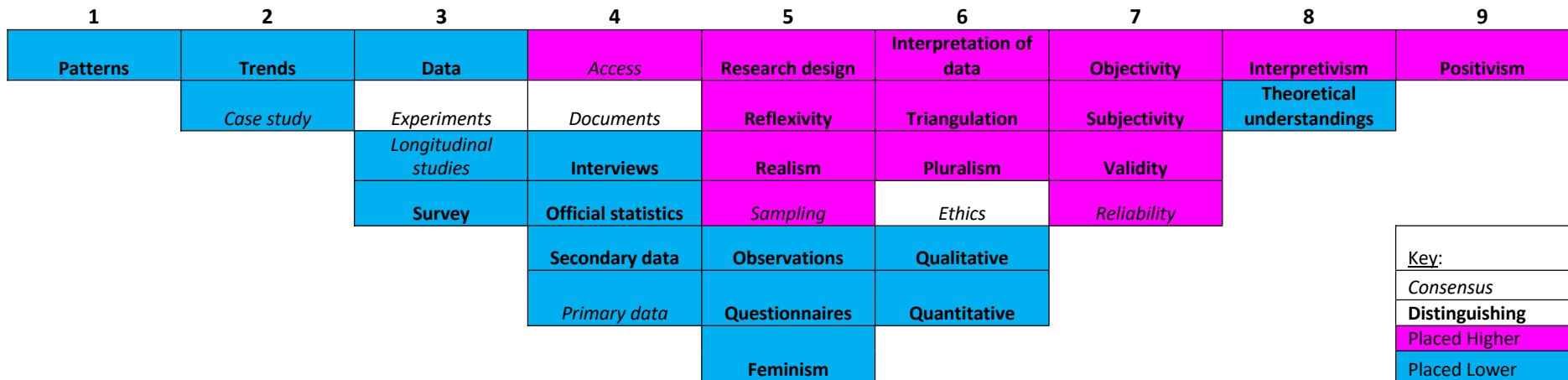


Figure 11: Theoretical A level Approach

Most unimportant

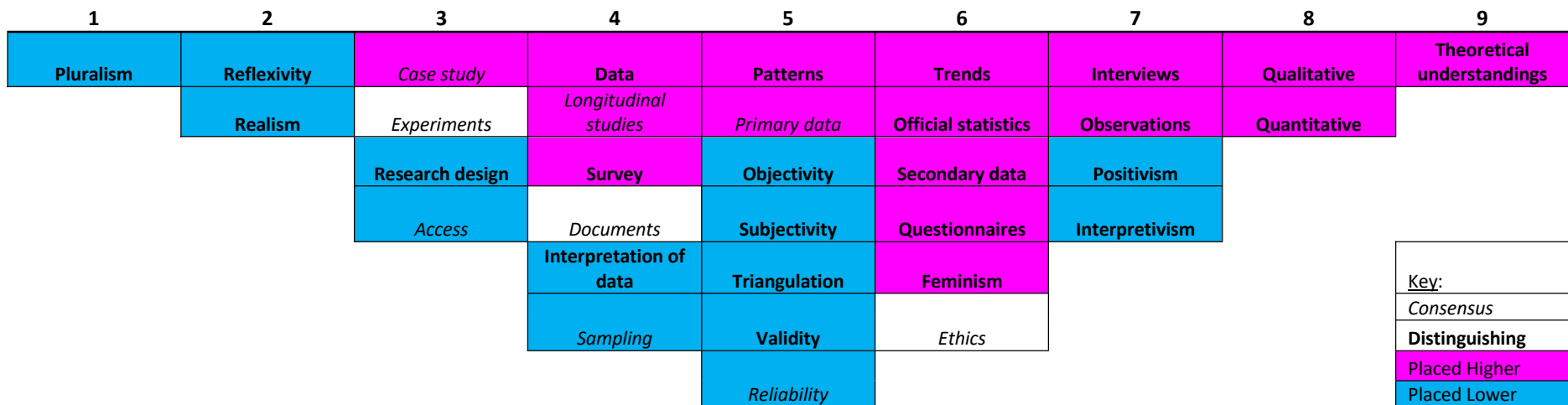


Figure 12: Instrumental A level Approach

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However, the items considered most unimportant to the A level are not necessarily those thought to be considered the easiest by students, rather it makes sense that these fundamental concepts that underlie research methods within sociology are complex and therefore necessarily harder for the novice to grasp. Coupled with reference to the discipline in terms of experiments (above), this viewpoint appears to be concerned with developing a deep understanding of the discipline, building knowledge upon an in-depth base of understanding.

On the surface, the *Instrumental A level Approach* (Figure 13) appears to have a relatively similar structure to the *Theoretical A level Approach*; indeed, the groups do have a moderate correlation of 0.42. However, inspection of the average weighted array demonstrates a perspective that is less clearly defined and conceptually organised. As has been mentioned above, inspection of the unimportant end of the array for the *Instrumental A level Approach* reveals some of the same data collection elements as found in the *Theoretical A level Approach*, although reasons given for these placements were markedly different. However, it also reveals some more complex concepts such as pluralism, reflexivity and realism being regarded as less important, relative to both the other group and other items within this group. Rather than the theoretical stance of group 1, for those in this group the reasons for placing these items here concern issues of the syllabus and exam rather than understanding of the subject itself. Along with the reasons given for the consensus research method items detailed above, this is highlighted in several of the post-sort questions with regard to pluralism: 'not covered in the A Level

syllabus' (ST18); and **reflexivity**: 'receives relatively little mention in textbooks exam specifications' (ST13)

To summarise, the two groups seemed to be differentiated by their approach to determining importance, which appeared to reflect their conceptualisation of what their role is (as will be explored in the following sections). One viewpoint represented what appeared to be a concern with fostering a 'deep' understanding of the subject, with theoretical and epistemological concepts given priority. Reasoning given for placement of items tended to centre on concepts being fundamental to understanding the rest of the items; these 'threshold concepts' (Meyer and Land, 2003) transforming students' thinking in such a way as to allow them to progress with their learning. The other viewpoint appeared to represent an approach which was more instrumental, with items prioritised by how frequently they appeared in the syllabus or how many marks were associated with them in terms of exams. To explore these issues further, in-depth interviews were conducted with teachers who were shown to have viewpoints that fell into one of these two groups. In what follows I will take the latter of these approaches first, arguing that an instrumental approach has associations with surface learning and teaching to the test.

5.2.1.1 An instrumental approach: surface learning & teaching to the test

A viewpoint which approaches importance of concepts in an instrumental way could be interpreted as one which may well foster a 'surface' understanding of the subject. Whilst the terms 'deep' and 'surface' are associated with approaches to learning adopted by students (as introduced by Marton & Säljö,

1976a&b, and later developed by several international groups led by Marton, Entwistle, Biggs, and Pask; see Beattie, Collins & McInnes, 1997), it has been noted by Biggs (with Tang, 2007) that teachers can influence the approach that students take. Interestingly, the converse was also found to be the case with at least one of my teachers, in that it was the approach of the student to the A level which influenced his pedagogic approach to the subject. When discussing the possibility of re-introducing a non-examined research element to his teaching practices in an extended interview, Charles (a philosophy and humanities teacher at a selective boys' grammar school) cited not only a lack of space within the curriculum for this but also commented that students are all too aware of the requirements of the exam specification and are 'quite critical of teachers who don't stick to what's necessary to get them through the exams'. In fact, across the interviews many of the teachers presented most of their students as pragmatic and somewhat strategic (see Chapter 6 for a more in-depth exploration of these conceptualisations). Rather than this be taken as an ability to switch between types of learning approaches (as in Volet & Chalmers, 1992), it appears to denote a strategy that *potentially* allows for the greatest return in terms of marks: that is a surface approach to learning. Along with external pressures, this can encourage teachers to take a 'surface' approach to their teaching, with a focus on content and exams rather than the 'deep' understanding which, I will argue, can be associated with Young's concept of 'powerful knowledge'.

Perhaps unsurprisingly, Charles' Q-sort fell into the group whose approach to determining importance to the A level was instrumental. Like most of those in

this group, he did not hold a first degree in sociology, nor did he teach A level Sociology as his main subject. Whilst unusual for my sample, according to the convenor of the BSA Teaching Group this is particularly common in school 6th forms, such as the one Charles teaches in. This lack of close familiarity with the discipline, or rather a familiarity mediated primarily by the subject content, may lead to an instrumental approach to the teaching of the subject which conceptualises the teacher as an interpreter and transmitter of the curriculum, a skilled pedagogue akin to the 'competent craftsman' and 'skilled technician' of Moore's and Lambert's descriptions. Some of the teachers were happy to and openly embraced this role, rather than strive to appear to be a subject specialist. For example, Charles argued that 'a lot of the skills are the same', when teaching different subjects and that there was simply new content with which he had to make himself familiar: 'as long as you know how to teach... [you] just [need to be] a step ahead of the students'. Here we can see the converse of what we might expect: rather than a shift from subject specialist to pedagogue, this teacher paints himself as a pedagogue becoming a subject content specialist. For these individuals, it appears that pedagogic knowledge and expertise are placed above content knowledge in terms of ability to teach a subject. As well as 'buying in' to the contemporary conceptualisations of what it is to be a 'good teacher' this may be a self-legitimation; something akin to a post-hoc rationalisation of the, sometimes uncomfortable, position of teaching a subject one is not trained in. If one is teaching a subject and is happy to discuss the teaching of the subject, a belief in the legitimacy of holding that position needs to be made; believing that as a

teacher, one holds the requisite skills to teach any content does just that. Drawing on Shulman's (1987) work we can see that not only are both pedagogic knowledge and content knowledge important (amongst other aspects) but that a deep understanding of the latter is also important in order to develop appropriate pedagogic content knowledge: that is 'things about their content which make effective instruction possible' (Grossman, Wilson & Shulman, 1989; p.25). Further, this suggests that this 'one step ahead' approach that Charles is overtly advocating, and which follows from conceptualisations of teachers as technicians or craftspeople, may not allow for the most effective teaching practices.

Some of those with a background in sociology also shared the instrumental understanding of the subject which those without a background in the discipline tended to display; they determined the importance of concepts in terms of frequency of occurrence in the syllabus or marks associated with them. There appeared to be a tension felt by these individuals between how they might want to teach discipline, a position determined by their pedagogical knowledge (general and content specific), and the demands and expectations placed upon them. Some of this centred around restriction in capturing students' imaginations with interesting aspects that have to be dropped from lessons 'if [those aspects are] not going to get them anywhere on the exam' (Aaliya, a Sociology teacher at a 6th form college who took this instrumental approach). As discussed in Chapter 4, this was also a concern of Rob's (a Sociology teacher at an academy) with regard to the project element run with his GCSE students. Part of the reason for a lack of engagement with the task,

was a recognition amongst the student body that the work would not be formally assessed. Interestingly, there was a sense that he could still 'get away' with this at GCSE but would not be able to at A level, with students becoming more 'savvy' as they progressed through their studies. In a sense, this strong learning culture amongst the students is akin to consumerism; students expect to receive and partake in that which is laid out in the curriculum: no more but equally no less. Similar to Charles, he painted a picture of those on the A level as the syllabus-savvy student, prepared to do only work which was required by said syllabus. Furthermore, whilst Rob recognised the pedagogic benefit of incorporating a practical element to the teaching of research methods, in terms of fostering a deep understanding of the concepts listed in the syllabus, he was clear about what his role was: 'at the end of it, what you're training them to do is to answer exam questions on research rather than being assessed on research that they do'.

The conceptualisation of the role and purpose that teachers play in the A level context paints an understanding of an 'educational end' (Shulman, 1987) equating to exam results, with the onus on teachers rather than students to achieve this. Aaliya highlights this saying that the feeling amongst teachers is that they 'have to get them [the students] as high a grade as possible'. This responsibility for grades, and the tension of what material to include was also felt by Michael, a subject-specialist from a 6th form college. He summarized the tension and pressure felt by teachers in their negotiations of what to teach in their specialist subjects: despite wanting to focus more on certain elements of the course 'until its rewarded more in the exam, with more marks, teachers

won't spend lots of hours on it because it's not where their marks are made or lost'. Here we can see the recognition of 'teaching to the test', presented almost like a tactical game (such as that described by Gleeson & Gunter, 2001), with a strategic balance of effort-reward considered. The focus of his talk here was teachers rather than students, suggesting the 'their' refers to teachers marks rather than students; reiterating the responsibility of success on the teacher (such as in Lambert's criticism of the current culture and fetishism of learning; see Lambert, 2011). In an era of performativity, where teacher effectiveness is measured by their positive impact on student outcomes (which are generally academic and summative in nature; see Muijs *et al.*, 2014), it is hardly surprising that teachers take ownership of the exam grades achieved by their students. Furthermore, that this performativity appears to sit in tension with other learning goals is hardly a surprise (see Watkins, 2010, for a meta-analysis that details the tensions between performance and learning orientated approaches).

Whilst the teachers here felt a pressure and accountability from and towards the students, they also recognised how the performance-orientated climate of their institutions, themselves reacting to the high-stakes (Hammersley-Fletcher & Strain, 2011) monitoring of the wider policy culture, affected their own goals and orientations. The influence of institutional climate was exemplified by Michael who stated, 'we're just under so much pressure for marks and grades, it's so clear that that's the message from management in any college: that it's all about maximising marks'. Here we see an example of the hierarchical nature of downward pressure from institution-level to

classroom-level (as Watkins, 2010, outlines). Whilst tempting to assume that a recognition of this pressure and tension may inspire teachers to subvert this, it is important to remember the role that context has in moderating, limiting and shaping individual teachers influence and agency (as recognised in the ecological approach to agency of Biesta & Tedder, 2007; see also Priestley *et al.*, 2012). Many of these teachers commented on the expectations held of them by management, students and parents to maximize grades, leading to these teachers to see this as their effective goal; a misrecognition of the purpose of education and the role of testing (although these can be many and contradictory in purpose; Newton, 2007). Furthermore, holding marks and exam syllabi central results in these teachers apparently 'teaching to the test'. Whilst this colloquial term is used in a derogatory manner in the press, perhaps following a narrow definition such as Popham's (2001), there is evidence amongst my teachers that this is the path that they take. Popham distinguishes between 'item-based' teaching, where teachers use exam questions (either real or 'clones') and which he equates with teaching to the test, and 'curriculum-teaching', in which teachers teach content knowledge and skills which are represented by the test. I believe that 'teaching to the test' actually falls somewhere between these two definitions, that content knowledge and skills as defined by the exam syllabus are taught but with greater or lesser emphasis depending on marks known to be available in the exam for demonstration of that knowledge, as alluded to by Michael in his game like tactics described above. The reason that the exams pull such a strong focus links to pressures from institutions, concerned about their

reputation, as well as students concerned about their future. This future can be thought of in terms of the short-term, with relation to admission to universities (the path of many A level completers, see Chapter 2 on Sociology's perceived role in this journey), as well as long term economic prospects. With such large differences between earners at either end of the income distribution, exams are seen as playing a key role and result in a high-stakes exam culture.⁹⁰

To return to the concepts of deep and surface learning, it follows that a learning environment where passing exams is prioritised over a deep understanding of content, it is a surface learning approach that is likely to be taken by both students and teachers. As Watkins (2010) puts it:

'If performance orientation is dominant in the culture without a developed learning orientation, there is an increase in strategic behaviour rather than learning behaviour, a focus on looking good rather than learning well, and a tendency to perceive education as a process of jumping through hoops, rather than something more transferable and lasting.' (p.5)

This is by no means particular to Sociology, rather a reflection of the high-stakes exam culture of the UK education system. Indeed, using international PISA and PIAAC statistics presented in Stotesbury and Dorling (2015), it is shown that there are stark relative differences between the UK's performance

⁹⁰ See Dorling's comments in various newspapers on his work with Stotesbury (2015; Harris, 2015; Vaughan, 2015).

as measured at 15 years of age (i.e. pre-GCSE) and amongst those 16-24 years of age (i.e. post-GCSE). One interpretation of this disparity is that the focus on examinations, in this high-stakes culture, results in learning that is short-term: that is surface learning.

5.2.1.2 Towards deep learning, powerful knowledge and the sociological imagination.

Typically, in A level examinations, there are a range of marks that can be awarded, from the lowest associated with a demonstration of the most basic knowledge, through to the highest which are associated with an in-depth critical understanding of the material. Speaking on whether Sociology A level might be considered a 'soft-option', one teacher Toni, commented on this range present in the Sociology A level. With a nod to the level of content, 'a phenomenally big vocabulary people need to learn', and higher-order thinking skills, 'a huge range of very sophisticated concepts', she claims that the majority of entrants may be able to scrape a pass (utilising the former) but to obtain high marks is 'a very tall order' (as it requires the latter). Whilst it is tempting to assume that those teachers who take an instrumental approach to learning concentrate primarily on the former, that is subject content, the curriculum does also require a demonstration of critical thinking skills. Aaliya commented on the skills that students need to be able to demonstrate and shows some pride in being able to help them 'get away from writing opinion pieces and move toward critical, evaluation-based analysis'. By engaging in evaluation there need be a deeper engagement with the material and some sort of meaning making, which goes beyond the learning of content in terms

of memorisation. This appears to go some way towards fostering a 'deep' understanding as conceptualised by Marton & Säljö (1997; level 4: the abstraction of meaning and sense making; see Figure 13). However, there is a distinction here between the critical thinking skills necessary for use in the exam, as advocated by those in the instrumental group, and developing critical thinkers in a broader sense.

The difference may be best explained by way of example. One student may have a teacher, like Aaliya, that trains them in how to write the ideal 'critical, evaluation-based analysis'. The drive for this teacher is for the student to perform the best that they can in the exam. The student may or may not pick this up as a generic skill that they can apply to other academic subjects. If successful, the student is able to perform well in this element of their exam. This could be considered surface or deep learning, depending on the level of engagement and transferability the student develops, but the approach taken to teaching was instrumental. Another student, with a teacher like Toni, rather than being taught to write 'critical, evaluation-based analysis' as a discreet activity, is encouraged to critically engage with all the material placed before them. Given that sociology is the study of society, the world in which they live, they are encouraged to take this critical eye beyond the content of the material in class and to the world around them. Rather than consider this a skill, in terms of the ability to carry out developing as a person. Indeed, whilst Aaliya was associated with the *Instrumental Approach*, Toni was associated with the *Theoretical Approach* to the A level.

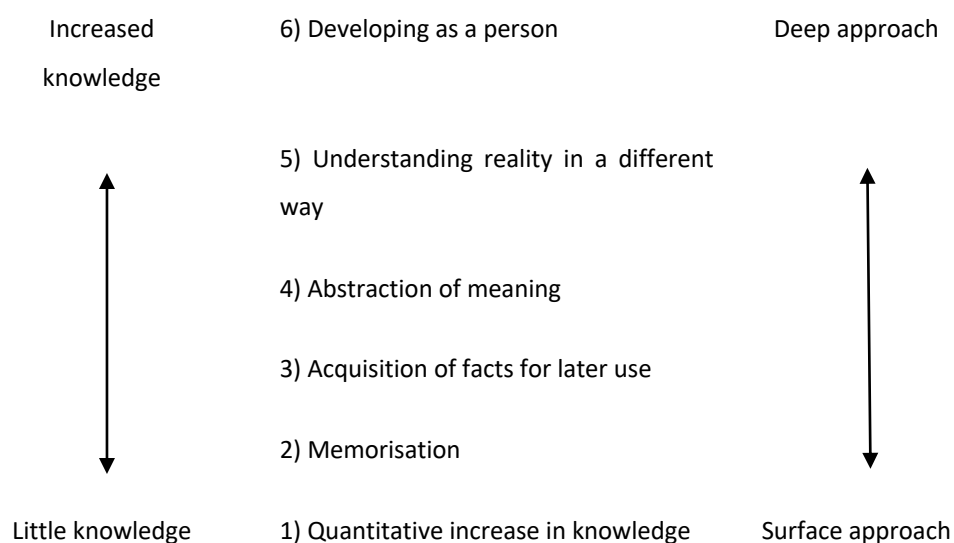


Figure 13: Marton & Säljö's (1997) conceptions of learning

Returning to Toni, it is precisely the latter kind of critical thinking that she is able to foster in her students which makes Sociology such a 'rewarding subject to teach'. Toni goes beyond what others who associated with the *Theoretical A level Approach* tended to describe. Often, those who prioritised this approach still referred to prioritising content when interviewed. As Olivia put it, '[we] have to focus on content because there is so much to fit in before Easter'. She was referring here both to the pressures of the curriculum but also to the additional pressure placed on the timetable by her college's students tending to take self-appointed study leave after the Easter break. The difference between those who advocated the *Theoretical A level Approach* associated with a 'deep' approach, like Olivia (a Sociology teacher at an FE college) and Toni (a Sociology teacher at a specialist college), and those in the *Instrumental A level Approach* group appeared to be pedagogical, with a focus on different ends or means to those ends. Whereas the *Instrumental A level*

Approach group focussed on exam results and delivery of content, the *Theoretical A level Approach* group appeared to believe that the best way to approach the A level was through developing a base understanding of 'fundamental' concepts, onto which other content could be built. Furthermore, the kind of understanding that Toni appears to be aiming for with her teaching goes beyond the classroom, with the development of higher-order thinking skills which are applicable to the students' everyday life. There is a distinction, and somewhat of an overlap, made here between knowledge concerned with the subject and knowledge concerned with everyday life. The kind of work that Toni seems to be doing appears to follow Vygotskian educational principles through to their conclusion, whereby students' understandings of the everyday, their 'common sense', is influenced and affected by the scientific knowledge they learn, and can only learn, through their teachers. Rather than this scientific knowledge being about content per se, it draws on the discourse of the subject discipline, and appears to have more resonance with capabilities than skills (as discussed in Lambert, 2011; drawing on Amartya Sen's work). Lambert (2011) argues that a capabilities approach to the curriculum requires a synthesis of 'core knowledge' and 'powerful [specialised] knowledge' (Young, 2009, 2013; Young & Muller, 2010). Both these types of knowledge are discipline specific and relate to the ongoing debate in sociology about what constitutes its 'core' (see Ballantine *et al.*, 2016). Interestingly, Toni did not have a background in sociology and her drive for teaching the kind of empowering (if not powerful) knowledge may have been based more in her understanding of her role as an educator, rather than

a rise to the 'special pedagogic challenge' (Howard, 2015) of teaching sociology: that of teaching the 'sociological imagination' (Mills, 1959). What Toni is doing is similar to this in terms of Howard's (2015) definition; that is, teaching not content but a skill in terms of a way of thinking, although her drive may be more one of general educational ends rather than sociology specific. This will be discussed in more detail below, when we consider the relationship between how conceptualisations of doing sociology are intertwined with teachers' approaches to the A level.

5.3 The subject – discipline distinction

The discrepancy between understandings of the A level and the discipline were demonstrated in analysis of the larger sample's Q-sorts. Just as there were differing perspectives identified in analysis of the *importance to the A level* sorts (see section 5.2.1), there were also differing perspectives identified in the analysis of teachers' understandings of the relevance of items to the discipline. Leaving aside a detailed substantive interpretation with regard to research methods themselves (see Chapter 4), the analysis allows for some general points to be made about teachers' understandings of the discipline and its relationship to the A level. Firstly, it is worth noting that there were weaker correlations found between individuals' Q-sorts with regards to the discipline than the other sorts that they completed (these correlation matrices can be found in Appendix IV). This suggests that there is even greater diversity of perspectives in terms of the discipline than there was for both the *understanding student perspective* and *importance to A level* sorts. Indeed,

using the same techniques as used for analysis of the other sorts (see Chapter 3), four distinct yet shared perspectives were identified. The most popular two of these perspectives were very similar to the perspectives identified in the analysis of perspectives of the A level: one which appeared to prioritise theoretical and epistemological elements, such as the *Theoretical A level Approach* did; with the other apparently having a discipline informed by the syllabus and exam specifications, similar to the *Instrumental A level Approach*. The average weighted array for each of these groups can be seen in Figure 15: *Discipline as Theory* and Figure 16: *Discipline as Curriculum*, respectively. As before, the relative placements of the items, along with the reasoning given for placement of items at the extreme ends was used in interpretation of the perspectives.

As can be seen in Figure 15, those in the *Discipline as Theory* group, placed theoretical understandings and underlying, epistemological concepts, as well as issues of research design (including reflexivity and ethics) as some of the most relevant issues to sociology as a discipline. Of those items ranked as highly relevant reasons that were given were those to do with the fundamental nature of theoretical understandings: ‘without theory there is no discipline’ (ST8), ‘underpins the discipline’ (ST11), and ‘meta-cognition’ (ST12). Similarly, positivism was highly ranked, as it ‘is vital to understand the theoretical methodology’ (ST4). Furthermore, when asked if any items were missing from the list, ‘Marxism’ and ‘Functionalism’ were cited, adding to the impression of theoretical understandings being central to this conceptualisation of the

discipline. At the other end of the spectrum, data collection methods were considered to be towards the least relevant. Reasons given for this related to the lack of complexity a concept had, e.g. access being a 'simplistic term' (ST11) and patterns a 'self-explanatory concept' (ST12), as well as matters relating to how useful an item or concept was in terms of the nature of the discipline, e.g. experiments not being 'a 'real' environment from which to study Sociology' (ST4). These placements, and the accompanying reasons, lead to an interpretation similar to that of the *Theoretical A level Approach*; namely, a position which prioritises theoretical considerations.

