ESRC National Centre for Research Methods

Assessment of Needs for Training in Research Methods in the UK Social Science Community

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List of abbreviations

- AIM: Advanced Institute of Management
- BIAS: Bayesian methods for combining multiple Individual and Aggregate data Sources in observational studies
- BSA: British Sociological Association
- CAQDAS: Computer Aided Qualitative Data Analysis
- CASS: Centre for Applied Social Surveys
- CCSR: the Cathie Marsh Centre for Census and Survey Research
- CEMMAP: Centre for Micro-data Methods and Practise
- ECPR: European Consortium for Political Research
- ESDS: Economic and Social Data Service
- ESRC: Economic and Social Research Council
- IDPM: Institute for Development Policy and Management
- ISA: International Sociological Association
- LEMMA: Learning Environment for Multi-level modelling Applications
- NCeSS: National Centre for e-Social Sciences
- NCRM: National Centre for Research Methods
- NIRSA: National Institute for Regional and Spatial Analysis
- PSA: Political Studies Association
- RDI: Research and Development Initiative
- RMP: Research Methods Programme
- SOSIG: Social Sciences Information Gateway
- SRA: Social Research Association

Executive Summary

One of the aims of the work of the National Centre for Research Methods (NCRM) is to assess the research methods training needs of the UK Social Science community. An initial consultation exercise was conducted in 2004 focusing on senior researchers/academics. This current report focuses on the findings from an assessment of training needs conducted with PhD students, junior researchers and academic employers of research staff.

The work was conducted between June and December 2005. This assessment draws on the following data: a questionnaire survey of PhD students, project researchers and ESRC fellowship holders; analysis of questionnaires distributed at NCRM events and via an online questionnaire; a questionnaire survey of ESRC Centre Directors and holders of large ESRC Grants; and an analysis of person specifications of job advertisements for academic social science research staff.

The surveys of researchers indicated an increasing demand for training in quantitative methods, relative to qualitative methods, with increasing seniority. Thus, researchers identified a need for training in qualitative methods of data collection and analysis at the start of their careers (especially at PhD level), but there was a recognition of an increasing need for skills in advanced quantitative methods as their career progressed through to senior level. A similar tendency was reflected in the survey of academic employers and analysis of job advertisements which both indicated that academic employers seek researchers with skills primarily in quantitative methods and that academic employers support more training in this area.

Researchers, and to a lesser degree academic employers, identified training needs in fairly broad, general topics and, in the main, in traditional areas of methods. Respondents attending NCRM events expressed an interest and need for training in innovative and developing methods. This second group of respondents are likely to have a specific interest in methods and so this finding is not surprising but it does indicate that the mass of researchers feel they lack skills in traditional methods (at a range of levels) and are either unaware or uninterested in training in more innovative methods.

Specific issues emerging from the researcher survey as common training needs were: interviewing; qualitative analysis (including CAQDAS); statistics/quantitative methods (at all levels); use of statistical software; and, longitudinal data analysis. The researcher survey also indicated that researchers, especially at more junior levels, recognise the need for training in a range of methods. Nevertheless, it was very unusual for researchers to identify themselves as working across a range of methods or of using mixed methods in their research.

Data from PhD students indicated that students' training needs in their chosen area of study for their PhD are not wholly met by their institutions. In particular, students noted the need for further training in interviewing techniques and qualitative data analysis. The former appeared to relate to concerns about putting skills learnt into practice. Concern about a lack of skills in qualitative analysis was widely reported indicating that research training, and indeed supervision, is not providing adequate support for the development of these skills.

In terms of training delivery, there was considerable demand for regional training. Traditional face-to-face short courses were identified as the preferred type of training event, with particular interest expressed in one day events. There was only limited support for placements among all groups although 'apprenticeship' models have been identified in other studies as appropriate forms of skill acquisition and development, especially in some methodological areas such as qualitative research.

