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## Teaching quantitative research methods: the employability factor

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### Abstract:

Various initiatives have been launched to encourage sociology students studying in the UK to engage more with quantitative research methods (for example: Dale et al., 2008; Adney and Carey, 2009; Falkingham et al., 2009), however, their success has been limited.

Embedding quantitative methods in substantive sociology curricula has been suggested as one way to reduce students' anxieties about learning quantitative research methods (Williams et al., 2015). This approach has been employed at Cardiff University's School of Social

Sciences, where quantitative skills have been strategically incorporated into various aspects of a first year undergraduate substantive module. This paper will reflect on the experience of teaching on this module.

The paper will conclude that while the introduction of quantitative content into substantive modules indicates support for change, embedding alone cannot be viewed as a single solution to encouraging students to learn about or utilise quantitative research methods. Two possible reasons for this will be suggested. Firstly, it will be argued that the majority of students no longer pursue sociology at degree level in order to gain the skills to become a competent social researcher, but rather see sociology as a discipline that will equip them with transferable and desirable skills for many occupations. Consequently, engagement with quantitative research methods is not essential to students' strategic approach to learning as it was for previous generations who wished to understand how to study their social world. Secondly, it will be suggested that the deficit of quantitative methods in mainstream British sociology journals and the methodological preferences of practicing sociologists leads to speculation over the available staff who are capable of delivering an integrated curriculum with quantitative methods embedded in substantive modules.

## 1. Introduction

For some years there have been concerns in British sociology about a deficit of quantitative methods training (Bulmer, 1989; Williams et al., 2008; MacInnes, 2009). It has been argued that good quantitative reasoning skills will enable students to engage with a greater body of literature within their substantive field and also help them in their future employment. During the past decade, a number of initiatives have been introduced which are designed to encourage students to utilise quantitative methods and become more confident, critical consumers of social statistics.

In order to increase students' confidence with learning quantitative methods and their ability to utilise these methods independently, it has been suggested that students need to have more concrete examples of quantitative research in their substantive modules (Bulmer, 1989; Carey et al., 2009; Falkingham et al., 2009; Bullock, Meadows and Brunton-Smith, 2014; Buckley et al., 2015; Williams et al., 2015). This paper will reflect on the experience of teaching on a module at Cardiff University's School of Social Sciences, which had quantitative methods strategically embedded within it.

To begin, the paper will describe the current marginalised status of quantitative methods in British sociology and describe the demand for a more methodologically pluralistic discipline. In tracing the development of British sociology, it will be shown that the undergraduate curriculum has changed to meet the growing demands of the student body. This will be suggested as one possible factor contributing toward the deficit



of quantification in British sociology, especially at undergraduate level. Evidence derived from a broader research project which explores professional sociologists' views of their discipline will be used to argue that the motivations to study sociology at degree level are not aligned with the idea of becoming an academic social researcher. Secondly, it will be argued that the marginalisation of quantitative research methods throughout the history of the discipline has led to concerns over the available staff able to confidently deliver an integrated curriculum.

It is not intended here to favour the individual merits of either quantitative or qualitative research methods and indeed, the author recognises that this dichotomy can be unhelpful. Instead, the paper is informed by the notion of methodological pluralism (Payne, Williams and Chamberlain, 2004). It seeks to explore the extent to which sociology undergraduates can draw on a range of different research techniques in order to answer research questions at both the macro and micro levels.

## 2. The deficit of quantification in British sociology

Content analyses of mainstream British sociology journals demonstrates that quantitative research is becoming increasingly marginalised within the discipline (Payne, Williams and Chamberlain, 2004; MacInnes, Eichhorn and Whybrow, forthcoming). For example, Payne, Williams and Chamberlain (2004) found that of all papers published over a two year period from 1999 to 2000 in mainstream British sociology journals, just over 14 per cent utilised quantitative research methods compared to 40 per cent which employed qualitative research methods. MacInnes, Eichhorn and Whybrow (forthcoming) report that over a fifty year period from 1960 to 2010, the proportion of quantitative publications in mainstream British sociology journals decreased from 32 per cent to 17 per cent, while at the same time, the proportion of qualitative publications rose from 8 per cent to 43 per cent. The increasingly marginal position of quantitative research within the discipline has led to concerns about whether there are an adequate number of qualified people available to train undergraduate sociology students to be methodologically pluralistic (Bullock, Meadows and Brunton-Smith, 2014).