Somewhat differently, the second group to be identified by this analysis, *Discipline as Curriculum*, presented an understanding of the discipline which appeared to be led by the A level syllabus. Using the average array as detailed in Figure 16 along with the post-sort questionnaire, a picture emerges of a perspective of the discipline concerned with the pragmatics of learning the syllabus and passing the exam rather than the deep, theoretical approach taken by *Discipline as Theory* group. The position taken by this group is very similar to the one taken by the A level *Instrumental A level Approach*. This is highlighted with the still relatively high placement given to theoretical understandings, understood to mean that this element is relative, and therefore important, to the discipline of Sociology. However, the reasons given for this placement include the fact that this 'features in all longer higher mark questions' (ST2), demonstrating the practical, rather than theoretical, understanding of this element. Similarly, at the other end of the spectrum

reflexivity was given the lowest ranking in this group's array. It was considered as most irrelevant to the discipline as it is a 'concept which gets mentioned little, especially at AS' (ST13). There are a couple of interesting elements that stand out in this group's array. These include the relatively high (i.e. 'relevant') placing of experiments, and the separation of official statistics from trends and patterns. It appears that this distinction may lie in the difference between sources of information and the actual interpretation of this data (as demonstrated with the relatively low (i.e. 'irrelevant') placement of theoretical understandings). Interestingly, the teachers in this group consisted of those who took politics, criminology or psychology, either singly or in combination with sociology, as their first degree.

In terms of the relationship between subject and discipline, loading onto both the Theoretical Approach in the *importance to A level sort and Discipline as Theory* in the *discipline sort* or loading onto both the *Instrumental Approach* in the *importance to A level sort and Discipline as Curriculum* in the *discipline sort* would indicate congruence suggesting that the individual did not necessarily recognise a difference between the subject and discipline. Indeed, those who demonstrated a perspective that prioritised theoretical and epistemological understandings in terms of the A level, i.e. those who took a *Theoretical Approach*, were also those who demonstrated this same perspective when it came to the discipline, taking a *Discipline as Theory* perspective. This suggests that these individuals have a teaching practice which is informed by their understanding of the discipline and which demonstrates a coherence with that

understanding. This will be explored in greater depth below, informed by interview data with one who held exactly this position (Olivia). Despite the perspectives presented by the second groups in both the *A level* and *discipline sorts* (*Instrumental Approach* and *Discipline as Curriculum*, respectively) appearing to be similar in interpretation, the individuals who identify with this perspective under one condition are not necessarily the same as those who identify with the same perspective under the other. Those that had such a discrepancy between their views of the subject and the discipline may have loaded onto one of the other two perspectives of the discipline found in the analysis. This apparent discrepancy highlights the alternative explanation of the *Theoretical A level Approach* as simply pedagogic, rather than discipline driven.

Without going into too much detail of the relative positioning of the research method items themselves, both of the additional perspectives in the *discipline sort* appear to be concerned with research. The perspective given in Figure 17, considers practical aspects of research as more relevant than more theoretical aspects. This can be seen with the high placement, both within this group, and in comparison, to the other three groups, of research design and some data collection techniques: questionnaires, observations, longitudinal studies and case studies. Indeed, questionnaires was placed in the most relevant position reflecting the attitude that this is ‘the most important sociological research tool’ (ST14). The final perspective that was identified as being shared amongst some of the teachers was one that prioritised analysis elements of research

over the data collection, which appeared to be the focus of the preceding group. Reflecting this, this last perspective was named *Discipline as Analysis*. As seen in Figure 18, this group demonstrates a perspective that places **official statistics**, **patterns** and **trends** at the most relevant end of the scale. Reasons given for placing **patterns** in the most relevant position included '[they] can be used as evidence of theory' (ST20) and '[are] what many sociologists look for' (ST17). At the other end of the spectrum, this group appears to rate more idiographic and qualitative terms as less relevant to the discipline; with **case study**, **triangulation**, and **reflexivity** all down this end of the scale. It is also interesting to note that data collection terms are placed at the irrelevant end of the array, with **experiments**, **longitudinal studies** and **access** all seen as relatively less relevant to the discipline than other items in the sorting set. This group appears to have an understanding of the discipline which places analysis of data concerning groups to be foremost. Whilst distinct in what they might define research as, both these groups appear to conceptualise the discipline as research practise (akin to Parker's, 2002, definition), whether practical (*Discipline as Empirical Research*) or analytic (*Discipline as Analysis*).

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Most unimportant

Most important

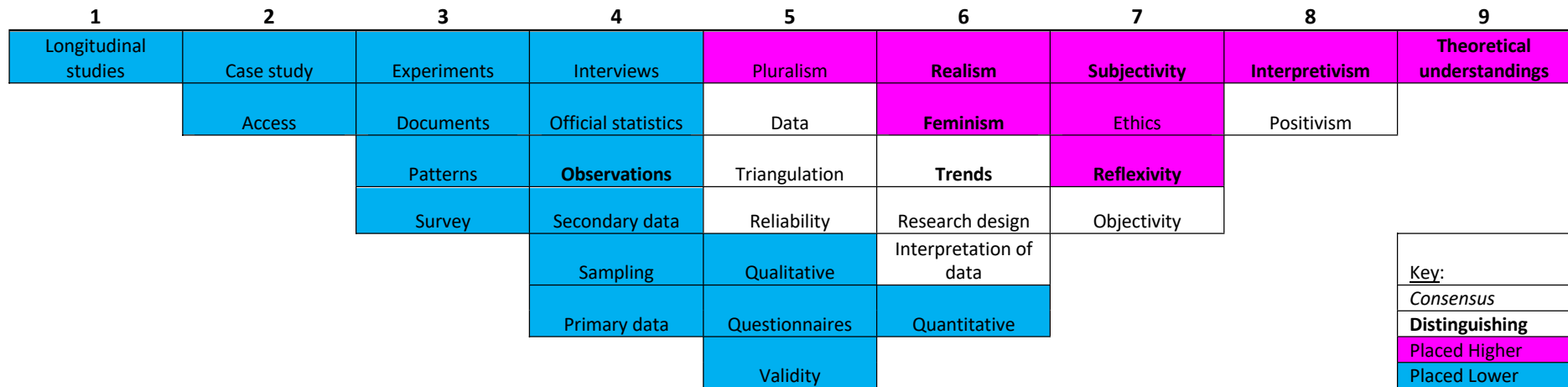


Figure 14: Discipline as Theory

Most irrelevant

Most relevant

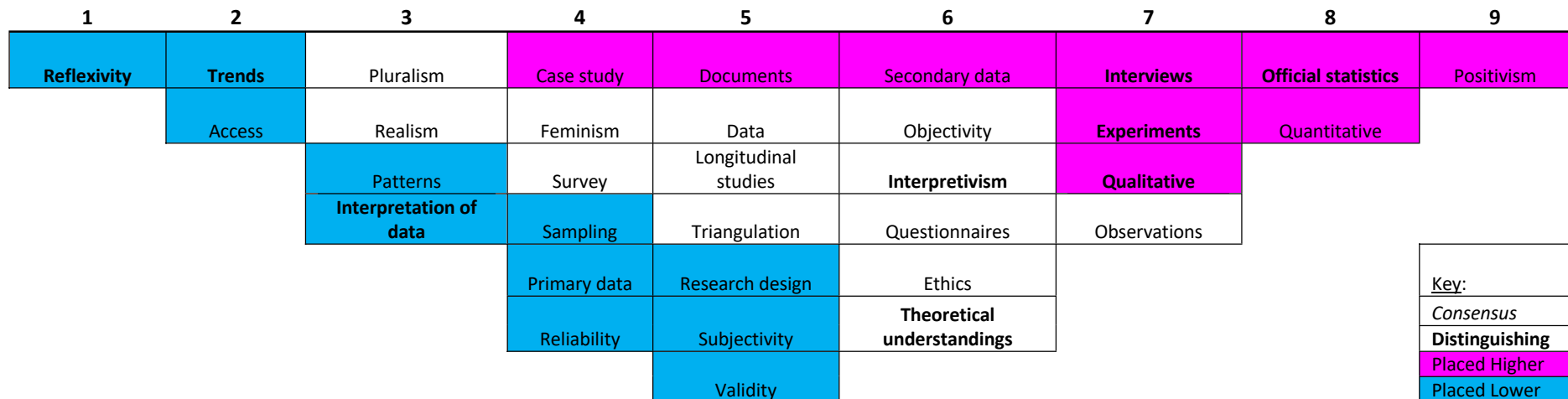


Figure 15: Discipline as Curriculum

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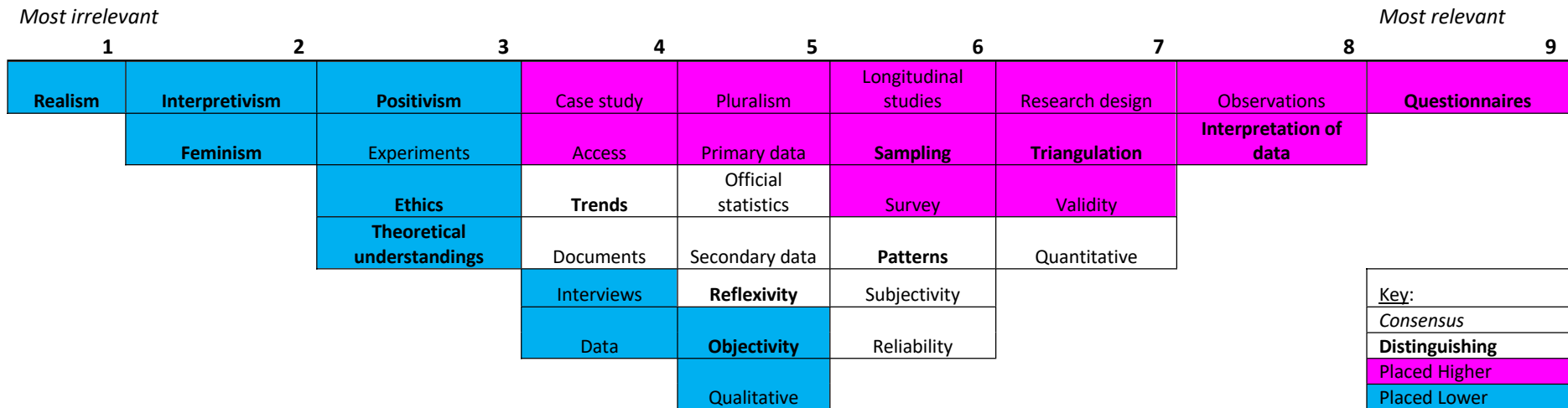


Figure 16: Discipline as Empirical Research

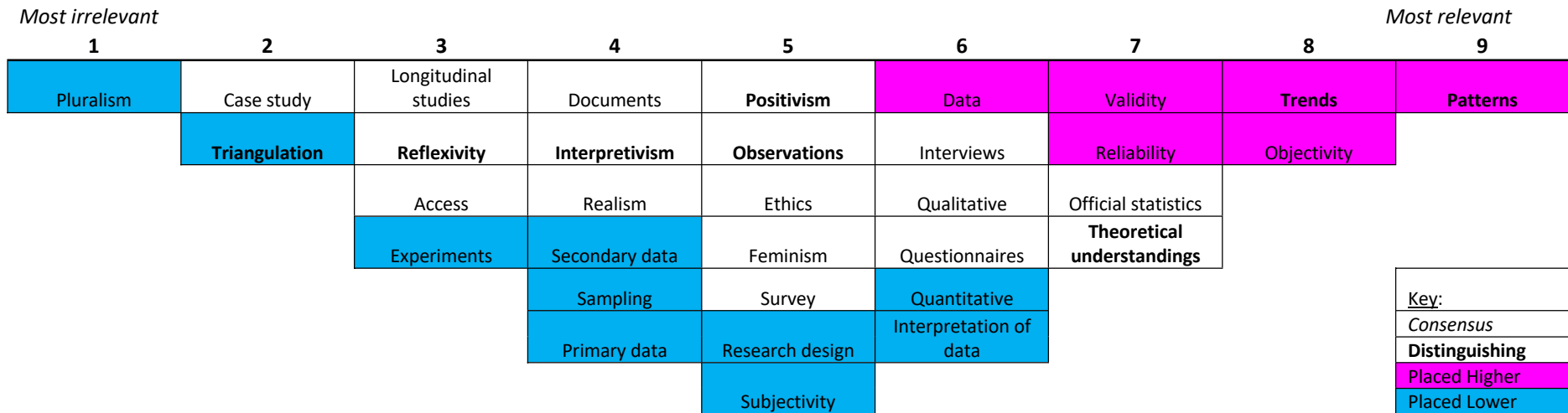


Figure 17: Discipline as Analysis

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The contrast between perspectives of the relative position of research methods within the A level curriculum and those held by the same teachers about the relative position of the same research method elements within the discipline itself is evident in the analysis here. Although the Q-sort exercise was focussed on the research methods elements of the curriculum, for the purposes of this discussion, the use of this area is taken as a means to uncovering the teachers' considerations of the relationship between the subject and discipline. Whilst there was some consistency across some of the teachers' perspectives, in that their A level sort matched with its corresponding sort in the discipline exercise, this is not true of all the teachers. Some teachers appeared to swap between the first groups displayed, whilst others were best represented by the additional two groups found in the solution for the discipline sort. This highlights an incongruence between their perceptions of what it is to be a sociologist and what it means to teach students about sociology. In the following section, this will be discussed in terms of the approaches to the A level previously identified as well as exploring teachers' perceptions of the adequacy of the curriculum in teaching the subject.

5.4 Doing and teaching sociology

Discussing sociology's 'special pedagogic challenge', Howard (2015) gives a distinction between course content, general educational goals, and the unique skills specific to the discipline. We can think of these in terms of the educational goals teachers hold and combine them with their approaches to the A level. At one end of this continuum is the focus on the exam syllabus,

driving a surface approach with a clear emphasis on content knowledge. Whilst there are debates in the literature as to what this 'core' content should entail (as discussed below), this may well be a moot point for some of the teachers interviewed, particularly those who have this focus on content. This is not to say that teachers were not critical of the content of the syllabuses.

Along with a pressure felt by all the teachers about the sheer volume of content to get through, there was some reflection on the relationship between the discipline and the subject. Although Bernstein (1999) tells us that sociology is necessarily 'retrospective', one criticism which was highlighted was a perceived disconnect between the subject and modern discipline. This embodied itself with a criticism that the syllabus was 'old fashioned' (Aaliya; *Instrumental A level Approach/Discipline as Analysis*), with too much on the 'fathers of sociology' (Charles; *Instrumental A level Approach/Discipline as Analysis*) and a frustration with the text books and exams citing old research (Toni; *Theoretical A level Approach/Discipline as Empirical Research*). This latter frustration was turned into a teaching and learning opportunity for Toni, who vocalised her concerns about the relevance of the examples given, thereby moving towards her general educational goal of developing critical thinkers. Others may not be so actively creative. Indeed, Charles argues that most teachers 'just embrace whatever's in the spec'. Aaliya puts it thus: 'sometimes it feels like I'm not teaching my students about sociology, I'm teaching them about the history of sociology'. The emphasis here is still on content, note how she uses 'teaching about' rather than 'teaching to do'.

The separation of learning about and learning to do, appears to influence some of the teachers in their understandings of whether they and their students are part of the disciplinary community. Regardless of the level of training in the discipline undertaken, from none to holding a Masters in Sociology, few teachers considered themselves to be sociologists. Rob argued quite strongly that 'there is definitely a disconnect between the academic truth of what the subject is and what happens at A level'. Whilst Rob (Instrumental A level Approach/Discipline as Theory) reflected on Bernstein in his reasoning for this, claiming that the syllabus attempted to retain the 'integrity' of the discipline but was a 'watered down', recontextualised version, others simply stated it was because they did not 'do' sociology. This act of 'doing' appeared to reflect most of these teachers' conceptualisations of the discipline and the practise of Sociology as empirical research. Interestingly, it is the lack of research element in the course that may inhibit these teachers from referring to their students as sociologists. In the interview, Aaliya categorically stated that her students were not sociologists but later went on to refer to students studying Mathematics as mathematicians and those studying Physics as physicists; presumably because those on these courses 'do' maths and physics. Rather than Rob's understanding of fields of production, it appears to be the conceptualisation of what sociological work entails which dictates whether they consider themselves and their students to be part of and 'doing' the discipline.

At the other end of the continuum, we have the teachers who take a deep approach to learning, with specialised knowledge and skills specific to the

subject, with notions of habit of mind and powerful knowledge. General educational goals sit somewhere between the two ends of this continuum. Howard (2015) refers to general educational goals as one of the three levels of the potential learning outcomes of a sociology course, in this context we can see them as literacy and numeracy agendas and the development of generic, academic skills such as critical thinking. We have seen that Aaliya positions herself around here, with an understanding of her role and the subject as cultivating these kinds of generic skills which moves her along the continuum beyond content knowledge towards a deep understanding. We can also imagine where Toni might sit on this continuum. Whilst she certainly moves away from mere content, her move towards a deep understanding, she appears to stop short of the kind of specialised knowledge that Young states is a feature of powerful knowledge. Whilst she does aim to develop students who are critical of the world around them, this appears to be less about developing a sociological imagination and more towards a general educational goal, as she envisages it. Like Aaliya, she appears to be teaching critical thinking rather than the 'critical sociological thinking' (Grauerholz & Bouma-Holtrop, 2003) specific to sociology. Supporting the notion that this is necessarily not what was being taught is the fact that these teachers saw a distinction between the subject and discipline, with understandings of the subject driven by content, albeit with a pedagogic approach that sometimes prioritises the theoretical in achieving this aim, and the discipline as empirical work.

Whilst there are those who see the core of sociology as hinging on content within the literature (such as Ferguson, 2016), here the core is taken to be concerned with taking a sociological perspective (Ballantine *et al.*, 2016). This can be variously construed as using a 'sociological eye' (Collins, 1998) or the 'sociological imagination' (Mills, 1959). Taking this understanding of the sociological core means that teaching becomes less about content and more about teaching this 'habit of mind'. This is arguably what makes sociology unique as a subject and is a form of powerful knowledge; just as Lambert argues that powerful knowledge in Geography is about developing and enabling students to engage with 'thinking geographically', so would proponents of this position argue for Sociology to train students in 'thinking sociologically'. Under this understanding of the purpose of sociological education the boundaries between discipline and subject start to blur. Teaching sociology then becomes less about content and more about an 'invitation to sociology' (Berger, 1963). Although she does not refer to developing a habit of mind, it is this very language that Olivia (*Theoretical A level Approach/Discipline as Theory*) uses when she talks about the relationship between the subject and discipline. She strongly asserts that she sees no difference between the subject and discipline, stating, 'I believe we are inviting people into the discipline of sociology'. Although she does not directly refer to any form of the 'habit of mind', there are resonances with Young's conceptualisations of powerful knowledge as she welcomes and trains her students as, in Young's words, 'neophyte members of the knowledge community' (i.e. the discipline).

Another who overtly saw little difference between the discipline and subject, and also identified as a sociologist, was James (a Sociology teacher in a 6th form college, with a criminology background, *Theoretical A level Approach/Discipline as Curriculum*). Rather than the type of understanding apparent in Olivia, which is akin to the discipline's core as being a habit of mind, his understandings of the discipline appeared to be based on the content of the syllabus. To some extent this a legitimate position to take with some arguing that a core can be defined by content in terms of a set of key topics and concepts (as in D'Antonio, 1983) and areas of study (Howard *et al.*, 2014). Whether or not the written curriculum does represent core knowledge is debateable however, not least because there is an argument that there is actually little agreement as to what this key knowledge should constitute (see Howard, 2015 amongst others). The danger that Dandaneau (2009) and others warn of is that, in the absence of agreement of what constitutes the core 'others are making decisions for us' (Ballantine *et al.*, 2016; p.154). In the case of school-level sociology, these decisions have been taken as to what constitutes disciplinary knowledge, informed by the discipline but ultimately decided upon by exam boards, guided by Ofqual's standards and subject specific criteria. Whilst for others the content of the syllabus is seen as something separate from the discipline, James sees it as an accurate representation. Whilst it could be the case that his understanding of the discipline is guiding this interpretation of the suitability of the syllabus, his Q-sorts and reasoning suggests the converse. Although a subject-specialist teacher, without a 'real' grounding in the discipline it could be argued that the

written curriculum is forming his understanding of the discipline. Interestingly, whilst he overtly claimed to not believe in a difference between the subject and discipline, his Q-sorts did indicate a discrepancy. Although he appeared to advocate a deep approach to the A level, when asked to comment on the differences between the discipline and subject he stated, 'I'm not teaching purely for academic enjoyment, I guess this is more to do with just passing exams'. Whilst these two positions appear to be at odds, he may simply be demonstrating different aspects of knowledge required for teaching: those of his pedagogical knowledge and the educational ends of the A level course (Shulman, 1987).

5.5 Teachers' relationships with the curriculum

The Q-sort and interview data revealed that teachers have a relatively complex relationship with the curriculum based on their conceptualisation of their role, the pressures that they are under and their understandings of the discipline. Rather than concentrate on the research methods element of my project per se, this chapter has explored teachers' understandings of the discipline and how they relate to, and potentially influence their teaching of, the subject. As has been discussed, teachers appear to present different conceptualisations of their role and these can be clustered meaningfully into 'competent craftsperson', 'educator' and 'subject specialist'. This role appears to both influence and be influenced by their approach to teaching the A level, which can also be positioned along a continuum of surface to deep learning. These approaches and conceptualisations of roles link to broader conceptualisations

of educational aims and disciplinary knowledge, and what it means to teach Sociology.

In an attempt to visualise and summarise how these different aspects are conceptualised and related to one another, an analogy of a swimming pool is used in the visualisation in Figure 19. Where one enters the pool (the surface with a. and b. as sides), represents both what understanding of sociology's 'core' is held (a.) and the approach taken to teaching the A level (b.). If we follow the trajectory of entry straight down to the bottom of the pool (surface with the orange arrow), we can infer the conceptualisation of role as an A level teacher taken (c.). Furthermore, taking a perpendicular line from this point to the leftmost part of the pool indicates the disciplinary knowledge that is being aimed for, or that students will be exposed to with, this approach, i.e. what learning goals the teachers' hold for their students (d.). The deepest part of the pool represents the subject specialised skills or powerful knowledge of the subject, a depth that can only be accessed with a deep approach based on a theoretical understanding of the discipline, usually taught by a subject expert. The lanes of the pool represent the three main understandings of the discipline, as were identified in analysis of the Q-sort data: one seemingly driven by the content of the syllabus; one concerned with empirical research and/or analysis; and one prioritising a theoretical understanding. The barriers partway down the lanes of the first two of these understandings represent the limitations of entering the pool with an understanding based purely on the content of the A level syllabus (for example). Although one who enters in this lane may endeavour to promote a deep approach to the A level, without a

deeper grounding in the discipline it is unlikely that the subject specific skills at the deep end of the pool will be achieved. Similarly, in the case of the 'research' lane, in the case of my teachers, this appeared to allow them to conceptualise themselves as competent craftspeople teaching content, or educators aiming for general educational goals, but still did not attain the same level of engagement with the discipline as those who took a deep, theoretical approach to understanding both the A level and discipline.

Teacher types are conceptualised along a continuum in the diagram but could also be conceptualised as a pyramid or as nested within one another. The fundamental responsibility of teachers is to interpret, transmit and foster understanding amongst their students of the content of the syllabus. This is shown as the majority of the body of water within the pool, with the blue dotted lines indicating where disciplinary knowledge begins to deepen (d.). Where a teacher falls along the teacher 'type' continuum dictates, to a certain extent which depth of the disciplinary axis they are found. First and foremost, teachers need to be 'competent craftspeople' and it is from this base that they can build and develop their conceptualisation of their role. The 'educator' is seen as going further than just teaching content, to a drive to develop students' skills towards their general educational aims (official or unofficial). For those of my teachers who expressed this aim, this was conceptualised as developing students who were critical thinkers in terms of the world around them. It is this interpretation of general educational goals, coupled with the nature of sociology's subject specific skill (i.e. thinking sociologically), which

means that rather than discreet categories we can envisage the aims of education in terms of a continuum of disciplinary knowledge (d.).

5.6 Summary

The swimming pool analogy allows for the various aspects and relationships of teaching a discipline as an A level subject to be explored. It also allows for the addition of a current to the pool, as depicted by the orange arrow on the bottom of the pool (see Figure 19). This current represents the pressure that all teachers are under, no matter where they enter the pool, to prioritise content. As touched upon in this chapter, this reflects the performativity culture in which the teachers operate whereby assessment becomes one of the tools of measurement for accountability. The prescriptive nature of the written curriculum at A level supplies this content, leaving little room for manoeuvre or creativity on the part of the teachers. These elements combine to erode teacher autonomy (Priestley, Biesta, Philippou & Robinson, 2015), leaving the choices to be made those about how to deliver curriculum content, prioritising the role of teacher as technician. This pressure is felt by the teachers from both above and below, from both management and students. The conceptualisation of the student as syllabus-savvy, and potentially instrumental in their own decision making, echoes the instrumental stance that some of the teachers took, and is hardly surprising given the performance orientated culture within which they operate. Furthermore, a surface approach to teaching and learning such as that promoted by a performance orientation can lead to success in terms of results (Haggis, 2003). Although

teachers are often held central to the results achieved, as in conceptualisations of 'effectiveness', there are clearly student level characteristics which determine the extent to which students engage with their studies, not least those concerning motivation. The following chapter will explore these, with particular reference to an area where motivation is often claimed to be lacking: (quantitative) research methods.