There was support for on-line training among researcher survey respondents but much less so among academic employers. On-line training has a number of potential advantages, perhaps especially for senior researchers who identified lack of time as the primary reason for being unable to access training. Nevertheless, online training resources require very significant investment for their development and will need to be promoted widely in order to encourage uptake.

Lack of funding was identified as the primary reason for contract researchers being unable to access training. The surveys indicated a need for the development of an on-going training programme for contract researchers, especially for those in their first

post following completion of their PhD. A system of annual summer schools across the UK for contract researchers would be one way of supporting researchers early on in their careers in the development of a range of skills on which to build for the future.

Given the finding that PhD students' training needs are not always adequately met by their institution, there is a case for developing training aimed at mid-career and senior researchers. This is a particular issue for those involved in teaching research methods at undergraduate or postgraduate level and in research supervision. Events focused on updating research methods knowledge in relation to innovative and developing methods are particularly appropriate for this group.

In terms of the level of training, the academic employers' survey indicated that there is a case for institutions covering basic training and the ESRC and its investments focusing on intermediate and advanced training. However, given the recognition that the level of training provided by institutions is highly variable, this suggests the need for collaborative provision across institutions for PhD students and the availability of basic training courses for researchers at all levels, especially in topics such as statistics.

Similarities and differences between the 2004 and 2005 assessments conducted by NCRM are discussed in the conclusion (page 82) along with issues for consideration emerging from this assessment of training needs (page 85).

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1. Introduction

The ESRC National Centre for Research Methods (NCRM) was established in April 2004 to enhance the range and quality of research methods used by the social science community. The Centre comprises a co-ordinating Hub at the University of Southampton and a network of six Nodes across the UK. One of the aims of the Centre's work is to assess the research methods training needs of the UK Social Science community. The purpose of these assessments of training need are:

- to inform the Centre in the strategic planning of its training and other capacity building activities;
- to inform the ESRC in the development of its policy and strategies relating to training and capacity building in research methods.

The primary focus of our assessments of training need is on the needs of social science researchers in the development of their careers beyond standard undergraduate and postgraduate programmes of study. However, the stage at which training is delivered, e.g. doctoral versus postdoctoral, may be irrelevant to many aspects of the assessment of training needs, and so it is expected that the outcomes of the Centre's assessments should also be relevant to strategy and policy regarding postgraduate training. ESRC has indicated that the Centre's assessments might, for example, inform the preparation of the training guidelines associated with the next main recognition exercise.

Two approaches are used to conduct assessments of training need:

1. specific consultations conducted on an annual basis
2. on-going assessment through completion of short questionnaires distributed at NCRM training and other events and events run by other ESRC investments (Research and Development Initiative (RDI), Research Methods Programme (RMP), National Centre for e-Social Sciences (NCeSS) and Centre for Applied Social Surveys (CASS)).

The development of the evidence base on training needs requires consultation with individuals and groups within the social science community. These individuals and groups are:

1. Academics and academic researchers at professorial, senior and mid-career levels;
2. Postgraduate students and junior researchers;
3. Established methodologists and those at the forefront of methodological innovation;
4. Key academic stakeholders;
5. Representatives of learned societies;
6. Government organisations involved in social science research;
7. Commercial and voluntary sector social research organisations;
8. Users of social science research and practitioners;
9. Recruiters and employers of social scientists and research managers
10. Providers of training.

An initial consultation exercise was conducted in 2004 prior to the establishment of the Centre (Beissel-Durrant & Lang, 2004). That assessment focused primarily on groups 3, 4 and 5 from the above list. This current report focuses on the findings from an assessment of training needs conducted with academic researchers during 2005. This assessment focuses primarily on groups 1, 2 & 9 from the above list (i.e., researchers at various career points in academic institutions). These data allow us to analyse perceptions of training needs across the career trajectory. A subsequent assessment is planned for 2006 which will focus on groups 6 and 7 (the non-academic researcher community).