In a nationwide survey of sociology students (Williams et al., 2008), over 50 per cent of participants reported that they had not expected to have to do number work as part of their degree. Just over 20 per cent of students responded that they agreed that 'sociology students should not have to study statistics' and that 'statistics can detach you from your research topic'. The majority of respondents reported feeling anxious about learning statistics and almost 65 per cent stated that they would rather write an essay than analyse data.

Over the last decade a number of projects have been launched in the UK, with the aim of increasing social science students' confidence and enthusiasm for quantitative research. These have taken the form of curriculum innovations and researcher development initiatives. The former refer to interventions in the undergraduate curriculum aimed at ensuring that more examples of quantification are included in substantive modules, while the latter focus on exploring the use of additional workshops and summer/winter schools designed specifically to encourage final year undergraduate students to use quantitative methods in their dissertations.

These initiatives have led to a growing literature gathering students' views of learning quantitative research methods (for example; Dale et al., 2008; Adney and Carey, 2009; Falkingham et al., 2009). However, many of the projects have had limited success or longevity. For example, at Manchester University a series of quantitative research methods workshops and clinics were introduced to help support final year students who were completing their dissertations (Dale et al., 2008). Despite positive feedback on the workshops, it should be noted that the students were financially incentivised to participate and there was some reluctance among academic staff to create and adapt resources required for these workshops under limited time constraints. Similarly, while a number of students benefited from the quantitative methods vacation schools and drop-in clinics introduced at the University of Southampton, some students still reported lacking confidence with using quantitative methods independently (Falkingham et al., 2009).

In 2013, the Q-Step programme; a £19.5 million project aimed at training social science students in quantitative research methods was launched (Allebon, 2013; Nuffield Foundation, 2012). Cardiff University is among 15 universities that have been appointed as Q-Step centres. The Q-Step centres have been tasked with exploring different ways of encouraging students to engage with quantitative methods.

In following the development of British sociology, it is apparent that quantitative research methods have always been marginalised within the discipline (Burgess and Bulmer, 1981; Bulmer, 1985: Chapter 1; Payne et al.,



2004; Payne, 2014: Chapter 19; MacInnes, Eichhorn and Whybrow, forthcoming). Moreover, it seems that the position of quantitative research methods within sociology undergraduate curricula is becoming increasingly sidelined (Adney and Carey, 2009; Scott Jones and Goldring, 2015). With the expansion of higher education, financial cuts to social science research and the introduction of tuition fees in Britain, the aims of sociology undergraduate curricula have shifted to place increasing importance on student 'experience' and the acquisition of transferable skills for the workplace (Nind, Kilburn and Luff, 2015; Scott Jones and Goldring, 2015).

In order to demonstrate this, the next section of the paper will highlight key periods in the development of British sociology. It will also draw upon findings from a survey of professional sociologists, conducted as part of a wider research project. The survey was designed to explore the nature and purpose of British sociology and its ability to answer research questions effectively at both the macro and micro level. 1024 sociologists completed the online survey which was distributed in 2015 and 2016.

### 3. Expansion of Sociology

In its earliest days UK sociology was essentially limited to the London School of Economics (LSE) and the sociological work and teaching that took place there has had a major influence on the future direction and shaping of the discipline (Bulmer, 1985: Chapter 1; Husbands, 2014: Chapter 8; Payne, 2014: Chapter 19). The first people to hold chairs of sociology at the LSE; Leonard Trelawny Hobhouse, Edward Westermarck and Morris Ginsberg, were first and foremost philosophers. Reflecting on the narrow curriculum he and his peers in the first post-war sociology cohort received at LSE, Halsey (2004: Chapter 1) expresses his retrospective annoyance at, among other factors, being denied opportunities to explore and learn about quantitative methods of data collection. Such anecdotal evidence supports the notion that British sociology has never been characterised as a quantitative discipline (see additionally: Burgess and Bulmer, 1981; Bulmer, 1985: Chapter 1; Payne et al., 2004; Payne, 2014: Chapter 19; MacInnes, Eichhorn and Whybrow, forthcoming).