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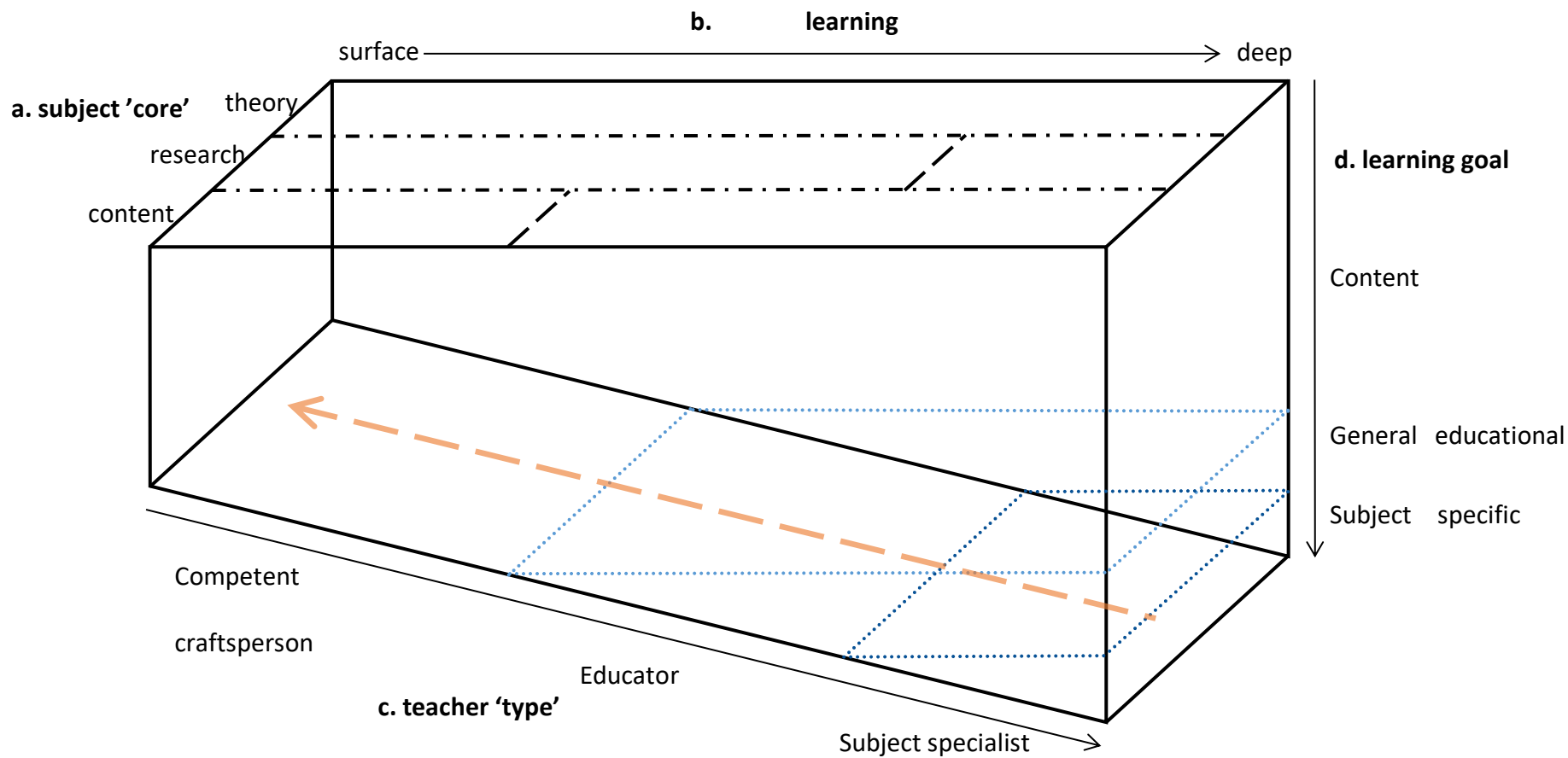


Figure 18: 'Swimming pool'

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6 The Instrumental (Sociology) Student

6.1 Introduction

No exploration of the curriculum would be complete without considering the position of the student. We began to see in the last chapter that students can be positioned as receivers of information transmitted by teachers; as active decision makers, exercising choice over the subjects that they do; and/or as pragmatic, acting in an instrumental manner in their engagement with the high-stakes exam environment in which they find themselves. This chapter further explores the accounts made by the teachers in the previous chapter by considering the general characteristics of the students which teachers of A level Sociology are likely to encounter. Influences, limitations and freedoms affecting student choice are explored, along with the teacher accounts, in an attempt to establish the routes into the subject and resulting typical Sociology student described by the teachers. At the conclusion of the discussion of student choice, with the conceptualisation of a typical Sociology student as one who shows an instrumental commitment to their chosen course, consideration turns to the detail of those courses in terms of the research method curriculum from the point of view of the student. The turn is substantive both in the topic and the manner in which that topic is addressed. When considering student attitudes and perceptions towards a marginalised topic for which there is appetite for intervention to improve said attitudes, along with skills and capacities, as is the case with quantitative methods in this case, an approach which considers mechanisms and models of engagement is

worth exploring. As such, the second part of the chapter draws from the social psychology literature in an attempt to address this issue. The difference in approach and lack of total congruence in conclusion between these two parts highlights the multiple understandings of quantitative literacy, which both inform and are informed by the approach taken to its investigation. Taking the two parts together attempts to offer an overarching insight into the instrumental nature of A level student engagement, including how students who might typically be expected to be averse to engagement with quantitative methods may not exhibit this aversion in practice.

6.2 Student Choice, Prior Performance and Institutional Offer

It is worth beginning by exploring how those students studying A level Sociology typically come to choose the subject. It is likely that Sociology is a course that they will not have encountered before, with few GCSE papers being sat each year.⁹¹ Not only are students unlikely to have studied the subject before but they may also be unlikely to be aware that they have encountered it in any form. Institutional practices of recruitment become important in these cases. Courses provide literature for recruitment purposes, often drawn from exam board or associational materials. The British Sociological Association, for example, produces a leaflet (with a companion website⁹²)

⁹¹ Indeed, the proportion of GCSE papers sat which are Sociology is so low that the Joint Council for Qualifications does not publish these figures separately. Instead, Sociology is reported alongside other subjects within a 'Social Science subject' category, which itself has consistently accounted for < 1% of exams sat between 2013 and 2017 (figures accessed at <https://www.jcq.org.uk/examination-results/gcse>).

⁹² At <http://www.discoversociology.co.uk/>

aimed at encouraging students into the discipline entitled 'Discover Sociology' (n.d.). The extent to which these resources are utilised in decision making is questionable however, with evidence that few students tend to even read, let alone use, course information in their decision making (Foskett & Hemsley-Brown, 2001). In addition to this, careers advisors and management teams may try to steer A level students towards particular subjects, pre-enrolment. There was a sense amongst the teachers interviewed that this advice itself might be 'suspect', with little confidence that those giving the advice knew enough about the subject for this to be a meaningful recommendation. Some claimed that students may be encouraged to do Sociology alongside Psychology, with Charles (a humanities teacher in the 6th form of a grammar school) sceptical as to the motivations behind this, claiming this advice may be as much about staffing and management issues as anything else. Others, meanwhile, cited the mathematical content present in the new Psychology syllabuses as a reason that 'weaker' students were encouraged to do Sociology as an alternative to Psychology. The relative position of sociology and psychology is drawn on to a greater and lesser extent throughout the thesis and is utilised later on in this chapter but for now, the notion that it is the 'weaker' students who are encouraged to take the subject is worth bearing in mind.

Whilst there is some evidence in the literature that students may be guided into decisions by senior figures at GCSE level (Davies *et al.*, 2008), the extent to which this impacts student decision making is questioned by the likes of Sutch *et al.* (2015) who claim that it is student preference that wins out.

Unpicking this further, Davies *et al.* (2009) draw on Nagy *et al.*'s (2004) model of student choice, identifying 'academic advantage' as the powerful predictor of subject choice, stating that 'students are more likely to study a subject if it is associated with their academic strengths' (p.156) and that this effect is, unsurprisingly, stronger for decisions about subjects that they have studied before. Missing from these conceptualisations of choice however, are the very real limits put on the space in which this preference is allowed to operate; limits which stem both from student level characteristics, such as past performance, and institutional limits, such as course enrolment requirements and the actual courses offered. The latter is often bound up with the type of institution, as discussed below. With options differently constrained by different types of institution, major implications for equity ensue (Abrahams, 2017).

Bound up with notions of student choice at A level are measures of ability in terms of exam performance, particularly that expected of them in their GCSEs. As well as informing choice, prior ability can have tangible effects in terms of whether or not students meet the necessary requirements for enrolment onto particular courses. Similar to requirements at undergraduate level, Sociology A level often has no additional entry requirements beyond those stipulated by the institution for general entry. This becomes particularly pertinent when considering quantitative skills and ability, with differing Mathematics GCSE requirements for different subjects. Michael (an A level Sociology teacher in a 6th form college) provided an insight into how this plays out at his institution, where, in terms of Maths GCSE, students need an A for Physics, a C for

Psychology and there is no stipulation for Sociology. In his words, this results in a situation where 'different subjects have very different kinds of students based on their background in year 11'. Importantly to the idea of the position of Sociology in the hierarchy of subjects, he goes on to point out that this relative lack of pre-requisite mathematical ability can 'imply that Sociology is second best because it adds to the argument that "oh, it's easy"'. This notion that Sociology is perceived as an 'easy' subject was apparent in most of the teachers' accounts. In terms of students, this perception appears to play out in one of two ways. Somewhat counter intuitively, some students apparently choose not to study Sociology because they 'feel it a low status subject' (Aaliya, a Sociology teacher at a 6th form college). This low status stems, at least in part, from a lack of familiarity with the subject and the misconception held by students that it is not really an 'academic' subject and they are simply 'going to talk about teenage pregnancy and smoking' (Aaliya). Whilst these kinds of misconceptions are not confined to Sociology (Aaliya also comments that students tend to assume that they will 'learn how to read people's minds' by studying Psychology), it is the case that they may also persist in the general perception of the subject by parents and managers within institutions. Indeed, Olivia (a Sociology teacher at an FE college) spoke of parents discouraging students from taking Sociology as they did not consider it to be 'proper' A level. Whilst student-level preferences and motivations do play a large role in subject choice, it is worth acknowledging that the opinions held and expressed by parents (and, for that matter, peers) can and do play a role in students' decision making (Thomas & Webber, 2009).

The perceived ease was cited by many of the teachers for reasons why other students chose to study it. For students, the appeal of taking an easy subject is not unique to Sociology, with Davies *et al.* (2008) making this claim more broadly, but the coupling with novelty may attract those who have experienced some lack of achievement in other subjects.⁹³ At the extreme end of this, Charles (a philosophy and humanities teacher at a selective boys' grammar school) describes the motivations behind this kind of student's choice as being driven by a sense that Sociology is a 'subject they haven't yet failed at so the potential to succeed [exists]'. It is interesting to note that Charles was teaching in a highly selective institution where weaker students appeared to be conceptualised as such in terms of the amount that they applied themselves to and 'pushed themselves' in their studies, rather than academic ability. In the other institutions my teachers described, weakness was conceptualised as the latter: a lack of academic ability and/or aptitude. This apparent weakness was not limited to mathematical ability but was more general, with Michael asserting that '[I] tend to have the lower end of GCSE achievement'. These assertions about the relative weakness of Sociology students was intra-institutional, with different institutions having differing expectations of their students and differing ideas as to what might be considered weak. More generally, further institutional differences exist in terms of whether Sociology is present as part of the A level offer. Whilst this

⁹³ The perception of ease may also be held and perpetuated by those in positions of advising students on their options. It may be better for both the students and institutions to pass a 'soft' subject than run the risk of failing a 'hard' subject.

may appear to be a slight digression, when considering student choice consideration must be paid to the constraints placed upon the options available for them to choose from.

Where Sociology is and is not made available as a choice reveals something about the status of the subject and the types of student taking or not taking it as an A level. Partly, the options available to students is a result of the size of the institution, with larger institutions (typically state 6th form colleges) having a greater capacity to offer a range of diverse subjects; with more students to take the subjects, and more staff to teach them, it makes the running of courses outside of the typical core more viable. The converse of this means that smaller institutions (typically state or independent school 6th forms) may not have the capacity or numbers to make running such courses a viable option. What courses institutions choose to offer depends partly on these issues but also on the make-up of the student body. Just as teachers and careers advisors can hold expectations about the type of subjects suitable for individual students, Davies, Adnett and Turnbull (2003) claim that school managers hold expectations of the type of subjects suitable for their general student body. Interestingly, when considering the provision⁹⁴ of Sociology by school type, Gill and Williamson (2016) provide data from 2015 which shows that independent schools were much less likely to offer Sociology than other types of institutions (12.9% compared to between 53.6% and 92.4% in other institutions) and that those institutions with the very highest attainments were

⁹⁴ Where provision was defined by at least one student taking the course, rather than whether or not it was offered as an option.

also much less likely to offer Sociology (25.1% compared to between 68.7% and 77.3% in lower attainment groups). There have been claims that this kind of withdrawal of the option of what may be considered the 'softer', humanities and social science subjects represents a mindfulness towards progression to HE (e.g. McPhail *et al.*, 2010) which is more prevalent in those institutions which draw students from higher socio-economic backgrounds, i.e. independent and selective 6th forms (Rowbottom, 2013). Certainly, with options presented only consisting of those subjects which are considered to be valuable to HE, students in these institutions may well be in better position when it comes to HE entry than those who can select subjects outside of the 'facilitating' subjects.⁹⁵ It is worth noting that both Rowbottom and McPhail *et al.* were writing prior to the collection and formalisation of the Russell Groups list of facilitating subjects. Prior to the publication of this list, this distinction between the subjects was less formal, with Fazackerley & Chant (2008) noting that individual university restrictions on some combinations of A level subjects through requirements and recommendations were particularly present for the leading institutions. Sociology does not come out very favourably in these assessments, with the perception the rigorousness of the assessment called into question.⁹⁶ These views are not challenged by the

⁹⁵ As defined by the Russell Group's A level Content Advisory Board (ALCAB). They defined 'facilitating subject' to be those A levels which are most commonly required by universities for acceptance onto many undergraduate degrees: English Literature, History, Modern Languages, Classical Language, Maths and Further Maths, Physics, Biology, Chemistry, and Geography. Sociology A level is not even required for undergraduate study of itself.

⁹⁶ Interestingly, one of my teachers (Toni, an A level Sociology teacher in a specialist college) refers to this but rather than write off the assessment entirely, states that whilst it might be easy to achieve a pass, higher grades are much more difficult to

evidence presented in an assessment of the relative difficulty of examined A level subjects by Coe *et al.* (2008), whereby Sociology was found to be consistently less difficult than most other subjects. The preference for some subjects over others is manifest in the A level subjects that undergraduate bodies have achieved varying by HE institutional type. Using UCAS acceptance data to examine the spread of Sociology A level completers accepted onto an undergraduate course by type of university, we see that Sociology was least prevalent amongst the Russell Group (4.6%) and 1994 Group (6.6%) than the less prestigious universities (University Alliance: 11.5%; Million+ Group: 15.2%; Other: 10.8%). Interestingly, this is the exactly the opposite pattern of, say, Mathematics with the Russell Group at 50.9%, 1994 Group at 43.3% whilst the other groups had lower percentages of this subject (University Alliance: 20.9%; Million+ Group: 15.7%; Other: 19.4%). Whilst these figures are headline, and not by subject studied at degree level, it gives a sense of where those who study A level Sociology find themselves studying towards their undergraduate degree.

These distinctions and boundaries between hard and soft subjects are not as arbitrary as they may appear but, importantly, not as concrete as their reification by the publication of the 'facilitating subjects' list may imply. Whilst recent work has indicated that, in terms of examinations, subjects have a relative position in terms of ease (e.g. Coe *et al.*, 2008), it is also possible to

achieve in this subject. This in turn relates to the synoptic nature of Sociology, precisely what the current government is trying to achieve across with the board with the move to linear assessment.

theorise differences which insulate subjects from one another. Young (2008) relates the boundaries between subjects as arising from the mass expansion of academic knowledge and the coherence of disciplines, on which school subjects are based, as distinct, separate entities. Whilst the disciplines at HE inform the subjects at A level, the latter are not necessarily required in order to study the former. Partly, those subjects considered to be facilitating are those which are considered necessary or useful to have studied before embarking on an undergraduate degree. A level study is intended to prepare students for university level courses generally (see Chapter 2 for more on the general purposes of A level), with some A levels introducing students to concepts and a language necessary for progression to study that particular subject at a higher level. The facilitating subject list produced by the Russell Group (2016) is based on the subjects for which this pre-requisite is required.

It is interesting to note that many of the subjects listed by the Russell Group, particularly the sciences and mathematics, have what Bernstein (1999) would conceptualise as hierarchical knowledge structures within which language is integrated as one progresses through the discipline (as opposed to horizontal structures within which languages operate alongside one another and so are accumulated). It follows that those structures where discipline knowledge, both in itself and in acquisition, is developed by building upon what comes before, necessitate prior exposure and understanding before studying at a higher level. On the other hand, those disciplines that hold a horizontal knowledge structure, such as sociology and the humanities, do not require this same level of exposure as the languages on which the disciplines are based do

not build upon one another but are specialised for each sub-discipline. Whilst the distinctions between the subjects considered preferential or otherwise appear to have a logical, descriptive base, they are not value free. Hierarchies emerge which are informed by these distinctions, accountability practices (such as those described in Chapter 5) and tradition, with newer subjects, including Sociology, tending to be placed below more established subjects. Particularly in this context, one cannot help but consider notions of hierarchy being linked to the quantitative (or otherwise) nature of the subject. Those subjects that require knowledge, understanding and skills in quantitative methods are placed higher up the hierarchy than those that do not, with the tendency for the former to be perceived as more objective and legitimate than the latter.

The choice that students make to study Sociology appears to be constrained, both by the restriction of options made available to them through prior performance and through institutional offers. Those students who have not performed well in their GCSEs may be confined to 'softer' subjects which are of less worth to leading universities. Whilst those students who attend more elite institutions, who are typically those who have performed well in their GCSEs, are confined to 'harder' subjects which may enhance progression. Whichever way this constraint plays out, there a sense that students are not making fully informed choices. This goes beyond which subjects students choose to do, to the wider context where many 16 year-olds are expected to study A levels and progress to HE. Whilst it is true that large part of the development of A levels was concerned with their use as a university entry

examination (see Chapter 2), the rapid expansion of this pathway has created a context in which it is now considered to be a semi-universal qualification; akin to the development of universal GCSE examinations (for detailed discussion of this development see Torrance, 2009), following the linear trajectory from elite, to mass, to universal.⁹⁷ This situation is exacerbated by the Westminster Government reforms which now require students in England to be in employment, education, or training (i.e. *not* NEET) until the age of 18 (DfE, 2016), as well as reduction in the vocational and skills-led training pathways (from Key Stage 4 onwards; Harrison, James & Last, 2015). Furthermore, many of the teachers interviewed described this as a ‘push’ or ‘funnelling’ into the typical A level to undergraduate pathway associated with the massification of HE (Scott, 1995). Coupled with the high-stakes, performativity culture in which the students find themselves it is perhaps unsurprising to hear Rob’s (a Sociology teacher at an academy) account of the emotional stress students are under:

‘I think it’s very difficult for them to be able to feel comfortable... They can start unravelling and feeling very unsure very quickly because for very many of them they have chosen to study some A levels not because this is what they

⁹⁷ Interestingly, this linear trajectory was predicted to apply to Higher Education as far back as the 1960’s but which has failed to be maintained because of the elitism inherent in the structure (Scott, 2014). In light of the recent reforms in England and the resulting tension between neo-conservative elitism and the technical-instrumentalist response to the economic market (Young, 2008), similar concerns about the maintenance of a universal system (if reached) may apply to the A level.

would really do in the world if they knew what they wanted to do but because they are being pushed into this as their choice.'

Rob's point illustrates the lack of informed choice but also implies the pressure that students are placed under. This pressure comes from teachers, parents and institutions but also themselves, students *want* to succeed regardless of any academic disadvantage; as one Sociology teacher, Aaliya, expressed: Sociology students are 'hardworking but not necessarily scholarly'. This hard work is informed by the wealth of information available on the requirements of the course, specific to the examination board that they are following, in terms of readily available exam specifications, past papers and revision guides. The resulting picture is one of a shift in students who are ill-informed of the subject pre-enrolment, to being well informed of assessment requirements post-enrolment. These Sociology students are conceptualised as 'pragmatic' (Charles) and instrumental in their approach, 'just get[ting] on with it when they realise it's not easy' (Aaliya). It is this instrumental nature that we will return to later in the chapter.

6.3 Sociology Students and Quantitative Research Methods

In the preceding section, elements affecting student choices were both external and internal, from institution-level through to individual-level. It is the latter to which attention is focussed in the following. In terms of student choice, research has shown that student-level influences on their decision making include motivational factors of interest and aspiration, as well as learning dispositions and academic self-concept. Davies *et al.* (2009) identified

academic self-concept as the most important influence on student choice; conceptualising this as relative, based on comparisons between own and peer achievement. Students are more likely to choose to do a course if they think they are going to be successful at it, in that it plays to their (academic) strengths. The previous section showed that those who choose to study Sociology are less likely to hold these strengths in Mathematics or the Sciences, which raises concerns about their reaction to and engagement with the quantitative research methods elements of the A level curriculum, however marginal. The logic follows that these students may react adversely on discovery of this part of the course, which it is likely that they are unaware of before they sign up. Given that such students may not hold interest or aspirations towards learning this type of content, it follows that attainment and retention may be adversely affected (Zepke, Leach & Butler, 2010). Given the low proportion of marks requiring quantitative research methods in the exams (see Chapter 4), attainment may not be markedly affected. However, one can imagine retention may be impacted. Certainly, it is an issue worth considering for a moment, particularly given the counter-intuitive position the teachers interviewed described.

Before the recent reforms in England to a two-year linear system with terminal exams, A levels were structured such that in the first year students would take an AS, which could either be 'cashed in' as a stand-alone qualification or used to contribute towards the A level qualification along with a second year's study of the A2 modules (see Chapter 4 for more details on these reforms). Following the ethos of Curriculum 2000, students were typically encouraged

to take four subjects in the AS year (in the name of breadth), tending to drop one at the end of the first year and studying the traditional three subjects through to A2 level. Accounts of many of the teachers under this system described a process whereby students chose Sociology as an 'easy' fourth subject at AS. Following the logic of the previous paragraph, one might expect low retention rates when students encounter content that they are not expecting and have predispositions against. Whilst a lack of retention can be conceptualised by dropping out of the course altogether, the structure of the pre-reform qualification was such that retention could also be measured by conversion to the full A level course (i.e. continuing to study in the A2 year). Whilst there was some talk of students dropping out, this tended to be when 'they realise[d] that college just isn't for them' (Rob, an A level Sociology teacher at an academy), rather than subject specific. Furthermore, there was evidence from some of the teachers of high rates of conversion from 'fourth subject' to full A level.

This concern over conversion appears to go beyond simply being instrumental about course requirements, perhaps towards real engagement with the subject. Alternatively, this could reflect students being instrumental in their subject choices, choosing Sociology because they perceive it to be easier than the other subjects that they were studying (which may not be unfounded, see Coe *et al.*, 2008). Interestingly, when asked about the impact the reforms might have on student numbers, and the effective lack of this route to getting students, there were promising accounts made with teachers happily surprised by a lack of dip in student numbers. Indeed, in some cases Sociology courses

were over-subscribed (as at Olivia's institution) with questions raised about the adequate provision of resources to meet student demand, which may be particularly exacerbated for Sociology by real term cuts and restrictions on institutions A level offer (as Charles raised and is discussed in more detail in Chapter 5). Bringing this back to students' engagement with quantitative methods, the aversion and subsequent loss of students which we might expect might be partly explained by content and nature of them in the curriculum but, considering the intrinsic motivational aspects of student engagement, warrants some further unpicking in terms of student level characteristics.

6.3.1 The relative difficulty of quantitative research methods

Thus far in this chapter, drawing on teacher accounts and the literature, Sociology students have been conceptualised as weaker students, who may have a particular aversion to quantitative methods. In order to uncover the perceptions of A level completers themselves, with regard to the relative difficulty of quantitative research methods within the research methods curriculum, students were given a set of research method items found to be common across the examination board specifications and asked to sort them relative to one another (see Chapter 3 for more details of the procedure). The resulting Q-sorts were analysed using a data reduction technique to identify any shared perspectives that existed within the sample; details of the analysis are given below. Teachers were also asked to sort the same items, with regards to how they thought their students perceived the items. In terms of research methods, there was a high congruence between student perceptions and teacher views of student perceptions. There were some similarities found

across the groups with the teachers tending to agree that students found **theoretical understandings**, **reflexivity**, and **objectivity** to be difficult. Some teachers raised issues of familiarity to be an underlying reason for this perceived difficulty: 'lack of experience with conducting their own research makes it a difficult concept to grasp' (**objectivity** ST18); 'they have little experience of it and struggle to see benefits' (**reflexivity** ST15); 'a lot of new terminology and concepts' (**theoretical understandings** ST10). Whilst others focussed on a lack of preparedness, e.g. 'They find theoretical debate difficult as they are not prepared for this at GCSE' (**theoretical understandings** ST8). The complex, abstract nature of these items also contributed to this placement: 'conceptual difficulty in understanding' (**realism** ST12); 'more abstract philosophical idea' (**realism** ST1); '[requires] higher level thinking' (**reflexivity** ST11). At the other end of the scale, the teachers appeared to agree that students found some simpler data collection techniques to be easier than other items in the sort. These items included interviews and surveys, as well as the somewhat associated concepts of access and primary data. The reasons given for these placements mirrored those given for the placement of the difficult items. Namely, those of familiarity and (a lack of) complexity: '[they have] heard the term lots before and can visualise its meaning' (**access** ST11); 'they have had experience of it and are familiar with it as a method' and 'straightforward' (**interviews** ST15 and ST12, respectively); 'studied since year 6' and 'easy to define and understand' (**primary data** ST7 and ST13, respectively). Considering the groups in a holistic manner, in terms of their

component arrays, it becomes apparent that both groups perceive that students consider practical concepts, concerned with data collection to be the easier ones in the range of items. At the other end of the spectrum, it is the more complex, theoretical concepts which are considered the most difficult. Perceived familiarity plays a key role in the positioning of the items. This is interesting when considering those items concerned with data collection, as students tend not to have opportunity to collect their own data as non-assessed coursework is not engaged in (as discussed in Chapter 4). Indeed, one teacher stated that interpretation of data was the most difficult for students precisely because of this: '[there is] very little opportunity to interpret data in A-level Sociology' (ST20).