The main aims of this assessment are to identify:

1. current training needs
2. future training needs (i.e. the identification of likely developments in research methods for which there will be future training needs.)
3. level at which training is needed (e.g. basic, intermediate, advanced etc);
4. topics on which training is most needed;
5. geographical aspects of training (i.e. where face to face training is delivered)

6. format and type of training needed (e.g. 1/2/3-day training course; summer school; on-line resources and on-line learning; seminars etc.)
7. target groups for training (i.e., what groups training provision should be targeted at)
8. availability and awareness of information about training;
9. access to training courses (e.g. availability of funding opportunities to attend training courses; reasons why individuals are not able to access training).

This assessment draws on the following data:

- a questionnaire survey of PhD students, project researchers and ESRC fellowship holders ('researcher survey')
- analysis of questionnaires distributed at NCRM events and via an online questionnaire ('NCRM events participants' survey')
- a questionnaire survey of ESRC Centre Directors and holders of large ESRC Grants (£200k+) ('academic employers survey')
- Analysis of person specifications of job advertisements for academic social science research posts over a 4 week period to identify the skills sought by employers of social scientists.

The Report is organised into four sections: section two outlines the background to training needs; section three describes the methods employed and the respondents; section four outlines the findings of the researcher survey, the NCRM events participants survey, the employer survey and the analysis of advertisements for research posts. Finally, section five comprises a discussion of these findings and conclusions.

2. Background: the need for research methods training

This section reviews recent reports in relation to training needs and skills shortages within the social sciences.

The concern with a shortfall in research methods skills in the social sciences, particularly in relation to quantitative research skills, has been a concern of the ESRC for some time and has resulted in considerable investments in research methods training and support for methodological innovation in the social sciences (e.g., the Research Methods Programme, the National Centre for Research Methods and the Researcher Development Initiative). These developments reflect the ESRC's aim to provide the necessary knowledge and evidence through high quality research (and suitably skilled researchers) that is able to address issues of economic and social importance to business, the public sector and government and engage with end users of research to ensure knowledge transfer and shared learning (ESRC, 2005). The ESRC National Centre for Research Methods (NCRM) was established in April 2004 to enhance the range and quality of research methods used by the social science community to contribute to this overall mission.

Training for current ESRC-funded PhD students is aimed at providing PhD award-holders with broad based research skills across methodologies as well as more general and transferable skills (ESRC, 2005). There nevertheless exist a significant proportion of social science researchers both in academic and non-academic sectors who are perceived to lack a broad base of research skills. This may be particularly the case for mid-career researchers and for researchers who gained their PhDs prior to the Roberts Report (2002). Skill shortages have been noted, particularly in relation to the use of quantitative methods, in specific social science disciplines such as education (Rees & Gorard, 2005) and sociology (Payne, 2004). Various measures have been adopted to remedy this perceived shortfall, primarily through the range of ESRC investments in general research methods training but also, in relation to educational research, through the TLRP Research Capacity Building Network (RCBN) based at Cardiff (Rees and Gorard, 2005).

A lack of research skills in non–academic research organisations has also been identified, including within, for example, local government (LARIA, 2005). The need for training to address this need, especially for mid-career researchers, has been noted (SRA, 2005). This has led many non-academic organisations to develop core competency frameworks in order to define the behaviours, skills and knowledge necessary to undertake a job effectively (GSR, 2005; National Statistics Code of Practice, 2004) and to aid in the development of staff. Social research skills are seen to underpin these competencies and a range of research skills have been identified to assist managers in the consideration of staff members' personal development. A commitment to staff having continuing development and training relevant to the core competencies are central parts of these frameworks.