With the publication of the Robbins Report in 1963 came a major expansion in higher education, with university no longer being seen as a place exclusively for white upper class males but accessible to all (Halsey, 2004: Chapter 5). The increase in the number of students choosing to study sociology at university was particularly remarkable. Students believed that a sociology degree would help them understand and explore current day crises that characterised metropolitan Britain, as well as wider global issues such as the Vietnam War (Steinmetz, 2013). By the 1970s British sociology was increasingly engaged in research (Payne, 2014). However, sociologists rarely utilised quantitative research methods. The feminist movement in that period frequently expressed the view that only qualitative techniques could effectively tap into the lived experiences of marginalised groups (Oakley, 1998).

Prior to the expansion of the discipline, sociology academics were often recruited straight from undergraduate degrees or from different disciplines (Platt, 2012). With the growth in the discipline during the 1960s and 1970s, came a surplus of qualified university sociology researchers and lecturers. At the same time, Thatcher's Conservative Government came into power and social science disciplines faced large financial cuts (Posner, 2002; Eldridge, 2011; Holmwood, 2014: Chapter 26). Money for research positions in sociology was heavily reduced, reflecting the lack of value and or appreciation that the Conservative Government placed on the social science disciplines. This led to increasing levels of unemployment among sociology graduates. Hence, employability became a new significant factor shaping the design of the sociology curriculum.

British Sociological Association presidential addresses at the time acknowledged these increasing levels of unemployment and stressed the necessity for higher education providers to develop courses that equipped students with transferrable skills for various occupational settings (Albrow, 1986; Burgess, 1990). Burgess (1990) argued that the sociology undergraduate curriculum in the 1990s should go beyond equipping students with skills to be social scientists and should instead, provide training for a range of occupations. In order for the discipline to thrive, new appeals were made to attract not just students who were interested in learning how to study their social world but also students who wanted a degree that would lead to good employment prospects.

More recently, Adney and Carey (2009) argue that with the introduction of tuition fees and the consequent competition between institutions for students, social science departments are more conscious of needing to create a curriculum that attracts a broader spectrum of students than just those who are committed to



a discipline as an academic or research experience. This may sometimes be at the expense of more medium or long term benefits for their students. Indeed, Scott Jones and Goldring (2015) consider that the increased focus on student 'experience' since the late 1990s in UK universities has reinforced the marginal status afforded to quantitative methods in social science undergraduate curriculum.

Qualitative comments derived from an online survey of professional sociologists distributed in 2015/2016 as part of a wider project investigating sociologists' views of their discipline concur with this viewpoint. For example, discussing the experience of teaching undergraduate sociology students, two respondents went on to point out that;

'...the emphasis on [student] employability and targets has undermined the discipline.'

'The push to increase the percentage of graduates and pressure to have a degree (any degree) has meant that over the past 15 years, a growing proportion of students are admitted [to sociology degrees] without the necessary skills or commitment to do well in the subject.'

Thus, with the expansion of higher education in the UK and restrictions imposed by Government and funding bodies on sociology, it seems that there was a shift in the motivations of students who chose to pursue social science degrees and this in part has engendered a continuing lack of engagement with quantification among students (Nind, Kilburn and Luff, 2015; Scott Jones and Goldring, 2015).

## 4. Embedding

One approach designed to make quantitative research methods more accessible and more engaging for students is *embedding*. This is where quantitative material is strategically embedded in substantive modules. For example, including research papers that utilise quantitative research methods in required reading list, using examples of quantification in lectures, or asking students to perform simple analyses of their own or existing data.

Embedding activities enable students to have the opportunity to critically interpret statistical data and discuss findings, as well as other methodological issues (Scott Jones and Goldring, 2014; Buckley et al., 2015). Generic, stand-alone research methods modules cannot necessarily cater effectively for specific discipline needs, whereas embedding activities in other substantive modules provides valuable opportunities to reinforce learning and to demonstrate the utility of techniques acquired in research methods modules. This in turn, increases students' confidence with quantitative research methods alongside demonstrating the integral role of quantitative methods in different disciplines (Buckley et al., 2015).