There was greater similarity between the teachers when it came to their perception of their students' relationship with the research methods elements of the curriculum, than with the relationship of the same items to the A level as a whole or the discipline itself (see Chapter 5). Despite this similarity, differences did still appear in relation to students, manifest in the identification of two groups in the analysis. The difference appeared to lie in the extent to which the teachers were conceptualising their students as analytically minded (or not), with one teacher group perceiving that interpretation of data was the most difficult for students and the other tending to citing data as the easiest item in the Q-set. Reasons given by these teachers related to familiarity to the students, e.g. 'used to data interpretation and application at school' (ST9); ease of demonstration, e.g. 'easy to show students examples from real

research' (ST18); and the perceived lack of complexity, e.g. 'more 'right' and 'wrong' answers; can learn types' (ST19). These teachers also placed ethics towards the easy end of the spectrum. As elsewhere, reasons for this appeared to be referring to experience with 'application to real life' (ST5) and ethics 'cross[ing] a number of different subjects so they feel more confident' (ST8). Those students that are somewhat familiar with ethics because they come across this concept in their other studies are likely to be those who take more science-based subjects, such as Psychology and Biology, and thereby have greater exposure to and be well-versed in research methods more broadly, as well as quantitative methods specifically. Interestingly, many of the teachers interviewed commented on the tendency for Psychology and Sociology to be studied alongside each other, particularly in those institutions where attainment tended to be higher. However, it was seen as unusual to take Mathematics or any of the natural science subjects alongside Sociology. This may well relate to the quantitative ability required of the other subjects, as well as the expectations about the type of student who enrolls on a Sociology course.

Whilst Q-Step centres may be keen to encourage those with a strong Maths background to study sociology at HE, this is regarded an unusual combination at A level. It is difficult to determine the extent to which this combination is unusual with the data collected for this project given the large number of possible combinations (approaching 21,000 according to Bell, Malacova & Shannon, 2005). However, it is the case that the most common combinations

of three A levels tend to involve the natural sciences and Mathematics (Bell *et al.*, 2005). Indeed, Rob gave the example of a current student of his who had the 'random' combination of a science, Maths and Sociology, with no one 'quite sure why' he's studying that combination. Although knowing that it is not necessarily the case, there appears to be an expectation on Rob's part that subject choices should be informed, meaningful and coherent. As discussed in the preceding section, students are not necessarily making informed choices with progression in mind. Much more usual is a combination with 'similar' essay-based subjects, which many of my teachers referred to as 'other humanities' (emphasis added). This tendency towards student specialisation is particularly felt in the post-16 curriculum (Higham & Yeomans, 2011), although (to a degree) starts at the beginning of 14-19 education with the selection of which GCSE subjects to pursue. There were steps to broaden out the curriculum for 16-19 year-olds through Curriculum 2000 and the introduction of AS levels in England and Wales, and more recently the introduction of the compulsory Welsh Baccalaureate in Wales.⁹⁸ These activities were successful to an extent, with the example of the introduction of AS levels resulting in a reduction of specialization from 35% to 21% in 2002 (Bell *et al.*, 2005). However, the return to linear A level courses with terminal assessment in England may well undermine this attempted broadening.⁹⁹

⁹⁸ As noted in previous chapters, Scotland is deliberately excluded from this discussion as it introduced earlier reforms which were arguably more radical (e.g. Gamoran, 1996).

⁹⁹ Although the extent to which Curriculum 2000 has affected change has, in any case, been challenged by researchers such as Davies *et al.* (2009) and Hodgson *et al.* (2004).

As mentioned above, analysis of the A level completer Q-sort data found results which were somewhat aligned with the results of the teacher data, suggesting that teachers do have a fairly good understanding of the level of ease with which students of Sociology find various aspects of the research methods curriculum. Overall, the A level completers tended to consider **reflexivity** and **pluralism** as the most difficult, with reasons given including a difficulty in understanding the concepts or not studying the principle 'in depth' (SS20), if at all. As in the teacher data, there appeared to be two groups of students, those who might be considered analytically minded, and those who might be considered less analytically minded. Whilst those in the analytically minded group tended to find items connected to data easier, including data collection methods and **interpretation of data**, they tended to find **theoretical understandings** relatively more difficult. An A level completer aligned with the analytically minded group stated that the reason that they found it most difficult was because they found 'all sociological theories (are) difficult' (SS101). Conversely, those who were found to be similar to each other and who were outside of the analytically minded group, were those who we might consider to be more theoretically minded. Whilst those in this second group found some specific theoretical concepts to be difficult, the general statement of **theoretical understandings** was considered to be relatively easier. Again, this was attributed to reasons of familiarity, 'studied in a lot more depth' (SS55), and lack of complexity, 'easiest to remember and understand other people's theories and ideas' (SS27). This group also placed relatively complex considerations at the easy end of the spectrum. Feminism, in particular, was

placed in the easiest position with reasons given for this placement including those concerning frequency of exposure along with some sense of effortlessness. This latter point was captured by two participants' reasoning: 'feminism came very naturally to me and the viewpoints presented were just understandable' (SS16); 'I am a feminist and so everything we learnt was things that I knew anyway' (SS47). Whilst this second quote may be interpreted as somewhat flippant, this identification with the discipline was referred to in some of the teachers' accounts. Whilst typically concerned with the minority, the teachers interviewed did refer to some of their students as 'the odd determined sociologists' (Rob). Returning to collection and analysis items, the distinction between the theoretically and analytically minded students may be analogous to the distinction between qualitative and quantitative to a certain extent, with the former finding official statistics much more difficult than the latter group (this can be seen in the location of placement of this item in the factor arrays for each group detailed in Figure 20 and Figure 21).

Of note throughout the students' reasoning as to relative difficulty of the research method elements were internal, student-level attributes, not present in the teachers Q-sort reasoning. Rather than issues of cognitive capacity to understand and apply these terms, here I am referring to issues of enjoyment that the A level completers cited. Examples of this included the enjoyment that students got out of the learning process, with phrases such as 'it was fun to learn' (SS15), and engagement with the topics, 'I love theoretical approaches, I find them very interesting' (SS59). Whilst these affective

attributes were not cited as reasons for placements of specific items by the teachers (in terms of their students), there was some of discussion of this in the teacher interviews. Much of the existing literature claims that sociology students are reluctant to engage with quantitative methods (as discussed in Chapter 1), although this was not found in all of the teachers' accounts. Whilst there was some recognition of a fear and apprehension to engage with 'anything to do with maths' due to prior experience of difficulty and/or failure (Aaliya), others considered this prior experience as familiarity which put students at ease with vocabulary and concepts used (Olivia). Whilst some teachers stated that students exhibited a preference for qualitative over quantitative methods (James, a Sociology teacher in a 6th form college, and Charles), others did not see a noticeable difference between them, conceptualising students as typically 'seeing them [quantitative methods] the same as qualitative methods in terms of which they prefer or which they find most scary or daunting' (Olivia).

An important point to raise here is the discrepancy between what it means to study research methods at A level compared to undergraduate level. Much of the existing literature is set in the latter setting, where students must engage more fully with data collection, analysis and interpretation. Conversely, at A level, expectations about levels of engagement are much lower (as discussed in the previous two chapters). Despite this, it is interesting that some teachers exhibited an alternative view of their students, in spite of their typically low mathematical ability or inclination. Placed within the performativity culture in which students find themselves, regardless of the level of interest, enjoyment

or disposition students have towards research methods, there was a strong sense from both teachers and students that they *must* engage with them. The pervasiveness of the performativity culture was evidenced in the extent to which the relative difficulty of topics was explained by the amount to which they contributed to assessment. For some, it was not only complexity which made theoretical understandings difficult but also the weight given to it in assessment. This was neatly captured by one student who described them as ‘the heaviest aspect which we *needed to memorise* in order to gain higher marks within exam papers so theoretical understanding is the most difficult in my opinion’ (SS81; emphasis added). The added emphasis here highlights this student’s understanding of the requirements of their course which clearly relates to issues of deep and surface learning discussed in the preceding chapter. Memorisation indicates a surface approach to learning content, particularly when coupled with the focus on examination, rather than a deep approach concerned with knowledge and understanding (see Chapter 5 for a discussion of this with relation to teachers’ practices).

6.4 The structure of student attitude

Throughout the discussion of Sociology students’ perceptions of and engagement with research methods above, several themes begin to emerge which appear to shape student attitude and engagement. These are akin to those identified in other research as being key to modelling student decision making (Davies *et al.*, 2009; Nagy *et al.*, 2004) and can be regarded as temporal in nature. Familiarity and prior attainment can be framed as referring to the

past; examinations and aspirations, as referring to the future; and interest and enjoyment, as referring to the present. Indeed, the current study found these temporal elements exist in the structure underlying students' attitudes towards research methods generally and quantitative methods specifically. As described earlier, student attitudes towards research methods were measured using new and existing scales: Attitudes Toward Research (Papanastasiou, 2005) and Perceptions of Quantitative Methods (created for this project).¹⁰⁰ Dimension reduction techniques were used to establish the underlying structures of these scales, which provided evidence of the three temporal elements existing as underlying traits with similar relationships to one another. Both the substantive interpretation of the factors and the relationships between them were replicated across the topics (research methods and quantitative methods) and subsamples. The underlying traits uncovered by the analysis were, in turn, those concerned with self-efficacy (concerned with the past), positive affect (concerned with the present), and usefulness (concerned with the future). The factors and the relationships between them can be seen in Figure 22. As can be seen, the non-negligible relationships are between affect and the other two factors. Before discussing interpretation of the overall structure, consideration will be given to the individual factors and how they sit with one another.

¹⁰⁰ The details of the analysis and validation of these scales can be found in Appendix II.

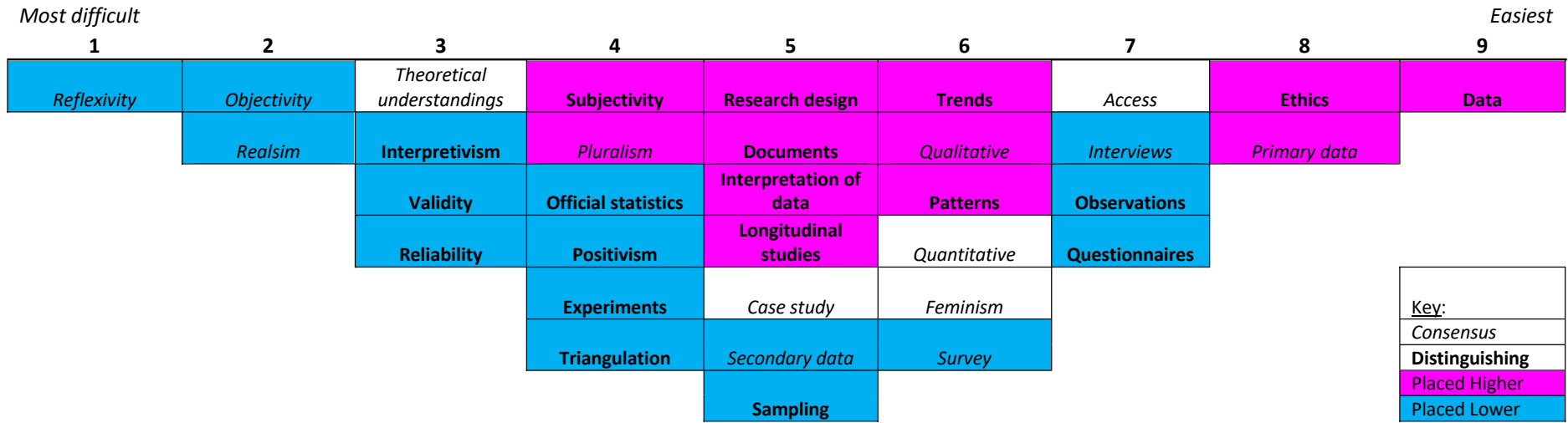


Figure 19: Teacher perception of student attitude: less 'analytically minded'

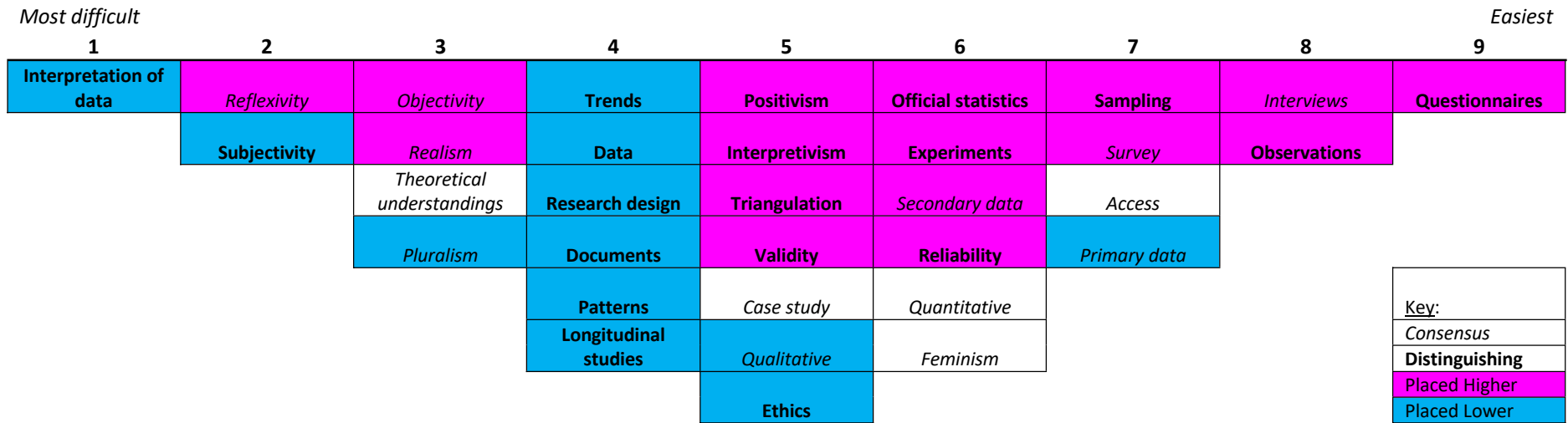


Figure 20: Teacher perception of student attitude: more 'analytically minded'

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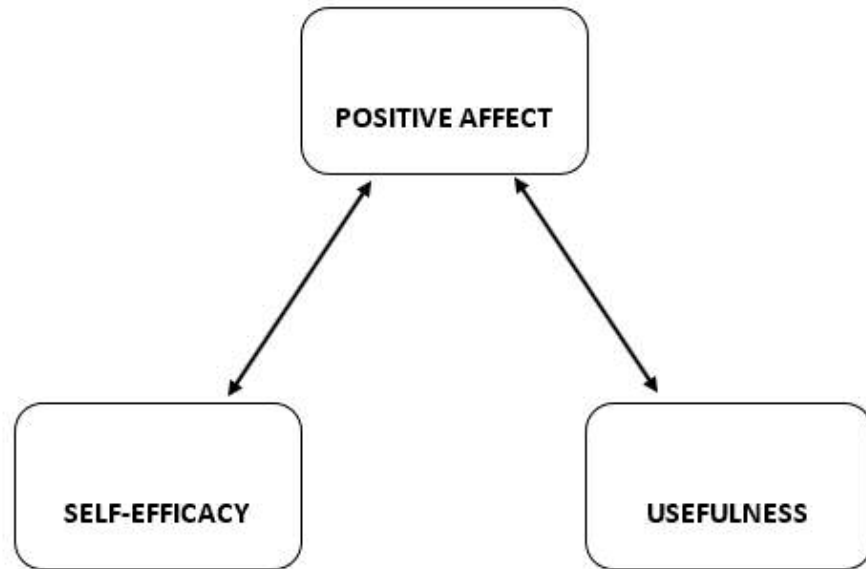


Figure 21: Academic self-concept structure

6.4.1 Affect and usefulness

The affect factor was manifest by variables that described (mainly) positive emotions in association with the topic under investigation. Scores on this factor are representative of the extent to which respondents subjectively experience positive feelings when engaged in the topics under investigation. The labelling of this factor as 'positive affect' distinguishes it from negative affect, which is the extent to which one subjectively experiences unpleasant feelings. The latter here is similar to what is termed emotional arousal when describing sources of information for self-efficacy (detailed below). Affect itself is one of the three components identified in the literature as being a source of information for attitude basis and development. Indeed, it makes intuitive sense that part of our attitude towards something has an affective component. As well as affect, literature (such as that by Rosenberg & Hovland, 1960) on attitudes identifies two other components: behavioural and cognitive. Whilst the behavioural component was included to a certain extent

in some of the scales, it was not identified as an underlying factor. Rather, these behavioural elements of the behavioural basis of attitudes can, arguably, be inferred through both engagement (or lack thereof) with such topics in the first instance, as well as subsequent choices in terms of pursuing careers that utilise (or do not) skills and knowledge associated with such topics. It is the usefulness factor to which this latter point refers. Although behavioural aspects may be a part of what the usefulness factor can be associated with, it may be more closely allied to the cognitive. Cognition refers to thoughts and beliefs, abstract and separate from personal emotions. The level to which something is considered to be useful clearly sits within this realm of abstract thought and prediction.

Usefulness in this case refers to the level of utility particular skills and knowledge associated with the topic under consideration will provide in the future for the respondents. The factor was manifest in variables which related to how useful the topic would be in their intended professional or academic pursuits. It is important to note that this is usefulness beyond that for the specific course which was being investigated, it refers to future endeavours that may be some way into the future. Rather than proximal goals, this is consideration of self-set long term career plans (see Hackett & Betz, 1995, and Schunk, 1995). Within the ATR scale this usefulness was extended to include other students, not just the respondent themselves. This affirmation (or otherwise) that all students should be taught research methods indicates a perception of general usefulness. However, most of the manifest variables for the usefulness factor were concerned with usefulness specific to the

individual, measuring the extent to which such topics will be beneficial to them as an individual in the future. This factor had a relationship with the affect factor which was stronger than that between self-efficacy and affect. This will be discussed in greater depth below. However, it is worth noting at this juncture that both relationships are bidirectional. This, and the strength of the relationship, suggests that the usefulness factor is indeed representative of the cognitive element of attitude formation. The relationship between usefulness and affect is not surprising: the extent to which one enjoys a topic may influence the extent to which a career (academic or otherwise), which utilises the associated skills and knowledge, might be envisaged as a possible future. What stands out is the lack of relationship between usefulness and self-efficacy. The usefulness factor is manifest in variables that consider future academic and career path choices. Mainly concerned with how helpful skills/topics learnt will be to future endeavours, one would assume that this might have some motivating role in behavioural choices. As will be explored in the following sub-section, usefulness and self-efficacy can be disparate. However, one would assume that self-efficacy would have a role to play when choosing which academic/career path to follow. Indeed academic 'self-concept'¹⁰¹ (Shavelson, Hubner and Stanton, 1976) has been found to be the single most important predictor for selecting particular subjects (Marsh and Yeung, 1997). A greater exploration of self-efficacy and the overall factor

¹⁰¹ It is important to note that Marsh and Yeung refer to 'self-concept' to mean the same as self-efficacy. I have refrained from using the phrase self-concept in this sense as I am inclined to consider self-concept to encompass more than this.

structure is necessary to better understand the underlying mechanisms/structure at work.

6.4.2 Self-efficacy

Of particular salience to the labelling of this factor was the self-assessment that the individual could not perform well in the topics asked about. The concept of self-efficacy is concerned with this performance: it is the degree to which individuals perceive themselves to possess, and be able to execute appropriately, the skills necessary to be successful at a task (to experience 'personal mastery'; Bandura, 1977, p.193). The fact that this factor was only negligibly related to the usefulness factor supports this interpretation of what this factor represents. Self-efficacy is somewhat separate to the behaviour-response model that one might follow when considering whether a goal is worth pursuing. An individual may recognise the usefulness of the task at hand and be aware of what behaviour might bring about a successful result but if they have low self-efficacy, that is they do not believe that they have the skills to achieve said result, they will not engage in that behaviour regardless of how useful they perceive it to be. This lack of engagement is to avoid the negative consequence of failure. It is this lack of personal mastery, rather than engagement with the task itself, which primarily motivates individuals to avoid the task. Whilst negative affect is associated with low self-efficacy and is in itself something that individuals may want to avoid, this can be understood as a source of information for the individual assessing their self-efficacy and as a 'coeffect', rather than an outcome or predictor, of defensive behaviour (Bandura, 1977).

It is important to note that self-efficacy is contextual and subject to modification and change. Several external and internal, indirect and direct, sources inform individuals' self-efficacy. External sources include verbal persuasion (or otherwise) and vicarious experiences (i.e. how others behave and perform). The role of others is central to social learning theory from which the concept of self-efficacy is drawn. One can easily imagine the differing actors that fill these roles. Teachers may predominately provide the verbal persuasion, although peers may also play a role in this aspect. Peers are the ones to whom individuals will look for evidence of vicarious experience. If an individual sees their peers achieving they are more likely to consider that successful performance is a realistic goal for themselves. The extent to which this will be the case is dependent on the extent to which the individual identifies with the model, or models, engaging in the task. The more the individual considers themselves to differ from the model(s), the less vicarious experience will affect the individuals' efficacy.

The source of others success also affects the extent to which vicarious experience has an effect on self-efficacy levels. Interestingly, and conversely to personal mastery experiences (detailed below), if individuals perceive that others are succeeding due to ability, rather than effort, then self-efficacy is less likely to be affected.¹⁰² Past 'personal mastery experiences', i.e. how well an individual has performed in the past, is an internal, direct source of

¹⁰² It may be particularly difficult for students to determine the source of their peers' success, especially when consideration is given to perceptions and projections of 'effortless achievement' (Jackson & Dempster, 2009; Jackson & Nyström, 2015).

information for self-efficacy judgements. Similarly, to vicarious experience, the source of success is important in how a success is perceived and judged. It follows that an individual's self-efficacy is increased if they attribute an achievement to their own capabilities rather than to external, situational factors. Interestingly these capabilities cannot be too effortful, a perceived 'innate' *ability* is more likely to increase self-efficacy than achievements which are gained through effortful endeavour. The final source of information is emotional arousal; with associated bodily reactions (e.g. sweating, increased heart rate) is part of the 'physiological indexes' (Bandura, 1997; Bong, 2013) from which self-efficacy both draws information and informs. In this context emotional arousal is taken to encompass negative emotions, such as those exhibited in this factor's manifest variables (e.g. anxiety and stress), rather than the positive emotions of joy, happiness and excitement. These negative emotions associated with the self-efficacy factor are very much linked to how one might perform, with manifest variables of 'confusion' and 'challenging' alongside anxiety and stress, one can infer that these negative connotations come from the concern of failure to perform.

The emotional arousal element of the self-efficacy factor is distinct from the emotions expressed in the affect factor, detailed in the previous sub-section. These two factors, affect and self-efficacy, are measuring similar but distinct concepts. It is tempting to assume that affect here is one end of the emotional spectrum, the positive end, whereas self-efficacy is at the other end of the same spectrum, the negative end. However, were this the case, then one would expect the relationship between the two to be stronger than that

demonstrated in this analysis. Instead the findings here support the interpretation that negative affect (or emotional arousal) is just one part of the self-efficacy factor and that the affect factor is a distinct factor in its own right. Indeed, the fact that these factors do not correlate more strongly suggests that an individual can have varying levels of self-efficacy and still have positive affect. This is both counterintuitive and encouraging from a pedagogic point of view. It suggests that low self-efficacy does not necessarily mean low affect towards a topic; a person may think that they are bad at something but still find the subject interesting. Conversely, it may also mean that those with high self-efficacy may not necessarily have high affect towards a topic; they can hold a positive perception of their abilities in a subject/topic but not enjoy or find it interesting. In relation to the standard conceptualisation of attitude formation, we can see from the factors identified that elements of both the affective and cognitive can be seen in the affect and usefulness factors respectively, with self-efficacy apparently consisting of both affective and cognitive elements. However, there is a more complicated, nuanced understanding of attitude formation and motivation apparently being demonstrated with this factor structure, namely that which considers the factors themselves as representative of contextual academic-selves.