Evidence for the shortfall in skills among social scientists and the inadequacy of training is indicated in a study conducted for the ESRC by Purcell et al (2005) on the employment of social science PhDs in academic and non-academic jobs. This study found that PhD holders felt they had inadequate training to equip them for their posts both in the academic and non-academic sectors in specific research skills, particularly in relation to quantitative research and the analysis of qualitative data. Furthermore they felt that they had received inadequate training and skill development in 'general and transferable skills', especially in relation to project management, teamwork and career development. Non-academic employers of people with social science PhDs noted the lack of project management and communication skills. The authors note the need for training to address these deficiencies but also note that their sample comprised individuals who had completed their PhD prior to the implementation of the recommendations of the Roberts review (2002) and that PhD training and development gaps are likely to have been rectified in many departments.

Consultation exercises on training needs conducted by the RMP (2002) and NCRM (2004) indicated a range of issues in relation to the provision of research training (see appendices 1 & 2 for a summary of the issues emerging from the RMP and NCRM consultation exercises). The need for on-going training throughout researchers' careers and the need for training for trainers and research supervisors were noted in both reports. The NCRM Consultation Exercise identified a range of areas in which training is needed. The broad areas were identified as: quantitative methods;

statistics; qualitative methods; Computer Aided Qualitative Data Analysis (CAQDAS); and data analysis. Specific methods or techniques where training is needed were identified as: multivariate analysis; econometrics; multilevel modelling; structural equation modelling; longitudinal analysis; and, discourse analysis. In addition, training needs were identified in relation to research design and philosophy and also in general research and transferable skills.

In relation to the delivery of training, both Consultation Exercises noted that training should be conducted in a range of formats to enable researchers to access training regardless of their geographical location and resources (both time and money) at their disposal. This includes on-line training as well as more traditional short courses, workshops and master classes. In addition, non-traditional training events such as mentoring and apprenticeships were identified as important. The tension between discipline-specific training and generic training was also identified. While scope for generic training in general research and transferable skills was identified it was noted that methodological training in other areas needed to be disciplinary-based.

A number of challenges involved in improving or extending the methodological skills base among researchers in academic settings have been identified. Some have argued, in particular, that the problem of skill shortage cannot be remedied simply by the provision of training courses (May, 2005; Rees et al, 2004). May (2005) noted in his response to Payne's (2004) assertion of a shortage of quantitative research in sociology (Payne, 2004) that there are a number of structural and discipline-specific reasons to explain the dominance of qualitative methods in sociological research. These factors relate to time, financial resources and the culture of individualism within sociology. May (2005) also notes that British sociology's wider theoretical interests are not hospitable to quantitative concerns with measurement and objectification. Following this argument, then, the provision of courses in, for example, quantitative methods are unlikely to be sufficient in bringing about a change in methodological practice.

In a similar vein, various consultation activities undertaken as part of the RCBN indicated that, while there was a view that the quality of educational research needed to be improved, only a minority of respondents to a skills consultation survey

expressed a willingness to participate in activities designed to develop their methodological competences further (Rees and Gorard, 2005). In particular, their analysis revealed that educational researchers indicated little interest in certain methods, such as the analysis of secondary data-sets, advanced statistical methods and some specific qualitative methods such as the analysis of visual and sound-based data. In common with May's (2005) explanation, Rees et al (2004) note that the social context in which educational research (and arguably other social science research) takes place militates against the success of a formal programme of skills development training. They note that lack of time and resources as well as the pressure for academics to develop specialist and focused research areas militate against researchers broadening their methodological expertise. Drawing on research on professional learning they note that non-formal models of learning (such as mentoring and on-the-job training) may be equally, if not more, appropriate ways for broadening researchers' skills base. The value of non-formal modes of learning was similarly noted in the RMP consultation exercise (2002).

A review of reports and literature on this topic indicates there is a need for training in a range of methods across researchers' career lifecourse both to improve the level of methodological expertise and research conducted and to equip young social scientists with the skills necessary for employment. Nevertheless, a number of constraints have been identified which may militate against researchers broadening their methodological skills.