A number of institutions have employed embedding as a technique to engage their students with quantitative research. The extent to which embedding projects have integrated substantive and quantitative methods teaching and learning has varied across different institutions. However, the rationale behind each project has been to increase students' confidence with quantitative methods in the hope that increased awareness of how quantitative research is used in their discipline will help to reduce negative attitudes toward quantitative methods, to enable more critical discussion about the use of quantification in their discipline and to reinforce research methods teaching.

For example, at the University of Surrey, Bullock, Meadows and Brunton-Smith (2014) used an online tool '*DiscoverQuants*' in order to help them to implement a more integrated first year undergraduate social science curriculum. Their resulting report argues that previous embedding interventions have presented undergraduates as a homogenous group and have failed to acknowledge the differing levels of pre-existing knowledge or confidence with quantitative techniques that students may have. '*DiscoverQuants*' was a tool designed to overcome these discrepancies with the use of online quizzes, revision notes, videos, worked examples, and datasets which acted to reinforce or extend students' learning. Materials posted on '*DiscoverQuants*' were used in substantive sociology lectures in order to demonstrate how quantitative research was important in students' degree programmes. As well as embedding examples of quantitative research in substantive modules, the project involved increasing discipline specific examples of quantitative research in research methods modules.

Despite the efforts of Bullock, Meadows and Brunton-Smith (2014), following their initiative, students still viewed substantive modules and quantitative methods as separate and distinct. The authors argue that students' lack of benefits derived from this extra learning was due in part to the limited number of lectures



in which they successfully managed to integrate quantification. They argue that crucially, substantive module assessments did not call for an understanding of quantitative methods and hence, the links between quantitative methods and substantive modules were not made explicit to students. In order for embedding to be successful in the undergraduate sociology curriculum, Bullock, Meadows and Brunton-Smith (2014:8) state that 'wider cultural changes' need to take place in the discipline.

Likewise, Buckley et al. (2015) describe a number of case studies of embedding put in place in both sociology and politics programmes at the University of Manchester. The various exercises designed, involved students working with existing datasets, as well as collecting their own data. Almost 70 per cent of the students who completed the course evaluation survey reported that quantitative data helped them to understand social theory better. However, the evaluation data for the project reveals that embedding may also have had a negative effect on some students, with over 13 per cent reporting that the embedded quantitative material distracted them from the main topic being taught. Further, one student disclosed that they had deliberately missed a seminar as they were unable to calculate a percentage and feared feeling inadequate. This leads to caution over whether embedding could actually increase students' anxieties around quantitative research or cause students to disengage from substantive modules which introduce quantification.

Similarly, somewhat contradictory findings on the success of embedding are reported by Williams et al. (2015). A quasi-experiment in two universities, in which quantitative methods were embedded into substantive sociology modules, looked at the differences in students' attitudes toward quantitative methods before and after the initiative and compared these results to those of a control group. The project compared the views of second year students toward learning quantitative methods when they had studied optional substantive modules that had been strategically embedded with quantitative material, with those students who had opted for alternative substantive modules. While the experimental group became less distrustful of statistics, data collected at the beginning and end of the project demonstrated an increase of 12.5 per cent of students in the experimental group agreeing with the statement; 'You don't need to use quantitative data in order to understand sociological phenomena' and an increase of 12.5 per cent of the students in the experimental group agreeing with the statement; 'I don't think social science students should have to study statistics' and finally an increase of 6.3 per cent of students in the experimental group agreeing with the statement; 'In my university work I would rather write an essay than use statistics'. These increases were greater for the experimental group than the control group.

For the three aforementioned statements, there was an increase of 8.8 per cent and 7.5 per cent respectively among the control group agreeing with the first two statements between time one and time two and a decrease of 8.7 per cent agreeing with the latter statement. Williams et al. (2015) suggest that the findings of their study could be the result of students at time one, prior to the initiative, not having a true awareness of their abilities and that following the intervention, the students in the experimental group were able to truly reflect on their abilities in quantitative research and attitudes toward it. The research was a 'one shot' experiment and as is often the case with single experiments, the results were equivocal. The authors consequently called for more long-term studies on the impacts of embedding in order to fully understand the potential of such initiatives.