6.4.3 Academic self-concept as temporal

The relationships between the factors demonstrate an underlying factor structure which can now be considered in greater depth. Although self-efficacy necessarily has some element of forward looking, in that it is the ability to achieve outcomes in the future which is being considered, it is drawn from

the past. It is past (mastery) experiences, vicarious experiences that have been observed, and verbal persuasion (or otherwise) that has been received which shapes, to a greater or lesser extent, one's self-efficacy. In terms of the factor structure, this is juxtaposed with the usefulness factor which is necessarily concerned with the future. Usefulness in this context refers to how useful the knowledge of the topics under discussion, and skills acquired, will be in future endeavours. Knowledge and skills can obviously be of practical use in the present, as well as have being of use in the past, but the underlying construct here refers to the practical utility such knowledge or skills will have in the future. If we consider the self-efficacy factor to represent our past academic-self and the usefulness factor to represent our future academic-self¹⁰³, the relationships between the factors begin to present an interesting conceptual structure. No direct relationship between the past academic-self factor (self-efficacy) and future academic-self factor (usefulness) was found, yet both factors had direct relationships, of varying magnitudes, with the affect factor. This factor, affect, is one of interest, enjoyment, and engagement, all verbs that have connotations with the present. Affect in this sense refers to an emotion, i.e. a current state, which influences behaviour rather than a goal, i.e. a future event, motivating engagement. Continuing with the theme of temporal elements of the academic-self, affect therefore refers to the present academic-self. Considering the factors in this way allows interpretation of the

¹⁰³ Academic in this sense refers not only to formal educational training but also to future career, whether or not in academia itself. That is, these students are likely to envisage careers which sit in a theoretical, non-vocational field, rather than a practical, vocational, one. It is the hypothetical, thinking, analysis skills under their consideration rather than practical, manual, manipulation skills.

structure to make more intuitive sense. The present (affect) factor can be considered as a mediator between the past (self-efficacy) and future (usefulness), which explains the lack of direct relationship between the past (self-efficacy) and future (usefulness) factors. This conceptualisation of the structure infers a directional relationship, with the past (self-efficacy) affecting the present (affect), which in turn affects the future (usefulness). Thus:

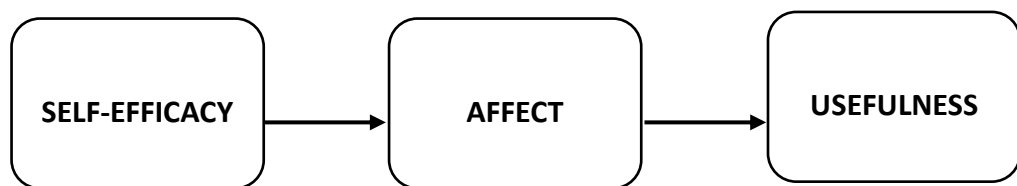


Figure 22: Elements of temporal academic self-concept

The correlational relationships, signified by the double arrows in Figure 22, do not denote any specificity of direction in the relationship. Although one might infer that the past (self-efficacy) factor is a great influence on the extent to which one might enjoy and have interest in a topic, as manifest of the present (affect) factor, considering the iterative nature of the learning process one can equally see how engagement with a topic can affect one's self-efficacy. If affect is positive, the student will be engaged, which may provide some positive feedback into the system through enjoyment of and likely improvement in that particular area. Likewise, if affect is negative one may be reluctant to engage with a topic, which will limit the opportunity for performance mastery experiences which will not give self-efficacy room to improve, which will lead to avoidant behaviour, which will mean that

engagement is less likely, and so on. Similarly, the relationship between the present (affect) factor and the future (usefulness) factor is not necessarily one of a single direction. It makes sense that one's present academic-self will have some influence on the type of academic-self one might envisage for the future. If an individual enjoys a topic they may decide to pursue a career which entails this. Conversely, if one has a potential future career in mind which is likely to entail elements of the topic in question then it may be likely that one would show positive affect (at least in terms of interest, if not enjoyment) towards such activities. This type of iterative, reciprocal relationship is similar to that captured by the Reciprocal Effects Model proposed by Marsh and Craven (2005; 2006) which shows a similar type of relationship between academic self-concept and achievement. Although the underlying factors in this structure are related to one another, it is important to reiterate that they are also distinct. Indeed, the actual relationships between the past (self-efficacy) and future (usefulness) factors to the present (affect) factor are not strong. This suggests that although conceptions of self are influential on one another, other forces are having influence on and are helping to shape these selves. These other forces are primarily those of the learning environment in which the individual finds themselves. Learning environment here goes beyond the structures, physical and otherwise, that the learner finds themselves in, and extends to the social interactions and relationships they have with their peers and teachers.

The above has demonstrated the conceptualisation of academic-self as consisting of three related yet distinct elements. It is important to note that

this is a *structure* which is presented, and the actual manifestation of these factors is context dependent. This is true both in the subject/topic which is being investigated, and the time in which these elements are measured. It is these elements which make up an overall academic self-concept which will vary from topic to topic and throughout individuals' learning journeys. It is posited that this underlying structure will appear when investigating any given topic; that individuals conceptualise their academic-self using the three factors (or elements) detailed above. Rather than domain specific components these are structural elements which come into play when considering the self as a learner in any given context; that is an aptitude to learn rather than aptitude in a particular subject. As such this does not contradict previous work on academic self-concept, such as that following Shavelson, Hubner & Stanton's 1976 conceptualisation. This work posits a hierarchical structure within which academic self-concept sits; underneath and as part of a global self-concept, and above and consisting of domain specific self-concepts (Marsh, Byrne & Shavelson, 1988). Rather than being domain specific the current model is one of a general structure by which these domain specific self-concepts can be conceptualised. This becomes important in areas or cases of strategic importance, giving shape and understanding to mechanisms and elements of those mechanisms which educators might try to target through interventions aimed at increasing engagement with specific topics, such as quantitative methods.

6.4.4 Student attitudes and research methods

Not only does the structure identified above contribute to an understanding of student attitude and engagement useful for the design of interventions designed to improve student engagement, it allows these temporal elements of student academic self-concept to be measured and assessed by taking an overall average of each of the factors for each of the scales. As such, Sociology students' attitudes towards research methods can be compared to their attitudes towards quantitative methods.¹⁰⁴ Additionally, given that the same scales were completed by an independent sample of students regarding a different subject but the same topic, direct comparisons between the subjects can be made. Given that Psychology students are generally positioned as possessing the same characteristics as Sociology students, but with relative aptitude for (and requirement in the course of) a certain level of mathematics, this is the comparator subject used here. In terms of research methods generally, an overall average of each of the factors was taken, for the sample as a whole and for the subjects individually. These, along other descriptive statistics, can be found in Table 5. As can be seen from the table, taken as a whole sample, A level completers tended to rate research methods as somewhat useful ($M = 5.23$), with ratings of both the positive and negative factors to be around the mid-point of the scale. Examination of the standard deviations for these estimates revealed that both the positive and negative

¹⁰⁴ To a certain extent. It is worth pointing out the limitations of comparing scores on two separate scales, even if thought to be measuring the same construct. Although not conclusive, such comparisons do provide a vehicle for comparing general levels between the two areas.

factors showed a slightly larger dispersion of scores than the useful factor. It is also apparent from the statistics detailed in Table 5 that there are some marginal differences between the two sub-samples estimates. Although not large, these differences were tested for statistical significance using simple *t*-tests. On average, how the students in the two sub-samples rated their self-efficacy did not differ significantly from each other, $t(228) = -0.672, p > 0.05$. Psychology students tended to rate the usefulness of research methods significantly higher than Sociology students, $t(355) = -1.995, p < 0.05$, although this difference had a small effect size of 0.11.¹⁰⁵ Similarly, Psychology students demonstrated a more positive affect to research methods which was statistically significant, $t(355) = -2.268, p < 0.05$, although this also demonstrated a small effect size of 0.12.

Table 5: Descriptive statistics of factor scores by sample.

Factor	Sample	Mean	Standard Deviation	Minimum	Maximum
Self-efficacy	Sociology	3.91	1.04	1.29	6.14
	Psychology	4.00	1.20	1.00	6.57
	<i>Whole</i>	3.97	1.15	1.00	6.57
Affect	Sociology	4.57	1.12	1.88	7.00
	Psychology	4.86	1.09	1.25	7.00
	<i>Whole</i>	4.77	1.11	1.25	7.00
Usefulness	Sociology	5.08	0.95	2.56	6.78
	Psychology	5.30	0.95	1.11	7.00
	<i>Whole</i>	5.23	0.95	1.11	7.00

Sociology sample $n = 107$.

Psychology sample $n = 250$.

Whole sample $N = 357$.

¹⁰⁵ Effect size calculated by converting t into a value of r , using the following equation: $r = \sqrt{t^2 / t^2 + df}$.

In terms of perceptions of quantitative methods, averages, along with other descriptive statistics can be found in Table 6. Slight differences between the two subsamples were tested for statistical significance. Whilst there were no statistical significances between the subsamples in terms of self-efficacy and affect factors, there was a statistically significant difference between the students in terms of the usefulness factor, $t(355) = -3.019, p < 0.05$. Sociology students tended to have a lower score on the usefulness factor than Psychology students ($M = 4.49$ and $M = 4.94$, respectively), suggesting that Psychology students consider quantitative methods to be more useful to their future academic and professional futures. Whilst the effect size of this comparison was small, it is worth noting that it is larger than that found for research methods more generally ($r = 0.16$). Of interest to include here is the two subsamples answers to the individual indicator removed from the factor

Table 6: Descriptive statistics of PQM factor scores by sample.

Factor	Sample	Mean	Standard Deviation	Minimum	Maximum
Self-efficacy	Sociology	4.40	1.30	1.00	6.67
	Psychology	4.19	1.37	1.00	7.00
	<i>Whole</i>	4.25	1.35	1.00	7.00
Affect	Sociology	4.26	1.31	1.00	7.00
	Psychology	4.38	1.28	1.00	7.00
	<i>Whole</i>	4.35	1.29	1.00	7.00
Useful	Sociology	4.49	1.34	1.33	7.00
	Psychology	4.94	1.27	2.00	7.00
	<i>Whole</i>	4.81	1.31	1.33	7.00

Sociology sample $n = 107$.

Psychology sample $n = 250$.

Whole sample $N = 357$.

analysis, 'performing well in quantitative methods topics was important to receiving a good A level result'. Sociology students ($M = 4.47$) had statistically significantly lower agreement to this statement than the Psychology students ($M = 4.86$), $t(355) = -2.156$, $p < 0.05$. Although, again the effect size was relatively small at $r = 0.11$.

Lastly, considering how these three factors interact with one another on a case-by-case basis can be done by looking at the different response patterns found in the data. To identify common patterns of response, summated scales were collapsed so that scores under 4 indicated disagreement, 4 – 5 indicated a mid-point of neutrality, and scores of 5 and over indicated agreement. Of the whole sample 26 (of a possible 27) patterns were identified, the most common of which was one of agreement with all factors (at 13% of cases). Individuals with this pattern were likely to agree that quantitative methods were useful, have high self-efficacy, and positive affect towards quantitative methods. Two patterns which were similar to one another accounted for another 13% of the responses. These represented a recognition of the usefulness of the quantitative methods, with a positive affect but a low (or 'neutral') self-efficacy. Lastly, the final pattern with a size above 5% (at 7% of cases), represented individuals who agreed that quantitative methods were useful but for whom self-efficacy was low and who demonstrated a neutrality in their affect factor. In terms of the subject subsamples, 25 patterns were identified for the Sociology students and 26 for the Psychology students. The most common pattern for both samples was that which indicated agreement with all three factors, recognising the usefulness of quantitative methods,

having a high self-efficacy, and holding a positive affect towards quantitative methods topics (Sociology: 13%, Psychology 12%). Of particular note is the second most common pattern found within the Sociology students. 6% of these students indicated that they did not recognise the usefulness of quantitative methods, held a low self-efficacy, and had a negative affect towards quantitative methods topics.

6.5 Discursive summary

Using a social psychological approach, this chapter has shown that Psychology students differed from the Sociology students by having a more positive affect towards research methods generally, along with believing that both research methods and quantitative research methods particularly will be more useful in their future endeavours. It is interesting to note that, contrary to how they tend to be positioned in HE and within the literature, Sociology students appear to be no more negative towards quantitative methods in terms of their self-efficacy or affect than Psychology students. This supports assertions made by some of the teachers interviewed and reported in the first section of this chapter who claimed that, whilst students enrolled onto Sociology A level may typically be those who are least likely to find this area their favourite topic, students *are* willing to engage. How quantitative methods are positioned within the A level by teachers and assessment practices becomes particularly important here. If we consider the instrumental approach that both students and teachers take towards the course, it follows that the perceived usefulness

is an element which can be readily altered and affected. In discussing quantitative methods content for his Sociology students, Michael asserts:

‘In terms of skills that kids need for work and employment and getting a job in anything, or just for life, they need more. But until it’s rewarded more in the exam, with more marks, teachers won’t spend lots of hours on it because it’s not where their grades are made or lost’

This preoccupation with performance and accountability is something which clearly dominates teachers’ professional lives, impacting on their teaching practices, and also affects the ways in which students engage with subjects and topics therein. Whilst problematic in many ways, the instrumental approach taken by students may mean that they readily engage with topics despite any reservations, against the discourse present in the HE literature. Furthermore, if this engagement is made explicit then students may be more likely to engage with such topics within undergraduate courses, as well as aiding in their decision making (as implied by Davies *et al.*’s, 2009, reasoning). Of course, if these courses are not aligned, problems arise in a conflict between students’ expectations and their experience of Sociology within HE.

Returning to issues raised in the preceding chapter, this potential conflict is recognised by some teachers in their practice in terms of the substantive detail of issues (see Toni’s comments about not wanting to teach things which students would have to ‘unlearn’ them in pursuit of a sociology degree, Chapter 5). However, this may not be so readily recognised as an issue in the

conveyance of the appropriateness or otherwise of quantitative methods in the curriculum. Whilst A level students appear to be willing to engage with quantitative methods, if only in an instrumental manner, they may question this after exposure to teachers who question its worth. Whilst by no means the only explanation, this may be one of the factors influencing former A level Sociology students engagement with quantitative methods on their sociology degrees.

Context within a social psychological approach, such as described in this chapter, is positioned as an influence on and mechanism for affecting change within individual students. The locus of control appears to lie in individuals who are ultimately responsible for their own success or failure. It is easy to see how a deficit model of quantitatively inept Sociology students arises out of this conventional approach to understanding quantitative literacy. Whilst these approaches can be particularly useful when designing interventions to change the attitudes and perceptions of individual (or cohorts of) students, it does not paint the whole picture. The approach taken in the first section of the chapter provided insight into the role of context in which these students operate. It presented how students are differently limited in their decision-making by the systems and institutions within which they are educated. Although student-level attributes are not absent in this approach, with a recognition of the near-universality of the qualification and the performativity culture within which students operate, the source of the instrumental nature of students begins to be located outside of the individual. Whilst the detail of focus was separate for the two parts, both addressed the issue of the

quantitative literacy of Sociology students, offering nuanced understandings and conceptualisations of the matter at hand.

7 Discursive conclusion

7.1 Introduction

The preceding analytic chapters offered analysis, discussion and interpretation of various elements of the curriculum. Although drawing on teacher experience throughout the analysis, these elements were treated in a somewhat isolated manner for the purposes of analytic clarity. Pertinent findings from the analyses have already been treated in a discursive manner and, as such, the purpose of this chapter is to bring together the common threads which weaved throughout the preceding work. By placing the overarching findings in the context of the Q-step initiative, and systems within which the A level operates, this chapter attempts to give a fuller, contextual understanding of the findings already laid out. The first section re-examines the findings from the preceding chapters from a new angle, attempting to bring together the findings to determine the position of quantitative methods in the A level curriculum. What is found is a story of marginalisation, from quantitative methods to research methods more broadly, and through to the subject itself. The research questions and context within which the research sits are kept in mind throughout this discussion. As such, directly following this discussion, attention is turned to the research questions themselves and the extent to which the findings answer them, followed by implications of the research both for the Q-step initiative and more broadly. Limitations of the research and suggestions for future research are also discussed, before the chapter closes the thesis with some concluding remarks.

7.2 Quantitative methods in the Sociology A level

The preceding analysis used a conceptualisation of the curriculum which separated the actors of the curriculum (written, teachers, and students) to explore the nature of quantitative research methods in the Sociology A level curriculum. What was discovered was a positioning of quantitative methods which placed them as relatively less important than qualitative methods, in terms of both their usefulness to the subject and discipline. This was seen in the assessment practices of the written curriculum, as well as the pedagogic practices of some of the teachers. This marginalisation shapes students' understanding of the appropriateness of quantitative methods in sociology and may very well have an influence on the notions of the usefulness of these methods for the students. It became apparent whilst conducting the analysis that this theme of marginalisation ran throughout the levels and stages of analysis: quantitative methods are marginalised, in an area of research methods, which itself is marginalised within the A level curricula. Furthermore, the very subject itself, despite being one of the most popular subjects to take at A level, is afforded low status at this level. The following describes and discusses the issues surrounding marginalisation at these levels, drawing on findings and themes of the analysis, with the hope of presenting an understanding of the position of quantitative methods in the context of the subject and how these interact.

7.2.1 The marginalisation of quantitative methods in Sociology

The apparent dominance of qualitative methods in British sociology is replicated in the A level curriculum. This was borne out in the analysis of both the written curriculum and the accounts of the teachers, albeit to a lesser extent. The analysis revealed that the written curriculum persists in reproducing a binary approach, with quantitative methods positioned as positivist and contested, whilst qualitative methods were positioned as interpretative and accepted within the discipline. Whilst there are legitimate grounds for encouraging a critical engagement with quantitative methods, the manner in which this is conducted in the written curriculum moves from critique to criticism. The fact that engagement with qualitative approaches are not treated in this manner, relegates quantitative methods from an equivalent alternative to a potentially unsuitable choice. Furthermore, many of the teachers appeared to pitch quantitative and qualitative methods against each other, with a tendency to advocate the use of qualitative methods, whilst simultaneously overtly declaring that the curriculum presented a 'false dichotomy'.

To an extent the 'quantitative as positivist/qualitative as interpretivist' dichotomy does reflect a wider discussion and debate in the discipline. This is arguably a historical one, based on traditional distinctions and affiliations. Problematically, it is not the debate that students are presented with, rather the positions are simply presented as 'fact' which they must learn in order to fulfil the requirements of the exam specification on which the curriculum rests. To a certain extent, nuance is lost in the highly prescriptive, relatively short

amount of space allocated in the curriculum for these explorations. Reinforcing these boundaries and distinctions between the approaches not only reaffirms some teachers' claims of the curriculum representing the history of sociology rather than contemporary sociology, but it also puts students that would continue into sociology at undergraduate on the back foot. Rather than approaching the study of the discipline in its field of production up to speed (as it were), these students potentially have to un-/re-learn what they thought they knew. This surely hinders rather than encourages the development of knowledge both for the individual but also for the discipline.

The ideological marginalisation of quantitative methods (as detailed in the preceding) allows for a marginalisation of any content concerned with quantitative methods. In turn, this results in quantitative skills not being necessary pre-requisites for studying the course, as they are not assessed. This creates a cohort of students who do not have a strong background in quantitative methods or reasoning. For those students likely to enrol on Sociology A level courses, who may well have had these negative prior experiences, learning that quantitative methods need not be engaged with and are actually a location of critique may appear to be a welcome feature. In theory, this could be a site of engaging those seen as traditionally non-academic in an academic subject. However, when combining this with how quantitative methods are presented less of a nuanced critique may be engaged in, in favour of participation in rhetoric against the appropriate use of such methods in sociological inquiry.

The lack of pre-requisite mathematics, along with generally weaker students, is the root of low quantitative methods skills in the typical A level Sociology student. This is so typical that it is expected that students follow this pattern and it is a surprise when students who do have mathematical/quantitative inclinations do choose this pathway. This can be seen to be true both in the A level and at undergraduate level. The notion that this is unusual has clear implications for the Q-step programme. Whilst the initiatives may challenge this combination as juxtaposition within their centres and cohorts, how to address this in the wider discourse may prove challenging. Although there is not a direct mapping of undergraduate and A level sociology, with lack of pre-requisites for enrolment on sociology undergraduate pathways, many of the characteristics identified by the teachers and included in the student sample appear to exist across the cohorts. Those who do follow the pathway from A level to undergraduate study, and indeed for those who come to sociology 'fresh', are likely to have a shared lack of base knowledge and skills (or at least skills in quantitative methods that have not been used since their GCSE examinations). The Sociology A level does not encourage a positive engagement with quantitative methods and gives the impression to A level completers that they will not be expected to *do* quantitative methods.

7.2.2 The marginalisation of practise in the A level

To the extent that quantitative methods are positioned as not as appropriate for sociological investigation as qualitative methods in the A level curriculum, it is perhaps unsurprising that students do not expect to and are not expected to engage with associated skills and activities. Clearly, this marginalisation of

quantitative methods made observing instances of quantitative pedagogy in action highly difficult and made such observations impracticable for the current study. Whilst the literature informing much of the activities of Q-step centres, and the research that they themselves are undertaking, involves students that may be less than enthusiastic to engage in quantitative methods, similar to those which we may find at A level, these are operating under different circumstances where lecturers have freedom and control over their own curriculum. Contrastingly, within the performativity culture of A level teachers have little room to exercise their own pedagogy. Perversely, it is this very performativity culture which means that these instrumental students may be readier than their undergraduate counterparts to engage with quantitative methods and analysis if it were included and valued in the specifications.

The A level would be a prime location to engage students in quantitative methods activities which could provide them with experience of mastery to challenge their (potentially) low self-efficacy beliefs. This would be to the benefit of all of these students, not just those who go on to study sociology at HE, going some way to address the quantitative skill-set and numeracy of a cohort of students, in a more direct way than the current Ofsted encouragement. Without requirements built into the very fabric of the A level specifications, from DfE documentation onwards, engagement in quantitative activities is minimal. The literature in HE also discusses the notion of embedding quantitative methods in substantive topics as opportunities to engage students with quantitative methods. Whilst there is some evidence to suggest that this may be happening in some A level specifications, with

modules which place the substantive alongside research methods, there would need to be a cultural shift and will to turn these into learning opportunities which encouraged engagement with quantitative methods. There are some instances of teachers with a passion for quantitative methods pushing this agenda, and indeed engaging students in simple quantitative activities, but these appeared to be in the minority; not least as this would require an engagement with the discipline in such a manner that they considered this a worthwhile pursuit, in addition to their already heavy workload.

The lack of engagement in quantitative methods is partly explained by the ideological but also by the nature of A level qualifications, with assessment resting solely in summative examinations. The lack of practise in the A level course means that not only quantitative methods but research methods generally become marginalised. There are few opportunities for students to demonstrate their knowledge of research methods, let alone put this knowledge into practice, with the only opportunities for the latter involving the design of a hypothetical study (and this not being a universal activity). This lack of empirical work in the subject not only limits opportunity for experiential learning but also creates distinct conceptual barriers between the subject and discipline, beyond that found in the recontextualization of other disciplines into subjects. Whilst students in Mathematics and Sciences practice the modes of enquiry that are used in the discipline, as do Geography students (amongst others), those who study Sociology do not have this opportunity.

There is a clear learning *about* sociology within the A level, rather than a learning to *do*. As such, students (and their teachers) are not welcomed into the discipline in the way that Young would have it; they are not sociologists, they are learning about what sociologists do. Clearly the work of sociologists goes beyond the empirical. Indeed, many of the famous sociologists which the students of A level sociology must make themselves familiar engaged in purely theoretical work. However, this type of sociological *work* does not appear to be made explicit as such. Without this being made explicit, and without a pedagogy of developing this within the students, it is little wonder that this divide is perpetuated, both amongst students and teachers. Whilst there is some requirement for teachers to develop a 'sociological awareness' within their students, the extent to which this gets at what many consider to be the core of sociology, or what Young might term powerful knowledge, that of developing a sociological imagination. There was little mention of the development of this kind of 'eye' by the teachers, perhaps partly as they did not see this as the main goal of their role (if at all). This is not least because of the problematic nature of quantifying and examining the extent to which one holds this, in the style of assessment used in A level qualifications. Perhaps even more than some other A level subjects, Sociology concerns the learning of content over all else.

7.2.3 The low status of Sociology

Not only do quantitative methods sit in a marginalised position, in an element of the course which remains distinctly abstract and removed from practise, this occurs in a subject which is marginalised through its low status within the A

level hierarchy. Many factors contribute to the low status of sociology, both as embodiments of and contributing to the maintenance of that position, many of which have been discussed throughout this thesis. These include the lack of expertise of teachers of Sociology, the tendency for those enrolled on the course to be the 'weaker' students, and the direct utility of the A level for progression into HE. The hierarchy itself has been differently described and reasoned by various authors but the position of newer and less quantitative subjects, such as sociology, are always positioned lower than the traditionally high-status mathematics and natural sciences. Within this context, one cannot help but to consider the role that research methods play. Those subjects which utilise quantitative methods are generally seen as sitting higher up the hierarchy than those which utilise qualitative means of enquiry, with the former conceptualised, at least at this level, as more 'academic' than the latter.

Before turning to the role that an increasing engagement with quantitative methods might have in raising the status of the subject, it is worth considering the notion of specialisation and its relation to subject hierarchy. There have been claims that the British education system encourages much earlier specialisation of its students than elsewhere. Indeed, students are encouraged to start specialising through their GCSE choices onwards. It is beyond the remit of this thesis to consider the implications of such specialisation practices, but one cannot help to notice that the same specialism pathways that exist for some subjects do not exist for sociology. Just as students need not have studied it before going on to study it at university level, teachers need not have a grounding in the discipline to train and teach it to these very same students.

Furthermore, something of a 'specialism ceiling' exists whereby teachers do not have the option to specialise in their training to the same extent as teachers of other subjects. To an extent this reflects differing types of knowledge structure, and the different types of language acquisition, that different disciplines hold. Descriptively, disciplines such as those in the natural sciences and mathematics require a certain level of basic language in order to study them, with further knowledge acquisition building upon that learnt prior. On the surface, sociology has a structure similar to that in humanities, with apparently little specialised language. Sociology, in these terms, may be considered little more than content, which is the impression of the tack taken with the A level subject. Operating within a culture of education driven by exam specifications and performance, where teachers are often positioned as 'skilled technicians' or 'competent craftsperson', most A levels are driven by content. However, few seem to embody this position so fully than those, such as sociology, which are often taught to novices by those who have little to no grounding in the discipline. That this is accepted and appears not to be positioned as problematic both reflects and reinforces the status of the subject.

The notion that raising the quantitative content of Sociology would raise its status as a subject appears to be relatively widely accepted but there is a danger of playing into the 'false binary' presented earlier in this chapter and thesis. As has been hinted at, that quantitative methods in sociology 'sound' like quantitative methods in the natural sciences and mathematics may necessarily misunderstand the nature of quantitative methods in the

discipline. There are arguments proffered by those who wish to reconceptualise and make explicit the interpretative nature of quantitative methods within the social sciences as distinct from the positivist nature found in other disciplines (e.g. Babones, 2016). It is this distinction between positivism and interpretivism which divides the discipline and is the basis for the 'false binary' referred to throughout the interviews with the teachers. Gorard (2006) argues that embracing this interpretative nature and presenting quantitative methods as 'subjective' rather than 'objective' will go some way to bridging this division. This raises two points. The first is a question as to whether the teachers interviewed appreciated this as the basis as the 'false binary' or whether it was considered to be such because of sociologists' actual practise. The second point raised by this is with relation to the Q-step programme's activities towards increasing capacity in terms of quantitative researchers. As documented in Chapter 1, there appear to be two approaches to meeting this target, one which looks to training typical sociology students quantitative methods as distinct from mathematical procedure (presumably embracing the interpretative quantitative method approach), and the other which looks to train traditionally science-based students social science (which suggests a positivist approach to quantitative methods).