3. Methods and Respondents

The training needs assessment comprised four sets of data:

- Data collected from a survey of ESRC-funded PhD students, researchers working on ESRC projects and ESRC fellowship holders in September-October 2005. This data set is referred to as the 'researcher survey'.
- Data from questionnaires completed at NCRM events between September 2004 and August 2005 and data from an on-line questionnaire available from the NCRM website from September to October 2005. This data set is referred to as the 'NCRM events participants survey'
- Data from a survey of ESRC Centre/Programme Directors and ESRC grants £200k and over in September and October 2005. This data set is referred to as the 'academic employers survey'.
- Data from a content analysis of social science research posts advertised during a four week period from 12 September until 7 October 2005.

Procedures for gaining access to respondents and methods of data collection are now described.

3.1 Researcher survey

The 'Researcher Survey' (see Appendix 3 for the questionnaire) comprised: a) Registered ESRC-funded PhD students; b) researchers working on ESRC project grants; and c) holders of ESRC fellowships (postdoctoral fellowships, research fellowships and professorial fellowships). An email list of PhD students (N=1341) and postdoctoral fellows (N=56) registered with ESRC in August 2005 was obtained from the ESRC. These individuals were contacted by email with a link to an online questionnaire to be completed and returned via the NCRM website. A list of researchers working on ESRC projects as well as the total number of such researchers is unfortunately unknown since ESRC does not keep such information. In order to contact the group of researchers working on ESRC funded projects, emails were sent to the principal investigator of all ESRC projects of £30,000 or more and all directors of research centres registered with ESRC in August 2005 with a request that they

forward the email to their researchers. A list of principal investigators and directors was provided by the ESRC for this purpose. This questionnaire was made accessible only to those individuals who were invited to participate. The initial email was sent out on 5 September 2005. A follow-up email was sent out on 21 September 2005 with a closing date of the on-line questionnaire of 14 October 2005. The 'researcher survey' questionnaire comprised a mix of open and closed questions on training needs, provision and the delivery of training.

From the three groups, a total of 697 responses were received. This comprised 448 PhD students and 249 researchers (this includes researchers working on ESRC projects and holders of ESRC fellowships). The response rate for the PhD students was 33% (448/(1341-20) since 20 emails failed to be delivered due to absence of some of the respondents). It was not possible to calculate the response rate of ESRC fellowship holders as the question designed to identify whether the researcher held an ESRC fellowship or not seemed to have been misunderstood by some respondents. It was also not possible to calculate the response rate of all researchers as data on the total number of researchers employed on ESRC projects are not held by the ESRC.

3.2 NCRM events participants' survey

A questionnaire has been distributed at all NCRM events (n=12) over a one year period (September 2004-August 2005) (See Appendix 4 for the questionnaire). These events included training events, meetings of NCRM associate members at the University of Southampton, the Centre launch and the Government Social Research Forum.

The same questionnaire was also made available on the Centre website during the period of the Researcher and Employer Surveys for any individuals who wished to participate in the assessment but who did not form part of the groups specifically invited to participate. The questionnaire distributed at NCRM events and the online version was very similar to the 'researcher survey' questionnaire. Data from the events questionnaire and the online version for 'enthusiasts' were combined into one data set. The data set comprised responses from 99 individuals. This was made up of

94 questionnaires from NCRM events and 5 online questionnaires. Since the majority of responses are from participants of NCRM events the survey is referred to as the 'NCRM events participants' survey'.

3.3 Academic employers' Survey

The 'Academic Employer Survey' (see Appendix 5 for the questionnaire) comprised directors of ESRC Centres and Programmes (N=85) and Principal Investigators of ESRC grants of £200K or more (N=97). An email list was obtained from the ESRC for these individuals. Individuals were sent an email on 1 September 2005 inviting them to participate in the survey with a link to a questionnaire that could be accessed and completed online. An initial five week period was given to complete the questionnaire and one reminder was sent at the end of this period with the survey completion date extended for a further two weeks. The closing data was 14 October 2005. The questionnaire was made accessible only to those individuals who were invited to participate. The questionnaire comprised a mix of open and closed questions although the emphasis in this questionnaire was open questions relating to research skills and training needs.