The remaining sections of the paper show how embedding was employed in a first year substantive module, but goes on to argue that embedding techniques can only go some way in encouraging sociology students to engage with quantitative methods. In order to critically evaluate the success of embedding in the substantive module, the paper has been informed by both reflective practice and informal discussions with tutors for the module.

## 5. Case Study: sociology of education module

First year social science students at Cardiff University, study a compulsory 'Introduction to Social Research Methods' module as part of their degree programme. This module is generic for all degree pathways<sup>1</sup> offered in the School of Social Sciences at Cardiff University as opposed to being degree subject specific. In the School

<sup>1</sup> Degree pathways offered at Cardiff University's School of Social Sciences include; Criminology, Education, Social Policy, Sociology, Social Sciences, Human and Social Sciences and Social Analytics.



of Social Sciences all first year modules are taught via weekly two hour lectures and fortnightly seminars. Students are also given an extensive reading list for each module to help to support their learning.

As part of the Q-Step initiative, moves toward a more integrated undergraduate curriculum have been made in the School of Social Sciences at Cardiff University. For example, quantitative research methods have been strategically embedded in a first year module; *'Introduction to Education and Society'*. This module introduces students to the study of the sociology of education. Moves have been made to include more examples of quantification in lectures for this module and to increase the inclusion of required readings which engage with quantitative research. In addition, a seminar activity revolving around interpreting and critiquing quantitative data was also introduced. The conversational nature of seminars has meant that it is this aspect of the module where the integrated curriculum has been most apparent and prompted the greatest and highest level of engagement with quantitative research.

In the first semester of the *'Introduction to Education and Society'* module, students receive a series of lectures exploring the theme of educational inequalities. Lectures investigate how factors such as gender, social class and ethnicity limit certain groups' access to education and impacts on their final levels of attainment.

To accompany the lectures, students were given a number of suggested readings to consider in order to help them with their learning. These included quantitative materials, for example, graphs to demonstrate patterns and trends while others reported univariate statistics, such as groups most likely to attend university<sup>2</sup>.

A seminar was designed to accompany the group of lectures on educational inequalities. Prior to the seminar, students were asked to read a report on class inequalities in Key Stage 4 attainment (Mills, 2015). A list of questions were provided for them to reflect upon during their initial read. These questions formed the basis of the discussion in the seminar<sup>3</sup>.

From the outset of the seminar, it was clear that some of the students had not read the paper or reported 'giving up' on it after the first page. Consequently, the students were encouraged to spend five minutes reading the summary of the paper and looking at the graphs in pairs. Working this way, the crux of the paper seemed less daunting to identify. Each pair was asked to report back one interesting piece of information they had gained from their cursory reading of the paper. The pairs were praised for their input and their discussion of the summary of the paper which led to further prompting and resultant discussion as a group over wider methodological concerns, such as measurement issues. At the end of this initial task, the students could summarise the aims and objectives of the paper and the main findings, as well as understanding how key concepts such as social class were measured and the limitations of the measures employed. The seminar group was then split into smaller groups of three or four and given a copy of one graph presented in the paper. The graphs had been photocopied onto A3 paper and the groups were encouraged to work together to make three interesting comments about the graph to share with the rest of the class. They were prompted to look for patterns in the graphs and to try to use the summary of the paper to help them to interpret these patterns. Each group then presented their findings.

While the seminar was successful in that all the students presented and their understanding of the paper had moved forward, what was less clear was whether they had the confidence to individually approach a quantitative paper in the future.

## 6. Limitations

Creating an integrated curriculum with quantification strategically embedded in substantive modules requires support, cooperation and collaboration among staff (Dale et al., 2008; Bullock, Meadows and Brunton-Smith,

<sup>2</sup> Examples of the readings include:

Platt, L. (2011). *Understanding Inequalities: Stratification and Difference*. Bristol: The Policy Press.