7.3 Addressing the research questions

7.3.1 How are quantitative methods positioned in the A level Sociology curriculum, as it is set out in the written documentation?

The position of quantitative methods in the written documentation informing and surrounding the A level Sociology curriculum are detailed in Chapter 4. Various written documentation, from the centrally set subject and qualification specifications set out by the Department of Education and Ofqual, respectively, to the exam specifications and scripts set by the awarding organisations and accompanying text books and revision guides, were examined and analysed. This analysis of the content, prescriptiveness of that content, and the assessment practices held therein, revealed marginalisation of quantitative methods in the written curriculum. Whilst some variation between awarding organisation examination practices was noted, the overarching impression given by the written documentation is that quantitative methods follow a positivist approach to knowing the social world and are predominately the tools of official modes of inquiry. They are positioned as problematic, sites for critique unlike and less suited for use in sociological inquiry than qualitative methods. The lack of research method analysis skills necessary in the A level, where research methods are learnt about rather than engaged in, further positions quantitative methods as something distinct and separate from the concerns of sociology.

7.3.2 How do teachers' understandings of the position of quantitative methods both in the written curriculum and the discipline influence their pedagogy?

Influences on teachers' pedagogy come from a range of sources. Chapter 5 dealt with this in the most detail presenting a swimming pool analogy to try and describe the complex interactions that understandings of what it means to teach the subject, the approach taken to teaching and learning, their conceptualisations of their role, and the disciplinary knowledge being developed have in how they all relate to one another. There was a range and variety of understandings, akin to that found in the discipline. Although in the minority, there were some teachers who saw quantitative methods as being crucial to sociology and the study of society. Whilst these teachers did talk about presenting their students with additional quantitative activities not typically found in the A level Sociology classroom, nearly all commented on how their pedagogy was limited by the prescriptive nature of the curriculum. This was commented upon in Chapter 4, where the lack of a coursework requirement is seen as limiting opportunity for teachers to allow students to engage in the practice of sociological research, thereby limiting the learning opportunity that such activities afford. The instrumental nature of students further compounds this, meaning that teachers cannot embark on teaching activities that are not seen to be directly addressing an element of the written curriculum. For some teachers, their understanding of the discipline is informed by the A level, with quantitative research methods positioned as they are set out therein. For others, disciplinary knowledge is separate from this

and may or may not affect their teaching practices. Many of the teachers spoke of the 'false dichotomy' presented by the written curriculum in terms of the quantitative and qualitative divide, with the resulting pedagogy instrumental in nature, focussing on getting students to pass their exams despite any discrepancy highlighted.

7.3.3 What are A level Sociology completers' attitudes towards quantitative methods and how do they perceive the relative difficulty of these elements of the curriculum?

Predominately addressed in chapter 6, A level Sociology completers were shown to fall into one of two camps: those that appeared to favour the analytic, which included some quantitative elements, and those who appeared to favour the theoretical and epistemologically driven elements. Further exploration of student attitudes towards quantitative methods, partly necessary due to the marginalisation and limited content of these within the curriculum, were investigated using established and new scales of measurement. Attitudes towards quantitative methods showed a similar pattern and structure to those found for research methods more generally, with a three-part temporal structure of academic self-concept evident. The analysis showed that, contrary to what might be expected, the most common attitude pattern was one which held quantitative research methods to be both useful, enjoyable and accessible (in that the students demonstrated relatively high levels of self-efficacy). As with the complementary analysis, there were divisions between students' attitudes. Notably, the second most common

pattern was one which demonstrated low self-efficacy, low interest and enjoyment, and low levels of perceived usefulness.

7.3.4 Is the ontological breadth and epistemological variety evident in the discipline reflected in the A level curriculum, both written and practiced?

To an extent, this question can only be partially answered. The marginalisation of research methods in the curriculum means that opportunities to witness the curriculum in practice were so sparse as to make observation a potentially fruitless (in this regard) pursuit. Notions of ontological breadth (or at least permissiveness) did become apparent as early as recruitment, where Sociology teachers were more receptive to participation in research with unfamiliar methods than were Psychology teachers. Whilst there is recognition of some breadth prevalent in the written curriculum, that curriculum is dated. This is in terms of content (for example, there is no mention of interdisciplinary work and little of the uses and analysis of Big Data) as well as the positioning of the content that is included. The teachers recognised the traditional distinction between quantitative and qualitative methods positioned as denoting positivism and interpretivism in the curriculum, claiming a 'false dichotomy'. However, the breadth identified in the teachers themselves tended to prioritise one over the other, occasionally on these very grounds.

7.4 Implications, suggestions and limitations

This thesis provides an account of an original and comprehensive study of the Sociology A level. Whilst there has been some research attention paid to the

quantitative element of the Sociology A level, this is the first study to take a qualitative approach to the written curriculum. As a whole, the thesis makes four distinctive contributions to knowledge.

Firstly, the study offers insight with regard to a process of marginalisation of quantitative methods in A level sociology. The analysis here takes account of the modality and prescriptiveness of the language used in relation to quantitative methods, along with the marks available in the examinations.

Secondly, the study sets out a specific and novel design and application of Q-methodology, allowing the perceptions about the curriculum of multiple stakeholders to be systematically analysed, separately and comparatively. Whilst there are instances of Q-methodology being used in educational research, these tend to occur in health professional education within the HE arena, rather than mainstream, secondary education. They also tend to be narrower in focus.

Thirdly, the thesis also offers a novel conceptualisation of teachers' understandings of the relationship between their role, the curriculum, the discipline, and notions of powerful knowledge. This conceptualisation, drawn as a pool (Figure 18: 'Swimming pool'), offers a visualisation of how these elements interact, along with how the demands of the high-stakes performativity culture influences the focus of these teachers' efforts. Ultimately, the high-stakes culture leads to an instrumentality amongst both teachers and students, with the relationship between all actors of the curriculum appearing to exacerbate this. It is not unreasonable to infer that

the relationships visualised in the swimming pool analogy, as well as the documented instrumentality of teachers and students, extends beyond the Sociology A level. As such, the novel conceptualisation offered may be useful in considering these elements in other A level, and even GCSE, subjects. The performativity culture, and resulting instrumentality, offers an avenue for change in the knowledge and skills A level students acquire through their studies. This is discussed in the following subsection with particular reference to quantitative methods and alongside the fourth major contributions that this thesis makes, namely an understanding of the influence and position the substantive A level plays in, and implications for, recruitment to quantitative sociology.

7.4.1 Implications of this study

To understand the implications of this study it is worth returning to the context in which it sits. The Q-Step programme aims to stimulate a 'step-change' in quantitative methods within the social sciences. The current research adds to the context and discussion surrounding this initiative (and other efforts similar to it) through its examination of the substantive A level curriculum, an area little referred to in the existing literature. Whilst the Q-Step programme is concerned with undergraduate education it is important to understand what happens earlier in students' educational careers. For many, the A level is a point of first contact with the discipline and many of those who choose to study it will go on to pursue Sociology (or another social science) in their university careers. How the tools of the discipline, i.e. the research methods, are positioned at A level matters as it will go on to shape how students perceive

the discipline as well as their own suitability to study it at a higher level. If the A level is too far removed from the discipline, in that it paints an inaccurate picture of what future study in the field might entail, then this becomes problematic. Admittedly, many of the newly badged Q-step courses require optional modules (or indeed whole separate programmes of study) in order to develop the advanced skills being advocated. MacInnes (2018) comments on the basic understanding that is needed before students can break 'the barrier' (as he calls it) which limits students in their development of quantitative knowledge. If one of the purposes of Q-Step is improvement in the basic quantitative skills of all social science graduates, a step towards this goal would be inclusion of these in the A level curriculum(s) where they are currently lacking.¹⁰⁶

This research has shown that A level students are fundamentally instrumental in their approach. This means that, whilst they may not be considered the strongest students, if content is rewarded in the examinations, it will be engaged with. There is evidence both here and elsewhere that it is possible to encourage students in the learning and development of quantitative methods. To a similar extent, teachers are themselves instrumental in their teaching of the A level content; if there are marks to be had, elements will be taught, in spite of any reservations that teachers may hold based on their own understanding of the discipline. Which again means that changes to the

¹⁰⁶ Although the focus of the current research has been the Sociology curriculum, the marginalization of quantitative methods can be seen across other social science A levels. For example, Politics, which was the second most targeted discipline across the Q-Step Centres.

written curriculum could induce change in the skills of those students who take this A level. At the same time, Sociology A level suffers from a lack of subject experts and is often taught by those who have a sparse (if any) knowledge of the discipline beyond that which they may or may not have received in teacher training and that learnt in practice. This has implications for any move away from the A level as content delivery and towards the development of powerful knowledge. Part of this would involve a reconsideration of assessment practices as a 'sociological imagination' may prove tricky to assess in summative exam-based assessment.

This research has presented a model of student engagement and has shown that whilst some students may be reluctant to engage through low self-efficacy, affect or perceived usefulness, there is opportunity to enhance engagement through these underlying factors (affect, usefulness, and self-efficacy). As has been identified in MacInnes' recent review of the teaching activities of the Q-Step programme, practise is key to the development of quantitative methods. This is not least because it taps into the self-efficacy of the aforementioned structure. Whilst not all those enrolled on the course may have low self-efficacy, practice not only allows for mastery experiences to be engaged in but also consolidates learning. To the extent that research methods are not practised in the A level, it fails to invite students into the discipline in the way that Young would have it. Neither does it prepare students for the kind of work expected of them in HE, both specifically to the subject but also more generally in terms of non-examination assessments. Furthermore, the instrumental nature of students as they come out of the A

level system and the model of student attitude implies that, positioned in the right way at undergraduate level, students may well readily engage with quantitative methods if presented as engaging, useful and possible.

7.4.2 Limitations and suggestions for further research

As has been referred to elsewhere, this research relied upon investigations of perceptions, attitudes and reported practice to inform understandings of the 'curriculum as practised'. Along with other reservations about conducting observations, the marginalisation of the quantitative methods content made the potential for targeted observation tricky. Furthermore, by recruiting teachers and students separately it made direct comparison between teacher and student attitudes impossible. How teachers' attitudes towards subject areas, and mathematics particularly, influence student attitudes has been investigated elsewhere. However, investigation of the role that teacher disciplinary knowledge and position plays in terms of developing an increased awareness and tendency towards the use of quantitative methods in the social sciences would further enhance this field.

The research is further limited in the omission of gender from the analysis. There is a wealth of research establishing the fact that males are more likely to pursue a mathematics and science educational pathway (especially 'harder' science subjects such as physics), whilst females are more likely to pursue one based in the social science and humanities or art; both internationally (e.g. Charles & Bradley, 2009) and with relation to A levels (e.g. Francis, 2000; as

well as can be seen in JCQ data on entry trends¹⁰⁷). How the potential and intended proliferation of quantitative social science, and particularly the reconfiguration of sociology as a more obvious site for quantitative research may affect the existing gender (in)balance remains to be seen. Part of the reason that gender was not explored further in this research is partly because of the lack of a substantial male sample (at 14%). Also touching upon student choice, students' social class was not overtly studied in this investigation. The analysis did show how different types of institutions had the potential to differently limit their students with their A level offer, with Sociology more likely to be taken by students attending larger, state colleges and 6th forms and less likely to be taken by students at smaller, elite institutions with higher average attainment. How both of these areas (gender and social class) interact with student choices and affect their engagement with quantitative methods warrants further investigation. This may be particularly relevant if the quantitative methods that are pursued in the quantitative step-change are those which pursue a positivist approach to quantitative analysis with mathematical procedure prominent, which has traditionally marginalised some groups, over a more interpretative approach concerned with meaning making.

7.5 Concluding remarks

The A level clearly needs updating if it is to reflect the discipline as it currently is. Despite a recent period of reform, the specifications for the qualifications

¹⁰⁷ <https://www.jcq.org.uk/examination-results/a-levels>

have remained fundamentally the same with the perpetuation of the traditional divisions between quantitative and qualitative methods. A potential implication of the activities of the Q-Step Centres is that this division will largely remain, albeit with a greater baseline skill in quantitative methods. It was noted in MacInnes' (2018) review of the teaching activities of the Centres that identification with the new badged degrees was important for success. This identification is one of quantitative social scientists, who are set apart from their peers. This division, which potentially perpetuates the siloing and fetishization of methods, will be compounded if the basis from which these approaches stem is not addressed. Despite protestations to the otherwise, this necessarily is an epistemological issue when trying to effect change in a discipline such as sociology. Short of doing away altogether with the quantitative/qualitative distinction (as suggested by Allwood, 2012) it may be time to reconceptualise the issue, from one of merely upskilling the potential workforce towards one of an interpretative quantitative and qualitative social science.

Much of the concern from which the Q-Step programme stems comes not only from the broader perceived numeracy crisis and a desire to meet the demands of the market forces but from a wish to retain the skills which make social sciences relevant and necessary. Whilst 'upskilling' social science graduates so that they meet the requirements of the job market may be met with the actions of such initiatives, the evolving nature of social data is such that we may be required to move beyond the traditional modes and methods of inquiry. Savage, along with others (e.g. Savage & Burrows, 2007; Halford &

Savage, 2017), makes a compelling case for this with a call to expand the sociological toolkit so that we might properly engage with Big Data, and thus retain the mastery of social data and retain the disciplinary edge. The importance of this returns to the different approaches of the Q-Step centres and whether it is more worthwhile, in meeting these goals, to teach sociologists how to think quantitatively, or to teach quantitative experts how to think sociologically.

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Appendix I: Questionnaires

Appendix I.I: Teacher questionnaire

Research Methods in A level Sociology¹⁰⁸

Thank you very much for considering to take part in this research. The following questionnaire is intended to gather your experiences, perceptions and opinions of research methods in A level Sociology. The survey should take about 15 minutes to complete. Your responses will remain confidential and participation is completely voluntary.

At the end of the questionnaire you will be asked to provide an email address. This is for identification purposes should you wish to withdraw your data from the study at a later date. It will not be used for any other purpose, unless you indicate willingness to participate in a follow up interview later in the questionnaire. The interview is designed to provide opportunity to explore your experiences and opinions in more depth.

This research is intended to better understand teachers' perspectives of the nature of research methods within A level Sociology. It is funded by the ESRC with support by the WJEC. An anonymised version of the data will be offered to the UK Data Archive upon completion of the study.

Ethical approval for this research has been granted by Cardiff School of Social Sciences Research Ethics Committee.

If you have any questions about this study or the research project more broadly, please do not hesitate to contact me on the email address below.

Many thanks for your help with this research,

Jennifer Hampton

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¹⁰⁸ Throughout 'Sociology' replaced with 'Psychology' in the Psychology teacher survey.

Supervisors: David James (*JamesDR2@cf.ac.uk*) & Luke Sloan
(*SloanLS@cf.ac.uk*)

If you have any concerns regarding the conduct of this study, please contact
the Chair of the School Research Ethics Committee:

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Q-sort procedure

In the following screens you will be asked to sort a series of items in relation
to a question provided. The process follows a Q methodology framework and
the idea is to get a sense of your viewpoint on the topic.

Instructions will be given at each stage to guide you through the procedure.

Research methods and your students

Initial sort

1. *How do your students find these concepts?*

Please place each term in the column that best describes students
ability to grasp the concept.

[three columns: difficult, neutral, easy]

Main sort

2. *How do your students find these concepts?*

Please sort the terms in an order which best represents their ability to
grasp the concepts described.

The headings tell you how many terms are allowed in that
column. Don't worry too much about which specific column you put
the terms into. If the column you want to place a term into is full just

place it in the nearest available column. You can move the terms around until you are happy with the final result.

Q-sort grid¹⁰⁹

<i>Most Difficult</i>									<i>Easiest</i>
1	2	3	4	5	6	7	8	9	
(1)								(1)	
	(2)							(2)	
		(4)						(4)	
			(6)					(6)	
				(7)					

Post-sort questions

3. *Why do you think the item at the left is difficult for them?* [open response]
4. *Why do you think that the item at the right is easiest for them?* [open response]
5. *Are any important items missing from the list?* [yes/no]
 - a. *Please list them.* [open response]

Research methods and A level Sociology

Initial sort

6. *How important are these concepts to A level Sociology?*

Please place each term in the column that best describes the importance of the concept to the teaching and learning of A level Sociology.

¹⁰⁹ The Q-sort grid in the Psychology teacher questionnaire was similar to this but with three extra spaces for the three extra items included in the Psychology Q-set (see following Appendix).

[three columns: unimportant, neutral, important]

Main sort

7. *How important are these concepts to A level Sociology?*

Please sort the terms in an order which best represents their ability to grasp the concepts described.

The headings tell you how many terms are allowed in that column. Don't worry too much about which specific column you put the terms into. If the column you want to place a term into is full just place it in the nearest available column. You can move the terms around until you are happy with the final result.

Q-sort grid

Most Unimportant

Most Important

1 2 3 4 5 6 7 8 9

(1)								(1)
	(2)						(2)	
		(4)				(4)		
			(6)		(6)			
				(7)				

Post-sort questions

- 8. *Why do you think the item at the left is the most unimportant?* [open response]
- 9. *Why do you think that the item at the right is the most important?*
[open response]
- 10. *Are any important items missing from the list?* [yes/no]
 - a. *Please list them.* [open response]

Research methods and the discipline of sociology

Initial sort

11. *How relevant are these concepts to Sociology as a discipline?*

Please place each term in the column that best describes the relevancy of that concept to your understanding of Sociology as a discipline.

[three columns: irrelevant, neutral, relevant]

Main sort

12. *How relevant are these concepts to Sociology as a discipline?*

Please sort the terms in an order which best represents their ability to grasp the concepts described.

The headings tell you how many terms are allowed in that column. Don't worry too much about which specific column you put the terms into. If the column you want to place a term into is full just place it in the nearest available column. You can move the terms around until you are happy with the final result.

Q-sort grid

<i>Most Irrelevant</i>									<i>Most Relevant</i>	
1	2	3	4	5	6	7	8	9		
(1)								(1)		
	(2)						(2)			
		(4)				(4)				
			(6)		(6)					
				(7)						

Post-sort questions

13. *Why do you think the item at the left is the most irrelevant?* [open response]

14. Why do you think that the item at the right is the most relevant?

[open response]

15. Are any important items missing from the list? [yes/no]

a. Please list them. [open response]

Nature of research methods

16. Thinking about research methods in sociology, please rate the following statements along the scale provided.

	Qualitati ve	Somewh at Qualitati ve	Mixe d	Somewha t Quantitati ve	Quantitati ve	Don 't know
<i>Fundamentally, Sociology is...</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>The impression given by the syllabus is that Sociology is...</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>Personally, I am drawn to the...</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

About you

17. What is the main subject that you teach? [open response]

18. How many years have you been teaching Sociology? [open response]

19. *Are you a member of the BSA¹¹⁰? [yes/no]*
20. *Are you a member of any subject specific teaching groups? [yes/no]*
- a. If yes, please list. [open response]*
21. *What is your age? [open response]*
22. *What is your sex? [male/female/rather no say]*
23. *Would you consider participating in a follow up interview? [yes/no]*
- a. If yes, please provide your best contact details. [open response]*

Thank you

Thank you for taking the time to complete this research!

If you have kindly indicated that you are willing to participate in this research further, I will be contacting you shortly on the contact details provided.

If you have any comments, queries or feedback please contact me on
HamptonJM1@cardiff.ac.uk

¹¹⁰ 'BSA' is replaced with 'BPS' in the Psychology teacher questionnaire.

Research methods in A level Sociology¹¹¹

Thank you very much for considering to take part in this research. The following questionnaire is intended to gather your experiences, perceptions and opinions of research methods in A level Sociology. The survey should take about 15 minutes to complete. Your responses will remain confidential and participation is completely voluntary.

At the end of the questionnaire you will be asked to provide an email address. This is for identification purposes should you wish to withdraw you data from the study at a later date. It will not be used for any other purpose, unless you indicate willingness to participate in a follow up interview later in the questionnaire. The interview is designed to provide opportunity to explore your experiences and opinions in more depth.

This research is intended to better understand students' perspectives of the nature of research methods within A level Sociology. It is funded by the ESRC with support by the WJEC. An anonymised version of the data will be offered to the UK Data Archive upon completion of the study.

Ethical approval for this research has been granted by Cardiff School of Social Sciences Research Ethics Committee.

If you have any questions about this study or the research project more broadly, please do not hesitate to contact me on the email address below.

Many thanks for your help with this research,

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¹¹¹ Throughout 'Sociology' replaced with 'Psychology' in the Psychology student questionnaire.

If you have any concerns regarding the conduct of this study, please contact the Chair of the School Research Ethics Committee:

Professor Adam Hedgecoe,
School of Social Sciences,
Cardiff University,
Glamorgan Building,
Cardiff. CF10 3WT
Tel: +44 (0)29 2087 0027

Q-sort procedure

In the following screens you will be asked to sort a series of items in relation to a question provided. The process follows a Q methodology framework and the idea is to get a sense of your viewpoint on the topic.

Instructions will be given at each stage to guide you through the procedure.

Initial sort

1. *How did you find the following elements of your A level Sociology course?*

Please place each term in the column that best describes your opinion of the concept.

[difficult, neutral, easy]

Main sort

2. *How did you find the following elements of your A level Sociology course?*

Please sort the terms in an order which best represents your opinion of them.

The headings tell you how many terms are allowed in that column. Don't worry too much about which specific column you put the terms into. If the column you want to place a term into is full just place it in the nearest available column. You can move the terms around until you are happy with the final result.

Q-sort grid¹¹²

<i>Most Disagree</i>						<i>Most Agree</i>		
1	2	3	4	5	6	7	8	9
(1)								(1)
	(2)							(2)
		(4)						(4)
			(6)					(6)
				(7)				

Post-sort questions

3. *What do you think the item at the left was the most difficult?* [open response]
4. *Why do you think the item at the right was easiest?* [open response]
5. *Are any important items missing from this list?* [yes/no]
 - a. *If yes, please list them?* [open response]

Attitudes towards research

6. The following statements refer to some aspects of sociological research.

Please answer all of the questions by selecting the position along the scale that best represents your position, where 1 = 'strongly disagree' and 7 = 'strongly agree'

1 2 3 4 5 6 7

¹¹² The Q-sort grid in the Psychology teacher questionnaire was similar to this but with three extra spaces for the three extra items included in the Psychology Q-set (see following Appendix).

- i. *Research-orientated thinking plays an important role in my daily life.*
- ii. *Research should be indispensable in my professional training.*
- iii. *I am interested in research.*
- iv. *I am inclined to study the details of research.*
- v. *I feel insecure concerning the analysis of research data.* REVERSED¹¹³
- vi. *Research is interesting.*
- vii. *Research makes me anxious.* REVERSED
- viii. *Research is very valuable.*
- ix. *I enjoy research.*
- x. *Research is a complex subject.* REVERSED
- xi. *Research is stressful.* REVERSED
- xii. *The skills I have acquired in research will be helpful to me in the future.*
- xiii. *Knowledge from research is as useful as writing.*
- xiv. *Research thinking does not apply to my personal life.* REVERSED

¹¹³ 'REVERSED' did not appear in the questionnaire but denotes items which were reverse coded for analysis.

- xv. *I use research in my daily life.*
- xvi. *I make many mistakes in research.* REVERSED
- xvii. *Most students benefit from research.*
- xviii. *Research is difficult.* REVERSED
- xix. *I like research.*
- xx. *I love research.*
- xxi. *Research makes me nervous.* REVERSED
- xxii. *Research should be taught to all students.*
- xxiii. *I will employ research approaches in my profession.*
- xxiv. *Research is useful for my career.*
- xxv. *Research scares me.* REVERSED
- xxvi. *Research is connected to my field of study.*
- xxvii. *I have trouble with arithmetic.* REVERSED
- xxviii. *Research is complicated.* REVERSED
- xxix. *I find it difficult to understand the concepts of research.* REVERSED

- xxx. *Research is useful to every professional.*
- xxxi. *Research is irrelevant to my life. REVERSED*

Perceptions of quantitative methods

7. The following statements focus more specifically on the quantitative elements of research.

Please answer all of the questions by selecting the position along the scale that best represents your position, where 1 = 'strongly disagree' and 7 = 'strongly agree'.

- | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| i. <i>Quantitative methods topics are boring.</i> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| ii. <i>Quantitative methods topics make me feel uncomfortable and distressed.</i> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| iii. <i>Quantitative methods topics are a necessary chore.</i> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| iv. <i>Quantitative methods topics are easy to understand.</i> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| v. <i>Performing well in quantitative methods topics is important to being considered a good student.</i> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| vi. <i>Performing well in quantitative methods</i> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- topics is important to please myself.*
- vii. *Quantitative methods topics are fundamental part of learning about Sociology.*
- viii. *Performing well in quantitative methods topics will be important to be able to prepare myself for my intended degree specialisation.*
- ix. *Performing well in quantitative methods topics will be important to obtain the job that I want.*
- x. *Quantitative methods topics are enjoyable.*
- xi. *Quantitative methods topics are interesting.*
- xii. *Quantitative methods topics are where I generally feel safe.*
- xiii. *Quantitative methods topics seem difficult to me, no matter how much I study.*
- xiv. *Quantitative methods topics are confusing.*
- xv. *In terms of my professional future, quantitative*

methods topics are important.

xvi. *Performing well in quantitative methods topics was important to receiving a good A level result.* ○ ○ ○ ○ ○ ○ ○

xvii. *Quantitative methods topics are challenging.* ○ ○ ○ ○ ○ ○ ○

xviii. *Quantitative methods topics make me feel at ease.* ○ ○ ○ ○ ○ ○ ○

8. *How good do you think your knowledge of quantitative methods is, in terms of sociology? [good/medium/poor]*

Nature of research in sociology

9. Thinking about research methods more broadly within sociology, please rate the following statements along the scale provided.

	<i>Somewh at</i>		<i>Somewha t</i>		<i>Don 't kno w</i>	
	<i>Qualitati ve</i>	<i>Qualitati ve</i>	<i>Mixe d</i>	<i>Quantitati ve</i>	<i>Quantitati ve</i>	<i>kno w</i>
<i>Fundamenta lly, Sociology is...</i>	○	○	○	○	○	○
<i>The impression given by the syllabus is</i>	○	○	○	○	○	○

that

Sociology

is...

Personally, I

am drawn to

the...

Your academic career

10. *What subject are you currently studying?* [open response]
11. *At which university?* [open response]
12. *What year did you take your A level exams?* [open response]
13. *What subjects did you take at A level?* [open response]
14. *Where did you study your A levels?* [FE college/6th form college/school
6th form/other]
15. *Which exam board did you get your Sociology A level from?*
[AQA/WJEC/Edexcel]

About you

16. *What is your age?* [open response]
17. *What is your sex?* [male/female/rather not say]
18. *Would you consider participating in a follow up interview?* [yes/no]
 - a. *If yes, please provide contact details.* [open response]

Thank you

Thank you for taking the time to complete this research!

If you have kindly indicated that you are willing to participate in this research further, I will be contacting you shortly on the contact details provided.

If you have any comments, queries or feedback please contact me on
HamptonJM1@cardiff.ac.uk

Appendix I.III: Q-sort items

Sociology Q-sort items

1. Trends
2. Interviews
3. Data
4. Official statistics
5. Objectivity
6. Positivism
7. Experiments
8. Qualitative
9. Research design
10. Documents
11. Quantitative
12. Observations
13. Secondary data
14. Interpretivism
15. Questionnaires
16. Patterns
17. Subjectivity
18. Case study
19. Interpretation of data
20. Longitudinal studies
21. Triangulation
22. Ethics
23. Theoretical understandings
24. Reflexivity
25. Pluralism

26. Realism
27. Sampling
28. Feminism
29. Validity
30. Access
31. Survey
32. Primary data
33. Reliability

Psychology Q-sort items

1. Sampling
2. Opportunity sample
3. Levels of measurement
4. Dependent variables
5. Ethics
6. Case studies
7. Validity
8. Mode
9. Variable
10. Observation
11. Random sample
12. Mann-Whitney
13. Scattergrams
14. Hypotheses
15. Qualitative research methods
16. Correlation
17. Quantitative research methods
18. Chi-squared

19. Field experiments
20. Laboratory experiments
21. Spearman's
22. Mean
23. Reliability
24. Median
25. Content analysis
26. Range
27. Wilcoxon
28. Central tendency
29. Interviews
30. Self-report
31. Questionnaires
32. Independent groups
33. Inferential analysis
34. Matched pairs
35. Bar charts
36. Repeated measures

Appendix II: Worked factor analysis example

Attitudes Toward Research Scale

The student questionnaires both included the Attitudes Toward Research (ATR) scale (Papanastasiou, 2005). This instrument was utilised to understand students' attitudes to research broadly, rather than quantitative methods specifically. Student attitudes towards quantitative methods were measured separately and subsequently using the Perceptions of Quantitative Methods (PQM) scale, detailed in the following section. The ATR scale was developed and standardised with a group of undergraduate Education students who were all enrolled on a compulsory research methods module as part of their Education degree course. The original ATR scale was constructed by Papanastasiou (2005) using undergraduate Education students who were enrolled on a compulsory research methodology course. The exploratory factor analysis was conducted using principal factors analysis with an orthogonal (varimax) rotation, suggesting a 5-factor structure to the ATR scale. This structure was confirmed by Morgenshtern, Freymond, Agyapong and Greeson (2011), albeit with some rearrangement of which items fell into which factor, using graduate social work students (although details of the analysis were not given). However, a thorough confirmatory factor analysis conducted by Walker (2010) considered model-fit indices of a 1-factor solution, 3-factor solution, and the original 5-factor solution, and found a reduced scale with a 3-factor solution (with oblique rotation and extracted using maximum likelihood estimation) was the best fit for their data. Walker's sample differed yet again, collecting data from graduates studying within the College of Education enrolled on 17 different majors. The discrepancies found in factor structure may relate to these differences in sample characteristics.

The sample under investigation in this research differed from those used in the studies detailed above, in that the respondents were all undergraduate students being asked to comment on their experiences of pre-tertiary, rather than undergraduate education. For this reason, an exploratory factor analysis was conducted to better understand and validate the factor

structure of the scale used. The sample was separated into two subsamples in order to do this, based on subject. This is not arbitrary but rather a conceptual issue; the assumption that the Sociology and Psychology students are homogenous when comes to the underlying structure of their attitudes may not stand. Indeed, the subsamples are asked to respond to the indicators in terms of the discipline in question and so should be separated for the purposes of analysis (Hair, Black, Babin & Anderson, 2010). Further, such separation will allow any differences between the two subsamples to be made apparent. Subsequent to identifying the factor structure, factor scores can be calculated that describe the samples attitudes in a succinct and comprehensive manner.

Exploratory factor analysis.

Participants. For the purposes of the exploratory factor analysis the smaller Sociology student data set was used¹¹⁴. As will be discussed, the remaining student data (i.e. those responding to the Psychology survey) was used to confirm the factor structure identified.

Data screening. Although normality is only of concern in factor analysis to the extent that non-normality can affect observed correlations (Hair *et al.*, 2010), univariate normality was checked through boxplots, histograms, mean, standard deviation, skewness and kurtosis. Table 7 details the indicators' descriptive statistics. Whilst histograms suggested that some indicators may be non-normally distributed, skewness and kurtosis revealed that none of the items were suffering from severe non-normality in this regard (using Kline's, 1998, cut-off of |3.00| and |8.00| respectively). Examination of box-plots for univariate outliers discovered several (five) indicators with at least one outlier (2: 'research should be indispensable in my future training'; 10: 'research is a complex subject'; 13: 'the skills I have acquired in research will be helpful to me in the future'; 35: 'I find it difficult to understand the concepts of research'; 37: 'research is irrelevant to my life'). To retain an adequate sample size these outliers were not excluded from the analysis.

¹¹⁴ See descriptives write up for details.

Visual inspection of the correlation matrix revealed a sufficient amount of inter-correlation between indicators, with a healthy number of correlations over 0.30 (Hair *et al.*, 2010). Further, Bartlett's test of sphericity, which considers the whole matrix, was statistically significant ($\chi^2 (351) = 1498.935, p < 0.001$) and was therefore suitable for factor analysis. Additionally, the Kaiser-Meyer-Olkin statistic to assess sampling adequacy was above the recommended cut-off of 0.60, at 0.79. Whilst a degree of multicollinearity is a pre-requisite to factor analysis, indicators that correlate too highly are problematic (as their unique contribution can be clouded) and should be avoided (Field, 2001). Extreme multicollinearity was not present as all analysis of tolerance levels were > 0.10 and variance inflation factors < 10 (Belsley, Kuh & Welsch, 1980).

Table 7 - Descriptive statistics of individual indicators.

Item	Mean	SD	Skewness	Kurtosis
Research-orientated thinking plays an important role in my daily life.	3.66	1.61	0.08	-0.80
Research should be indispensable in my professional training.	4.40	1.50	-0.08	-0.50
I am interested in research.	4.73	1.58	-0.50	-0.59
I am inclined to study the details of research procedures carefully.	4.42	1.49	-0.05	-0.81
I feel insecure concerning the analysis of research data.	4.05	1.55	-0.14	-0.48
REVERSED ¹¹⁵				
Research is interesting.	5.03	1.40	-0.62	0.30

¹¹⁵ It is common practice to reverse the scores of negatively worded items so that all indicators express positive, rather than negative, attitudes, as has been done here.

Research makes me anxious.	4.26	1.70	-0.10	-1.07
REVERSED				
Research is very valuable.	5.98	1.17	-1.12	0.64
I enjoy research.	4.64	1.46	-0.33	-0.40
Research is a complex subject.	2.54	1.24	0.51	-0.27
REVERSED				
Research is stressful. REVERSED	3.01	1.51	0.49	-0.50
The skills I have acquired in research will be helpful to me in the future.	5.35	1.28	-0.87	0.71
Knowledge from research is as useful as writing.	5.16	1.40	-0.76	0.08
Research thinking does not apply to my personal life. REVERSED	4.32	1.62	-0.19	-0.70
I use research in my daily life.	3.48	1.46	0.39	-0.19
I make many mistakes in research.	4.03	1.28	-0.19	-0.30
REVERSED				
Most students benefit from research.	5.21	1.25	-0.57	0.02
Research is difficult. REVERSED	3.36	1.36	0.38	-0.41
I like research.	4.42	1.48	-0.30	-0.39
I love research.	3.39	1.61	0.32	-0.47
Research makes me nervous.	4.07	1.59	-0.20	-0.82
REVERSED				

Research should be taught to all students.	5.18	1.47	-0.60	-0.39
I will employ research approaches in my profession.	4.81	1.43	-0.34	-0.49
Research is useful for my career.	4.92	1.49	-0.30	-0.63
Research scares me. REVERSED	4.61	1.62	-0.35	-0.66
Research is connected to my field of study.	5.88	1.42	-1.38	1.19
I have trouble with arithmetic. REVERSED	4.14	1.74	-0.17	-0.96
Research is pleasant.	3.97	1.31	0.05	-0.22
Research is complicated. REVERSED	3.13	1.27	0.29	-0.33
I find it difficult to understand the concepts of research. REVERSED	4.50	1.36	-0.36	-0.55
Research is useful to every professional.	4.79	1.47	-0.22	-0.54
Research is irrelevant to my life. REVERSED	5.56	1.52	-1.21	1.07

Multivariate normality was checked through calculation and interpretation of Mahalanobis distance statistic and Mardia's kurtosis value. The Mahalanobis distance statistic is compared to the chi-squared distribution to assess which cases, if any, were to be considered outliers. For this data set, the largest Mahalanobis value equalled 69.57 with a probability of < 0.001 ¹¹⁶,

¹¹⁶ As opposed to 0.05, see Tabachnick & Fidell (2007, p. 74).

suggesting that this case should be removed from the analysis (S61). However, upon examination of Cook's distance, calculated to assess the influence of cases, it was found that all cases had an influence of < 0.20 . This is much smaller than the suggested cut-off of greater than 1 being an influential record and exhibiting leverage. Therefore, no cases were removed at this stage. However, the final test assessing multivariate normality, Mardia's test for kurtosis and skewness, indicated that multivariate normality was not present in this data set (both $p < 0.05$). This final result indicates that factor should be extracted using the principal factor estimator which holds no distributional assumptions.

Factor selection. The initial statistics produced by the first exploratory factor analysis were used to attempt to determine how many factors should be extracted. The initial eigenvalues for the data, using the Kaiser-Guttman rule (Kaiser, 1960) of retaining eigenvalues > 1.0 , suggested a 9 factor solution. The reasoning behind the Kaiser-Guttman rule is sound, i.e. an eigenvalue less than one indicating that the factor is explaining less variance than that of an indicator (Brown, 2015), and is often used in EFA to determine appropriate numbers of factors. However, the technique was originally proposed for principal components analysis, not EFA. As Courtney (2013) and Fabrigar, Wegner, MacCallum and Strahan (1999) point out, there are several concerns over using this technique with EFA, including its tendency to overestimate factors (e.g. Ruscio & Roche, 2012). A commonly employed alternative, sometimes used alongside the Kaiser-Guttman rule, is Cattell's (1966) scree test. This test is somewhat subjective as it involves eye-balling a plot of eigenvalue by factor number to determine where the 'cliff' turns into 'scree'. By identifying this 'elbow' in the plot, where the steep slope of the graph (the cliff) levels out (the scree), one can determine how many factors need to be retained. Again this test is based on eigenvalues but, despite its subjective nature (especially when there is no clear break in the plot), this method may be more appropriate than the Kaiser-Guttman rule as it has been shown to suffer from less variability over simulations (Zwick & Velicer, 1986). Figure 24 depicts the scree plot for the current data. Although common practice to

retain only those factors above this elbow, in this case three factors, Cattell's original criterion sought to retain the first factor on the scree also (Hayton, Allen & Scarpello, 2004). This would suggest retention of four factors.

Partly due to the large discrepancy between the estimates provided by the two techniques detailed above, along with the limitations posed by both of them, a third technique was used to determine the number of factors to be used. Horn's (1965) parallel analysis (see also Humphreys & Montanelli, 1975) utilises the scree plot generated from initial values, as in Figure 24, and compares this to a plot of eigenvalues generated from a random data set. This attempts to account for the fact that the data used to generate the initial values are generated from a sample rather than drawn from the population (Horn's main criticism of Kaiser's rule). Essentially the parallel analysis takes into account the proportion of variance resulting from sampling error and can be considered a 'sample alternative' to the Kaiser-Guttman rule (Courtney, 2013, p.4; Garrido, Abad & Ponsoda, 2012, p.2). Following the procedures laid out in Hayton, Allen and Scarpello (2004), a series of random data sets were created ($n = 50$). Although the recommended number of random data sets generated for parallel analysis can vary up to as many as 1000 (e.g. O'Connor, 2009), there is no standard procedure for this (Hayton *et al.*, 2004). Horn recommends that the sample be reasonably large, and Crawford and Koopman (1979) found no significant differences between results with 1 randomly generated data set and 100. Using the average of eigenvalues of the random data sets, a new criteria for factor retention was set, whereby those initial eigenvalues from the actual data set which exceeded the corresponding eigenvalues from the random data set were retained. This suggested that the appropriate number of factors to retain was five (as Papanastasiou and Morgenshtern would suggest).

Factor rotation. Rotations of the final solution (i.e. the final number of factors has been decided) are often applied to better describe and discriminate between the factors identified. Although rotations do effect the extent to which indicators load on each factor, by maximising loadings close to 1.0 and minimizing those close to 0.0 (see Comrey and Lee, 1992), they do not affect

the fit of the model (Brown, 2015). Essentially a rotation is a transformation that allows this to happen by rotating the axes, the factors, upon which the indicators are plotted. These rotations can be done in such a way as to allow the factors to correlate with one another (oblique rotation) or constrain the factors to be uncorrelated (orthogonal rotation). Commonly orthogonal rotation is employed. Partly this is due to the impression that this results in factors that are easier to interpret as they represent simple correlations between the indicators and factors, rather than being influenced by the covariance of factors in the underlying structure (as is the case with oblique rotation; Brown, 2015). However, this makes little sense substantively, if the underlying structure is likely to be measuring some overarching concept then it makes much more sense to allow factors to correlate with one another. As the purpose of this scale and the indicators themselves are all related to research methods broadly, it makes substantive sense that the factors, whilst measuring separate and distinct aspects of this concept, are related to one another. Taking these concerns into consideration, an oblique rotation was used.

Assessing quality of alternative solutions. The goal of rotation, and factor analysis more broadly, is to be left with a solution which describes the structure of the data whilst being easily interpretable, which has a 'simple structure' (Thurstone, 1947). This is partly informed by mathematical considerations, with each factor having a reasonable number of indicators (i.e. over 3) which load highly onto it and no others, as well as substantive ones; that is that the factors must make sense. Having decided on five factors to be extracted in the first instance (as detailed above), a factor solution was sought using principal factor extraction and oblique rotation. All 32 variables used in Papanastasiou's original tool were used in the first instance. Those items that had no salient loadings (those $< \pm 0.3$) on any of the factors were removed from analysis and the solution run again. In addition to considerations of the salience of factor loadings, how well the factors were defined was also taken into consideration. Those factors that only had a few indicators (three or less) whose primary loadings were associated with them, were considered poorly

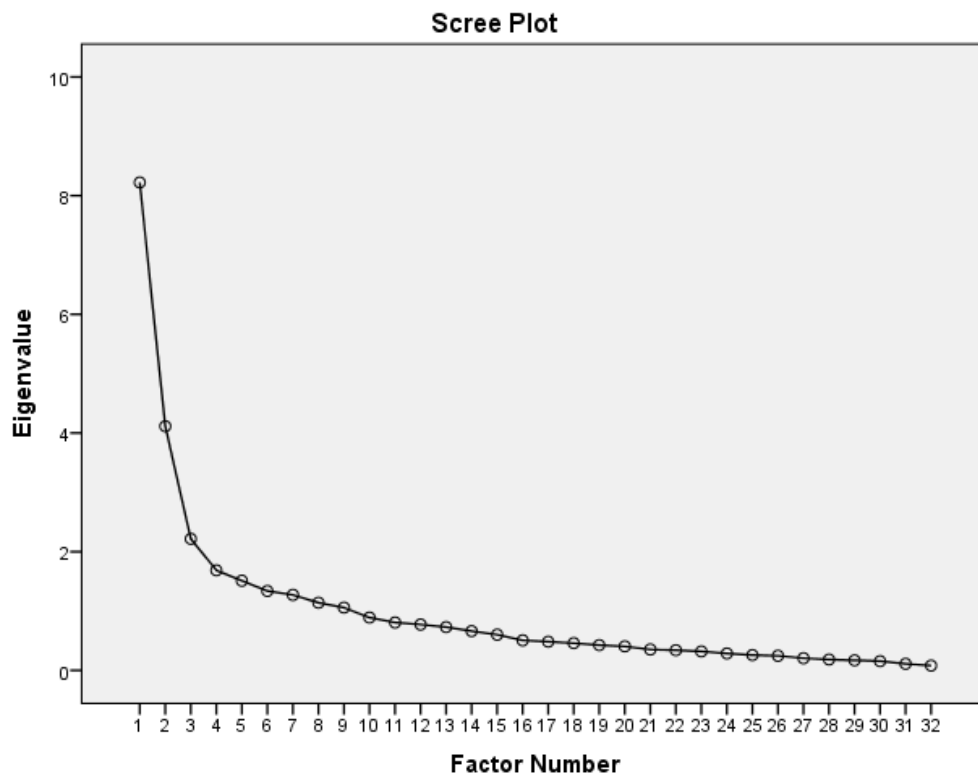


Figure 23 - Scree plot of eigenvalues of the unreduced correlation matrix.

defined. In the first instance, 5-factor solution with 32 variables, there were two variables that had no salient loadings on any of the factors ('I have trouble with arithmetic' [reversed], and 'Research is irrelevant to my life' [reversed]). In addition to this some of the indicators had salient loadings on more than one factor, 'cross-loadings'. The two indicators that had no salient loadings were removed and the 5-factor solution rerun. This second solution revealed a factor that had only had three indicators that had salient loadings. These indicators appeared to be related to one another ('Research-orientated thinking plays an important role in my daily life', 'Research thinking does not apply to my personal life' [reversed], and 'I use research in my daily life'). This suggests a factor that represents a facet of attitude to do with the personal use, rather than professional, of research. Although Hair and colleagues (2010) suggest using a three-indicator rule, whereby factors that have at least three indicators are retained, Brown considers factors that have three items should be considered poorly defined and so eliminated. A brief examination of this

solution run with the Psychology student data set, revealed that this was not replicated. The fifth factor was therefore dropped from further iterations.

Running the analysis with four factors retained the personal usefulness factor as described above but did merge other factors so that the number of indicators with cross-loadings was significantly decreased (from 3 to 1). A 3-factor solution was therefore sought, which resulted in the three variables in question having no salient loadings on any of the three factors. Finally, a three-factor solution was fitted, with these indicators relating to personal usefulness removed, which resulted in three salient, distinct but related factors to be uncovered. These factors all had indicators with salient, and generally reasonably high (max loading: .926), loadings, none of which had cross-loadings (see Table 8). Interestingly, this solution of three factors was suggested by Cattell's scree test.

Three-factor solution: Sociology students. The resulting optimal three-factor solution is detailed in Table 8. It is important to note that Table 8 is representative of the pattern matrix returned for the three-factor solution. The pattern matrix is distinct from the structure matrix (a multiplication of the pattern matrix and factor correlation matrix) which reflects the inter-correlation between the factors as well as the relationship between the indicator and factor. The loadings are somewhat similar to those coefficients returned by multiple regression (Brown, 2015). They indicate the relationship between the indicators and a given factor, whilst controlling for the influence of the other factors sought. In practical terms, squaring the loading returns the percentage of the indicators variance explained by the factor (Hair *et al.*, 2010). Therefore, the higher the loading, the more important that indicator is to interpreting the factor. Whilst loadings greater than ± 0.30 were retained for interpretation of the structure, loadings greater than ± 0.50 were utilised for substantive interpretation of the factors (these indicators deemed to be 'practically significant' (Hair *et al.*, 2010, p. 115). In terms of statistical significance, the required level varies as a function of sample size, number indicators used, number of factors extracted, and necessitates an inflation of the standard errors estimated. Whilst statistical significance is not the primary

concern for this aspect of analysis, given the details of this particular case, a loading of around ± 0.50 should suffice (using the rule of thumb outlined in Hair *et al.*, p.115).

With reference to Table 8, the italicised and bolded factor loadings indicate the factor to which the indicator is most strongly associated. Those loadings which are also highlighted were considered substantively significant ($> \pm 0.50$) and used in the interpretation of the corresponding factor. The solution appears to be simple (Thurstone, 1947) in that all indicators load onto only one factor and all factors appear to be well defined, with several indicators, and are substantively coherent. Factor 1, appears to represent positive attitudes to research with indicators such as 'I enjoy research' and 'I like research' both having very high loadings on this factor. Additionally, these positive attitudes extend to include 'research is interesting' which may account for some of why these students also find it enjoyable. Factor 2 represents the usefulness of research in terms of students' professional/educational, rather than personal, lives. Indicators with high loadings on this factor include 'I will employ research approaches in my profession', 'research is useful for my career', and 'research is connected to my field of study'. Lastly, Factor 3 appears to represent negative attitudes with indicators such as 'research scares me', 'research makes me anxious' and 'research is stressful' having high loadings on this factor. Although it may be tempting to label this last factor as 'negative attitudes toward research' (or something similar), it appears that this factor may be more concerned with students negative attitudes towards their own understandings and competency. In other words, this factor may represent students' self-efficacy (Bandura, 1997) in terms of research methods within their discipline.

In terms of factor inter-correlation, whilst it makes sense that the factors be allowed to correlate with one another, too high a correlation suggests some potential redundancy of the factors extracted. Brown suggests factor inter-correlations of 0.80/0.85 to be too high, implying 'poor discriminant validity and suggest that a more parsimonious solution could be obtained' (p.32). Factor analysis involves a careful balance between attempts

to achieve parsimony and substantive considerations of best interpreting the underlying structure of the data. For this solution, the factor correlation matrix revealed medium to weak correlations between the three factors. The strongest relationship was between, Factor 1 and Factor 2 at 0.547. This makes substantive sense, those with an appreciation of the professional usefulness of research (Factor 2) are also more likely to have a positive attitude to research (Factor 1). The correlations between the remaining factors were weak; Factor3 had weak correlations with both factors 1 (0.141) and 2 (-0.042). Again, this makes substantive sense, if Factor 3 is indeed about self-efficacy, rather than research methods per se, this Factor represents something fairly removed from issues of the topic itself. Although, one might expect some interplay between these, that positive attitudes towards research would be associated with high self-efficacy concerning these aspects, though clearly this has not been the case found here.

Table 8 - Three factor solution EFA (Sociology students)

Indicator	Factor 1	Factor 2	Factor 3
Research should be indispensable in my professional training.	0.224	0.391	0.040
I am interested in research.	0.713	0.106	0.097
I am inclined to study the details of research procedures carefully.	0.501	0.284	-0.091
I feel insecure concerning the analysis of research data. REVERSED	0.182	-0.022	0.420
Research is interesting.	0.804	-0.055	-0.054
Research makes me anxious. REVERSED	-0.100	0.235	0.698
Research is very valuable.	0.386	0.185	-0.138
I enjoy research.	0.926	-0.113	0.014

Research is a complex subject. REVERSED	-0.117	-0.375	0.452
Research is stressful. REVERSED	0.248	-0.148	0.639
The skills I have acquired in research will be helpful to me in the future.	0.130	0.609	0.088
Knowledge from research is as useful as writing.	0.190	0.491	-0.078
I make many mistakes in research. REVERSED	0.095	-0.080	0.465
Most students benefit from research.	0.270	0.482	-0.113
Research is difficult. REVERSED	-0.130	-0.009	0.592
I like research.	0.875	-0.052	0.078
I love research.	0.834	-0.108	0.047
Research makes me nervous. REVERSED	-0.012	0.095	0.670
Research should be taught to all students.	0.012	0.589	0.082
I will employ research approaches in my profession.	-0.079	0.810	0.012
Research is useful for my career.	-0.082	0.708	0.062
Research scares me. REVERSED	0.103	0.149	0.767
Research is connected to my field of study.	-0.245	0.613	0.133
Research is pleasant.	0.690	0.041	0.076
Research is complicated. REVERSED	-0.159	-0.082	0.521
I find it difficult to understand the concepts of research. REVERSED	0.013	0.094	0.368

Research is useful to every professional.	0.060	0.606	-0.046
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Confirming the factor structure. The exploratory factor analysis, detailed above, resulted in a simple structure that was readily interpretable and makes substantive sense. In order to determine whether the factor structure observed in the Sociology student data is representative of an underlying structure that exists amongst pre-tertiary/undergraduate students more broadly, the factor analysis was extended by running a tentative confirmatory factor analysis (CFA) model with the Psychology student data (essentially an EFA model in the CFA framework). The main difference between CFA and EFA, which is pertinent to this analysis, is the extraction method used. Whilst principal factors were used as the extraction method for the prior analysis, the extraction method used in this tentative confirmation is maximum likelihood. One of the advantages of using maximum likelihood is that it allows for goodness of fit measures to be calculated. Further, rather than an assessment of alternative solutions, a three factor-solution was specified at the outset. However, the relationship between these factors and the indicators included in the analysis (the same indicators as used in the final solution found in the EFA) was not specified. Rather than full blown CFA then, it is better to consider the analysis of the Psychology student data set as tentative; it is an EFA using a 'confirmatory perspective' (Hair *et al.*, 2010, p.120). Unlike with full CFA, this confirmation does not (and cannot) assess any comparative measures of fit of nested models. Rather it attempts to assess the stability of factor structure between the two samples.