Cheung, S. Y., Egerton, M. (2007). Higher Education expansion and reform: changing educational inequalities in Great Britain. In: Y. Shavit, R. Arum, A. Gamoran (Eds), *Stratification in Higher Education: A Comparative Study* (pp. 195-219). California: Stanford University Press.

Richards, L. (2015). *Briefing note from the Oxford Centre for Social Investigation on Gender Inequalities*. Retrieved from: [http://csi.nuff.ox.ac.uk/wp-content/uploads/2015/03/CSI\\_9\\_Gender\\_Inequalities.pdf](http://csi.nuff.ox.ac.uk/wp-content/uploads/2015/03/CSI_9_Gender_Inequalities.pdf). Accessed: 23rd September 2016.

<sup>3</sup> Questions included; 'How big are the educational 'attainment gaps' between social classes in the UK?' and 'Have differences in performance between classes changed substantially over time? If so, how?'



2014; Buckley et al., 2015). The lack of quantitative output in mainstream British sociology journals most probably interacts with the provision available to engage students with quantitative methods (Bullock, Meadows and Brunton-Smith, 2015). The launch of the Q-Step initiative has meant that quantitatively trained staff are available to help develop and deliver these materials in appointed Q-Step centres. In the case of the 'Introduction to Education and Society' module, the theme of educational inequalities was the only part of the module that had quantitative methods explicitly embedded in it and the lecture series was delivered by one member of academic staff. The seminar tutors for the module worked collaboratively to plan the aforementioned seminar to ensure that those tutors with lower levels of quantitative methods competency were able to confidently deliver the seminar.

Additionally, it is necessary to ensure that an integrated curriculum is not overly repetitive. Indeed, embedding quantification in substantive curricula runs the risk of further disengaging students or perpetuating negative attitudes (Buckley et al., 2015). Admissions by students studying the 'Introduction to Education and Society' module that they had not engaged with the required reading and questions prior to the seminar, may be partly attributed to the fact that the paper reported quantitative findings.

Further, Bullock, Meadows and Brunton-Smith (2014) argue that the success of embedding is limited when high stakes assessment in substantive modules does not call for an understanding of quantitative methods or data. This criticism is particularly salient in the case of the 'Introduction to Education and Society' module. Student assessment for the module was based on responses to essay questions and the students did not need to call upon quantitative methods to excel in the module. Furthermore, within the School of Social Sciences, students are not required to complete an individual research project and it is not compulsory to undertake a dissertation as part of any degree programme. This may further discourage students from engaging with quantitative methods, especially if students are instrumental in their approach to learning (see below).

## 7. Quantitative methods and the employability of sociology graduates

While students often resist learning quantitative methods, many recognise their importance for their future employability (MacInnes, 2009; Nind, Kilburn and Luff, 2015). At the start of their study, Williams et al. (2015) found that over 80 per cent of students in both the control and the experimental group reported that having good numeric skills would help them gain employment after graduation. Scott Jones and Goldring (2014) highlight how, with the current needs of the economy in mind, students are often encouraged to pursue a degree subject which contains some numeric or wider Science, Technology, Engineering, or Mathematics (STEM) aspect to ensure their future employability.

Indeed, compared to previous generations who studied sociology at degree level in order to help them better understand contemporary social phenomena (Steinmetz, 2013; Nind, Kilburn and Luff, 2015), there has been a shift in student body toward more instrumental learners who consume modules to achieve a degree rather than immerse themselves in a subject. Their ambivalence toward learning about quantitative research methods may be part of a broader strategy that they are adopting in order to maximise their employability prospects upon graduating with a social science degree. Nind, Kilburn and Luff (2015) argue that for the majority of social science students, the aim of research methods training is to acquire transferable skills and to enhance graduate employment prospects. The minority of students who are passionate about their discipline may seek additional training to enable them to have a career within the social sciences. This situation could be partly attributed to calls for a more 'humane' education (Albrow, 1986) that would provide sociology graduates with key skills for employment which were made in the face of graduate unemployment and loss of research positions within the discipline in the 1980s and 1990s.