Running the three-factor solution using maximum likelihood extraction, and oblique rotation, returned the three-factor solution detailed in Table 9. Although the factors have been extracted in a different order and the loadings are slightly different from those found in the exploratory data analysis of the Sociology student sample, generally the solution was a very good replication. The pattern of indicator loadings is the same as the EFA solution, i.e. the same group of indicators have a common factor, with reasonably

similar strengths of relationships observed. As previously, loadings that are italicised and bolded indicated to which factor the corresponding indicator is most strongly associated. Those which are over 0.50 are considered to be substantively important in assessing what that factor represents. As can be seen from Table 9, the same substantive conclusions can be drawn as from the Sociology student data set, three constructs are present: ‘negative attitudes’ (Factor 1), ‘positive attitudes toward research’ (Factor 2), ‘professional usefulness of research’ (Factor 3).

Table 9 – ATR factor loadings Psychology student data

Indicator	Factor 1	Factor 2	Factor 3
Research should be indispensable in my professional training.	-0.097	0.268	0.399
I am interested in research.	-0.027	0.825	0.017
I am inclined to study the details of research procedures carefully.	-0.019	0.512	0.193
I feel insecure concerning the analysis of research data. REVERSED	0.652	0.002	0.046
Research is interesting.	-0.121	0.889	-0.091
Research makes me anxious. REVERSED	0.811	0.103	0.016
Research is very valuable.	-0.128	0.393	0.217
I enjoy research.	0.088	0.871	-0.051
Research is a complex subject. REVERSED	0.496	-0.268	-0.153
Research is stressful. REVERSED	0.765	-0.093	0.003
The skills I have acquired in research will be helpful to me in the future.	-0.024	0.127	0.658

Knowledge from research is as useful as writing.	0.003	0.162	0.493
I make many mistakes in research.	0.438	0.111	-0.058
REVERSED			
Most students benefit from research.	-0.023	0.061	0.458
Research is difficult. REVERSED	0.719	-0.71	-0.103
I like research.	0.058	0.846	0.001
I love research.	0.105	0.781	0.030
Research makes me nervous. REVERSED	0.808	0.058	0.101
Research should be taught to all students.	-0.107	-0.036	0.675
I will employ research approaches in my profession.	0.063	-0.092	0.943
Research is useful for my career.	0.049	-0.108	0.903
Research scares me. REVERSED	0.810	0.077	0.055
Research is connected to my field of study.	-0.031	0.128	0.489
Research is pleasant.	0.174	0.615	0.087
Research is complicated. REVERSED	0.537	-0.041	-0.140
I find it difficult to understand the concepts of research. REVERSED	0.416	0.078	0.091
Research is useful to every professional.	0.080	-0.061	0.682

As mentioned earlier, maximum likelihood extraction gives the advantage of providing goodness of fit measures, or rather lack of fit measures. This is done by comparing the covariance matrix of the actual data to that of a matrix estimated by the model (Hair *et al.*, 2010). There are several indices that can be used to assess a model's fit, although in this case the chi-squared

goodness of fit statistic is used. This revealed a statistically significant result ($\chi^2(273) = 772.47, p = < 0.05$), which suggests that the model is not a good fit for the data.¹¹⁷ However, the data was found to be multivariate non-normal to which the chi-squared test is particularly sensitive and so not much concern was given to this.

Factor scores and summated scales. Originally, the attitudes toward research scale was employed so as to calculate factor scores for each respondent. As factors are representative of underlying constructs, factor scores can be interpreted as the extent of a respondents' affiliation with that factor. Coarse scores are commonly calculated, which Brown (2015, p.37) refers to as 'unweighted composites' of item scores for particular subscale. For example, the score for given by a respondent for each indicator associated with Factor 1 could be summed (Comrey & Lee, 1992), or a simple average of these taken (DiStefano, Zhu & Mîndrilă, 2009), to provide a coarse score representative of that particular respondents' positive attitudes toward research. However, this method can result in scores that misrepresent the underlying factors (e.g. Grice, 2001). An alternative approach, is to calculate refined scores for each respondent. Whilst there are many ways in which these can be calculated (e.g. Bartlett, 1937; Harman, 1976; McDonald, 1981), the least squares regression method (Thurstone, 1935) was the original inception. This technique compensates for instances where differing scales of measurement have been used (Field, 2009). Although there are some issues with this approach, these estimates generally suffer from less bias than coarse factor scores (Grice, 2001), without eliminating all bias (DiStefano, Zhu & Mîndrilă, 2009).¹¹⁸ They also take into consideration the whole underlying structure. Rather than pay attention to the relationship between an indicator and the main factor on which it loads (as in coarse scores), the technique also accounts for the relationship the indicators and all of the factors within the

¹¹⁷ H_0 = model fits the data.

¹¹⁸ These issues including the instance where factors which have high indeterminacy can have scores which vary too widely. The level of indeterminacy can be assessed via validity coefficients, univocality, and correlational accuracy (Grice; Brown p. 37). These techniques are not readily available in SPSS.

structure, as well as the strength of these relationships. Whilst refined scores are generally preferred if uncorrelated scores are not necessary (Tabachnick and Fidell, 2007), interpretation of these coefficients can be tricky.¹¹⁹ Indeed, when it comes to exploratory work of the kind practiced here, Tabachnick and Fidell (2001) note that a coarse score approach is adequate. Further, when the concern is one of generalisability, Hair *et al.* recommend the use of coarse scores, or as they refer to them 'summed scales' (p. 122).

Given that this analysis is fairly exploratory in nature, with the concern on dimension reduction so that the underlying attitudes and associations between them might be better understood, coarse scores for each factor were calculated for each student based on their responses to the corresponding indicators. An advantage of using *all* the relevant indicators to summarise the students' positions, with regards to an underlying factor, is that the influence of measurement error of individual indicators is minimised (Hair *et al.*). Additionally, they lend parsimony to any further multivariate analysis. For the time being however, the scores shall be used to describe the data and patterns therein. Average scores, rather than summed, were calculated, retaining the original 1-7 scale of agreement. This was deemed most appropriate given the varying number of indicators present for each factor (and possible to compare between factors, and between scales, given the same measurement scale was used throughout). Some consideration may be given, with this technique, to the loadings of the indicators to the factor to which is designated. This could be done with a cut-off put in place, e.g. the substantively significant cut-off of 0.5, or by applying a weight based on the factor loadings themselves. Whilst the advantages of this are readily apparent (as they take account of the extent to which the indicator represents the underlying factor), this technique can be affected by the extraction and rotation procedures (DiStefano, Zhu & Mîndrilă, 2009). As was seen in the preceding analysis, though the factor structure remained the same across the sub-samples, the loadings did indeed vary.

¹¹⁹ In instances where uncorrelated scores are necessary, the Anderson-Rubin method, a modification of the Bartlett method, can be used.

Thus, these techniques were deemed to be no better than taking simple averages of the sub-scale indicators.

Reliability analysis. An aspect when creating scales of any kind is the extent to which the scale demonstrates internal consistency. This is assessed on an individual item level, by inspection of item-total and inter-item correlations, and on a sub-scale level via Cronbach's alpha. As the factor structure (if not loadings) had been directly replicated in the tentative confirmatory analysis, these statistics were calculated using the whole sample. As a general rule of thumb, item-total correlations are thought to be adequate when they exceed 0.50, and inter-item correlations when they exceed 0.30 (Hair *et al.*, 2010; Robinson, Shaver & Wrightsman, 1991). Cronbach's alpha levels of 0.70 – 0.80 are sought (Kline, 1999; Cronbach, 1951). Part of the reason that sub-scales were used for the reliability analysis, rather than the whole scale, is because this value operates as a function of the number of indicators on the scale (Cortina, 1993; Cronbach, 1951). Inspection of these suggested that the 'negative attitudes' scale particularly was less than adequately reliable. Whilst the Cronbach's alpha statistic was acceptable at 0.45, the individual item reliability was poor for some indicators. In particular, 'research is complicated' and 'I find it difficult to understand the concepts of research' showed very poor correlations with other indicators (0.031-0.256 and 0.031-3.96, respectively) and had item total-item correlation well below the recommended 0.50 (0.218 and 0.78 respectively). Removing these indicators, still left 'research is a complex subject' as a less than adequate item on the sub-scale. Thus, this was also removed, with the remaining indicators accepted as adequate in terms of reliability for the scale. It is worth noting at this juncture that the recommended cut-offs were not strictly adhered to. All final scales had one indicator that did not quite reach the item-total correlation target of 0.50 and had at least one inter-item correlation at < 0.30 . However, all Cronbach's alpha statistics exceeded 0.85 and the final scales made substantive sense. Table 10 shows the final factor structure using data from the whole sample. As can be seen, the structure is again replicated; a three factor is apparent with the same substantive interpretation as previously. The

three factors represent positive attitudes/affect (Factor 1), professional usefulness (Factor 2), and negative attitudes/self-efficacy (Factor 3).

Table 10 - Factor pattern matrix for final solution using whole sample data.

		Factor 1	Factor 2	Factor 3
<u>Factor 1: Positive attitudes (affect)</u>				
ATR3	I am interested in research.	0.785	0.054	-0.005
ATR4	I am inclined to study the details of research procedures carefully.	0.530	0.218	-0.061
ATR6	Research is interesting.	0.855	- 0.067	-0.091
ATR8	Research is very valuable.	0.405	0.198	-0.135
ATR9	I enjoy research.	0.883	- 0.065	0.067
ATR23	I like research.	0.848	- 0.007	0.057
ATR24	I love research.	0.792	0.011	0.076
ATR31	Research is pleasant.	0.653	0.051	0.124
<u>Factor 2: Professional usefulness</u>				
ATR2	Research should be indispensable in my professional training.	0.294	0.363	-0.078
ATR13	The skills I have acquired in research will be helpful to me in the future.	0.148	0.624	-0.005
ATR14	Knowledge from research is as useful as writing.	0.189	0.464	-0.019
ATR19	Most students benefit from research.	0.155	0.427	-0.058
ATR26	Research should be taught to all students.	0.007	0.620	-0.079
ATR27	I will employ research approaches in my profession.	-0.083	0.920	0.032
ATR28	Research is useful for my career.	-0.100	0.877	0.027
ATR30	Research is connected to my field of study.	-0.010	0.537	0.031
ATR25	Research is useful to every professional.	-0.005	0.636	0.036
<u>Factor 3: Negative attitudes (self-efficacy)</u>				

ATR5	I feel insecure concerning the analysis of research data. REVERSED	0.052	- 0.031	0.568
ATR7	Research makes me anxious. REVERSED	-0.027	0.075	0.834
ATR11	Research is stressful. REVERSED	0.002	- 0.058	0.682
ATR18	I make many mistakes in research. REVERSED	0.101	- 0.080	0.433
ATR21	Research is difficult. REVERSED	-0.095	- 0.098	0.637
ATR25	Research makes me nervous. REVERSED	-0.017	0.082	0.820
ATR29	Research scares me. REVERSED	0.040	0.039	0.831
Cronbach's alpha:		0.91	0.87	0.87

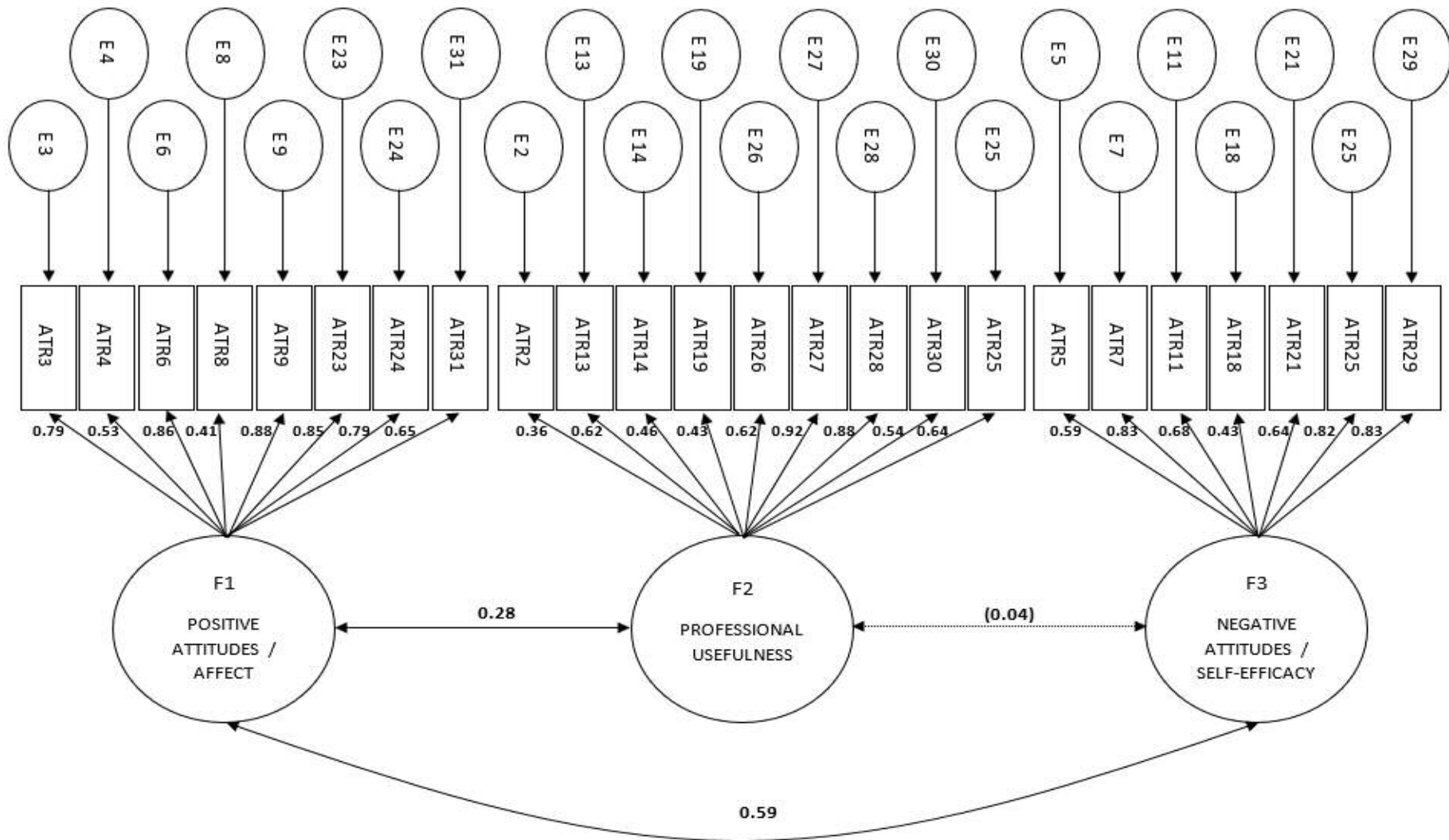


Figure 24: Path diagram of ATR factor structure.

Appendix III: Interview schedule

Project:

- The nature of quantitative methods and analysis in A level social sciences.

Purpose of (this part of) the research:

- To better understand how teachers of A level Sociology position research methods, and in particular quantitative elements, in their understanding of the A level.

Instructions/introductions:

- Thank you for your participation. I believe your input will be valuable to this research and in helping to better understand the relationships between teachers, students and the curriculum and discipline of Sociology, as well as the place of research methods in the A level.
- I need to make you aware that I am recording this interview but assure you that your responses will remain confidential.
- As this research is funded by the ESRC, the results of the study will be available as part of my larger thesis.

Follow three stages but aim for 5 main questions (with sub questions, ~ 30 mins):

- Establish interviewee background in area of research
- Details of present experience relevant to topic
- Meaning the current experience has for them

Closure:

- Thank you for answering all of my questions so fully, your responses were enlightening and will be very useful for my research.
- I'd like to reiterate that all responses will be kept confidential going forward.
- If you have any queries or would like to retract any of your responses, please do say now or get back in touch with me – you will find my contact details on the bottom of the email I sent to you.

Interview questions:

1. Could you tell me a bit about your background? How did you come to teaching A level Sociology?
 - a. How long have you been teaching (this subject)?
 - b. Do you teach other subjects?
 - i. Links between?
 - ii. In your experience, are people more likely to teach multiple subjects if they teach a subject like Sociology as opposed to a STEM subject, say?
 - c. Would you describe yourself as a Sociologist?
 - i. Do you conduct research? Are you a member of a professional organisation?
 - ii. If not Sociology as main degree subject, how did you familiarise yourself with the discipline?
2. Some the respondents to the questionnaire made a clear distinction between the discipline of Sociology and Sociology A-level. How would you describe the relationship between the discipline and the syllabus?
 - a. Do you think the A level is an adequate representation of the discipline? Or is there a disconnect between your understanding of the discipline and what (and how) you have to teach in the A level?
 - i. If there is, how does this impact on your professional identity?

- b. How do you balance teaching a deep understanding of the subject with preparing students for their examinations?
 - i. Is this something that you pay particular attention to?
 - ii. Generally, do you think the focus is on an understanding of the discipline or making sure that students pass their exams?
- 3. There appears to be many ways of understanding Sociology as a discipline, as evidenced in my research and elsewhere.
 - a. To what extent do you think this might influence the way yourself and colleagues teach the A level?
 - b. Do you think students are aware of the differing perspectives that exist in the discipline?
 - i. What effect do you think this has?
- 4. What do you think the purpose of the A level is for the students that take it?
 - a. What is your typical student like?
 - i. What other subjects are they likely to take alongside Sociology?
 - b. What do you think motivates them to take Sociology?
 - i. Do they tend to go on to University?
 - ii. Would they be likely to study Sociology?
- 5. The rhetoric, in higher education particularly, is that students are reluctant to engage with research methods and particularly quantitative research methods. Do you recognise this to be the case with students that you teach?
 - a. What do you think lies behind this (reluctance/engagement)?
 - i. (Interestingly, students raised issues of internal motivating factors (e.g. interest and enjoyment) as a key part of engagement with research methods.)
 - b. One way to tackle this in HE has been to 'embed' research methods training in substantive topics, as is already done at A level. How useful do you think this approach is / is not?

- c. Are there any obstacles to teaching students research methods?
 - i. NB students raised resource issues (time, technology and how well versed teachers were)
 - d. How do you think this could be improved? Is there anything that could help this?
6. There has been some resistance to the quantitative 'push' in HE (elaborate if necessary) and I wondered if you could reflect upon this in terms of the A level / your understanding of the discipline?
- a. Some of the respondents to the survey talked about the 'standing' of the discipline and how more statistical analysis could improve this. Do you agree with this position?
7. Is there anything else that you would like to add?

Appendix IV: Correlation matrices (Sociology teachers Q-sort analyses)

Table 11: Sociology teachers' student Q-sort correlation matrix

	ST1	ST2	ST3	ST4	ST5	ST6	ST7	ST8	ST9	ST10	ST11	ST12	ST13	ST14	ST15	ST16	ST17	ST18	ST19	ST20		
ST1	1	.589**	.420*	.420*	.563**	.330	.214	.536**	.554**	.839**	.661**	.580**	.384*	.384*	.589**	.491**	.616**	.446**	.589**	.348*		
ST2		1	.375*	.330	.330	.518**	.125	.223	.286	.607**	.446**	.420*	.250	.348*	.446**	.545**	.473**	.402*	.339	.196		
ST3			1	.330	.420*	.107	.179	.223	.223	.509**	.268	.295	.420*	.223	.518**	.125	.196	0.000	.179	.304		
ST4				1	.179	.482**	.446**	.277	.313	.652**	.473**	.491**	.491**	.321	.455**	.277	.589**	.223	.375*	.643**		
ST5					1	.009	.196	.527**	.518**	.580**	.554**	.446**	.545**	.330	.384*	.393*	.482**	.429*	.429*	.375*		
ST6						1	.509**	.250	.223	.438*	.616**	.411*	.179	.429*	.491**	.205	.536**	.277	.223	.545**		
ST7							1	.393*	.125	.313	.491**	.366*	.384*	.080	.402*	.071	.330	.170	.393*	.634**		
ST8								1	.393*	.536**	.473**	.321	.366*	.250	.464**	.027	.455**	.313	.241	.500**		
ST9									1	.634**	.482**	.634**	.473**	.625**	.250	.464**	.429*	.741**	.366*	.250		
ST10										1	.625**	.670**	.571**	.455**	.563**	.473**	.634**	.429*	.518**	.464**		
ST11											1	.545**	.438*	.375*	.571**	.509**	.661**	.482*	.411*	.625**		
ST12												1	.402*	.536**	.429*	.438*	.500**	.679**	.509**	.357*		
ST13													1	.152	.286	.205	.259	.429*	.420*	.518**		
ST14														1	.393*	.250	.429*	.464**	.411*	.348*		
ST15															1	.161	.643**	.179	.241	.598**		
ST16																1	.393*	.536**	.446**	.018		
ST17																	1	.321	.330	.616**		
ST18																		1	.482**	.205		
ST19																				1	.268	
ST20																						1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Legend: weak moderate strong

Table 12: Sociology teachers' A level Q-sort correlation matrix

	ST1	ST2	ST3	ST4	ST5	ST6	ST7	ST8	ST9	ST10	ST11	ST12	ST13	ST14	ST15	ST16	ST17	ST18	ST19	ST20
ST1	1	.313	.348*	.438*	.098	-.089	.411*	-.080	-.027	.089	.214	.232	.375*	.402*	.009	.196	.196	.464**	.286	.357*
ST2		1	.339	.250	.295	.536**	.196	.116	.411*	.438*	.339	.616**	.518**	-.054	.196	.366*	.411*	.420*	.348*	.580**
ST3			1	.545**	-.241	.009	.214	.286	.411*	.223	.446**	.500**	.080	.071	.205	.277	.500**	.188	.482**	.482**
ST4				1	.054	.268	-.116	.188	.250	.330	.625**	.286	.071	.313	.509**	.375*	.330	.071	.438*	.214
ST5					1	.339	0.000	.241	-.080	.152	.125	-.009	.250	.170	.196	.071	-.045	.268	.027	-.071
ST6						1	-.098	.188	.241	.420*	.420*	.313	.357*	.063	.205	.348*	.330	.268	.152	.214
ST7							1	.045	.054	-.018	-.089	.321	.161	.054	.045	-.098	.098	.411*	-.018	.366*
ST8								1	.464**	.259	.429*	.357*	-.080	.009	.357*	-.027	.223	.214	.339	.071
ST9									1	.357*	.464**	.571**	.268	.018	.188	.366*	.232	.036	.196	.268
ST10										1	.286	.286	.545**	.116	.241	.473**	.259	.286	.321	.509**
ST11											1	.429*	.179	.205	.438*	.545**	.491**	.196	.313	.018
ST12												1	.339	-.152	.063	.241	.455**	.295	.348*	.384*
ST13													1	.179	-.188	.563**	.286	.384*	.027	.518**
ST14														1	.143	.295	-.357*	.045	.027	-.045
ST15															1	0.000	.071	.027	.152	.054
ST16																1	.313	-.009	.080	.134
ST17																	1	.420*	.313	.357*
ST18																		1	.366*	.357*
ST19																			1	.500**
ST20																				1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Legend: weak moderate strong

Table 13: Sociology teachers' discipline Q-sort correlation matrix

	ST1	ST2	ST3	ST4	ST5	ST6	ST7	ST8	ST9	ST10	ST11	ST12	ST13	ST14	ST15	ST16	ST17	ST18	ST19	ST20
ST1	1	-.116	.152	.134	-.161	-.089	.348*	.286	.089	.054	.152	.116	-.205	.277	.170	-.339	-.214	.063	.071	-.143
ST2		1	.125	.188	.205	.375*	.205	.179	.420*	.009	.036	0.000	.500**	-.321	.071	.420*	.196	.143	-.018	.188
ST3			1	.446**	-.330	.125	-.214	.375*	.313	.027	.643**	.589**	-.071	-.259	.143	-.080	.161	.080	.375*	.411*
ST4				1	.223	.268	-.018	.321	.473**	.232	.446**	.348*	.384*	.036	.393*	.438*	.304	.196	.241	.357*
ST5					1	.455**	.125	0.000	.125	.411*	-.080	.071	.366*	.348*	.152	.518**	.196	.241	-.054	-.018
ST6						1	-.161	.420*	.366*	.295	.188	.259	.482**	.098	.080	.491**	.321	-.054	-.125	.125
ST7							1	-.223	-.071	.036	-.241	-.366*	.205	.304	0.000	-.080	-.098	.321	.143	-.107
ST8								1	.438*	-.188	.652**	.554**	.009	-.036	.321	.330	.143	-.018	.161	.348*
ST9									1	.063	.384*	.411*	.482**	-.080	.0045	.554**	.143	-.009	.098	.196
ST10										1	-.170	0.000	.143	.241	.009	-.036	.420*	.259	.009	-.018
ST11											1	.795**	-.161	-.089	.339	.286	.205	-.045	.330	.384*
ST12												1	-.188	-.134	.339	.196	.054	-.027	.268	.161
ST13													1	-.018	-.045	.598**	.080	-.071	-.250	.089
ST14														1	-.098	-.063	.116	.295	.143	-.268
ST15															1	.107	.125	.125	.080	.268
ST16																1	.357*	-.036	.098	.375*
ST17																	1	.545**	.411*	.563**
ST18																		1	.589**	.420*
ST19																			1	.446**
ST20																				1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Legend: weak moderate strong