In discussing graduate employability, Brown and Hesketh (2004) differentiate between what they term 'Players' and 'Purists'. Players are those who construct a narrative of employability to meet the needs and wants of specific companies and 'play the game'. Purists can be seen as being less strategic and more honest to academic ideals.

Developing the argument above, it seems plausible to extend these ideals of 'Players' and 'Purists' to the selection of degree choice that students make. It appears that there is a growing scepticism over students' motivations for choosing to study sociology at degree level and this could go some way to explain the resistance toward engaging with quantitative research methods within the discipline. In a sense, purists can be seen as those who have a genuine passion for the subject, having studied it at A-level or having read around



the subject. These students wish to better understand their social world and hope to become equipped with the research skills over the course of their degree to help them to investigate contemporary social issues. However, a number of students studying sociology could be seen as players. These students appreciate the multi-disciplinary nature of a sociology degree and the fact that graduates holding sociology degrees will have acquired through their programme of study, a number of key employability skills such as communication and presentation, writing and some numeracy skills.

Bullock, Meadows and Brunton-Smith (2014) argue that the current economic climate in Britain may encourage students to engage with quantitative methods more. If students are more aware of the utility of quantitative methods in the work place they may be more willing to invest in developing these transferable skills. Indeed, it has been suggested that higher education career services could be involved in organising guest talks to highlight the role of quantification in graduate jobs (Adney and Carey, 2009).

Moreover, given the marginalisation of quantitative research methods throughout the development of sociology, it is important to consider whether there are sufficient staff who are able to confidently implement an integrated curriculum (Bullock, Meadows and Brunton-Smith, 2015). Indeed, MacInnes (2009) notes that undergraduate quantitative methods training has become exclusively the responsibility of the minority of academic staff with strong quantitative skills in social science departments. Many academic staff report that their quantitative research methods skills are self-taught and MacInnes (2009) speculates over their ability to deliver training to undergraduates. Indeed, analysis of the 2015/2016 survey data on sociologists' views of their discipline reveals that amongst the youngest cohort (under 35) in the study, over 80 per cent perceived themselves as a qualitative researcher. This leads to speculation over the future place of quantitative research within the discipline and suggests that greater support for engaging students with quantitative research may be needed from outside of sociology departments.

While pedagogic interventions such as embedding may go some way to lessening students' anxiety toward quantitative methods, in order to encourage students to actively engage with quantitative research and use quantitative methods independently, it may be advantageous to link quantitative methods learning with the rhetoric or narrative of employability. MacInnes (2009) argues that linking quantitative methods learning to students' narrative of employment is crucial and possibly the most powerful way to counterbalance their resistance to engaging with quantitative methods. This could be achieved through the use of guest speakers from both the public and private sector who could highlight the importance of quantitative methods, even in non-numeric professions or through the introduction of work placements.

## 8. Conclusions

At a time of severe financial cuts and rising unemployment rates among graduates, an appeal was made to make the sociology undergraduate curriculum more 'humane' in order to ensure the future of the discipline (Albrow, 1986). There was a shift in the content of sociology courses from equipping students with the skills necessary to be social researchers to a focus on providing a broader curriculum that would enable students to acquire transferable skills for the workplace. It has been argued that this change in curriculum has been reflected in a change in students' attitudes toward the discipline and motivations behind pursuing sociology at degree level.

Acquisitive learners view the interdisciplinary nature of sociology and the broad range of skills that graduates acquire through their degree as a stepping stone to employment. This is particularly so in response to calls for more STEM literate graduates in the current economic climate. In addition, the limited number of professional sociologists who engage with quantitative research methods has been put forward as a concern over feasibility of embedding as a pedagogic solution.

Future research is needed to formally evaluate students' views of embedding quantitative research methods within the *'Introduction to Education and Society'* module in the School of Social Sciences at Cardiff University. However, anecdotal evidence from tutors teaching on the module, suggests that students require considerable encouragement to engage with material that has had quantitative research methods strategically embedded within it.

It seems that pedagogic interventions such as embedding are only a half measure to ensuring students become more interested in quantitative methods. Instead, it has been suggested that linking quantitative





methods learning to the narrative of employment through guest lectures or work placements may be a more effective way to engage the current cohort of students with quantitative methods.

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