Two people contacted declined to participate, noting that the questionnaire was inappropriate for them as they did not employ researchers. In one additional case an email did not reach the respondent resulting in a total of 179 contacted. Questionnaires were returned from 58 respondents, giving a response rate of 32%.

Data from all three surveys were analysed using SPSS. Responses to open-ended questions were, where appropriate, analysed manually.

3.4 Content analysis of research posts

The purpose of this study was to identify the research skills that employers view as necessary for posts in social and economic research with the aim of identifying training needs. This study was intended to complement the data arising from the survey of employers.

The study comprised a content analysis of job specifications for all posts for social and economic researchers in academic settings advertised in The Education Guardian, Times Higher Education Supplement and the website jobs.ac.uk, over a four week period from 12/9/05-7/10/05. The process was piloted one week prior to the study commencing. The study involved searching the jobs sections in both papers for all research posts for which social science research skills were sought. In relation to jobs.ac.uk, the search criteria were for jobs under the heading of academic/research relating to the following job sectors: economics; education studies; general research; health and medical; law; politics and government; psychology; social sciences and social care; and, mathematics. The employer type was restricted to 'UK and Irish HE institutions' and 'research and other institutes'.

The criteria for inclusion in the analysis were that posts should:

- identify a social scientist or social science skills as appropriate
- be primarily or exclusively research (i.e. where the research element comprises the major part of the post – this excluded lectureships)
- be located within an academic institution

The following posts were excluded from the analysis as the research skills necessary for these posts tend not to be stated and the research focus tends to be on broader and often unspecified research areas:

- Research professorships
- Research fellowships

For each post identified, further particulars were obtained (either via the institution's website or by email/telephone request). The person specification for each post was examined to identify the specific research and related skills sought. Where inadequate information was available in the person specification, the job description was examined to identify the skills being sought. A data extraction form was created to extract the information for each post. Data were extracted in relation to the following issues: discipline in which the post was located; qualifications necessary; previous experience necessary; specific research/ methodological skills; general research skills;

transferable skills. Once this data was extracted across all the posts advertised, this was collated. Given that the skills sought for posts are likely to differ according to the grade of the post, these data were analysed in three groups: research assistant posts, research fellow/associate posts and senior/principal research fellows.

4. Results

4.1 Researchers survey

4.1.1. Sample characteristics

Out of a total of 697 respondents, the majority were registered for a PhD (64%; n=448), with the remainder either working as researchers on ESRC-funded research projects or holders of ESRC fellowships (36%; n=249). Of the 448 PhD students, 60% were registered as full-time students; 73% (n=329) were in their second or third year, with the remainder in their first or fourth year (27%; n=119). In terms of their disciplinary affiliation, the greatest number came from psychology (16%; n=115) and sociology (15%; n=105), followed by political science and international studies (9%; n=65), human geography (7.5%; n=54), economics (7.5%; n=53), education (7.5%; n=53) and management and business studies (7.5%; n=53), social policy (5%; n=33) and social anthropology (5%; n=31) (see Table 1.1). As expected, the vast majority (98%) of respondents were located within the university or college sector; 7 respondents were working for a research institute, 5 for governmental or public sector-organisations and 2 for other organisations.

Table 1.2 summarises the positions occupied by researchers, fellows and PhD student, whilst Figure 1.1 presents the researchers' disciplinary affiliation according to the position they currently occupy. Some of the junior and senior researchers were also doing a PhD but declared themselves as 'researchers' rather than 'students', hence the lower figure of 389 students in this particular table. About 85% of respondents were students or junior researchers, with only 11% of respondents working as senior researchers or higher. This means that findings from the survey primarily reflect the views of junior researchers. Moreover, half of respondents were younger than 33 years of age (with an overall age range between 23 and 73 years of age). Almost one third of all respondents indicated that they were involved in training or supervision. Sixty per cent of respondents were female. The survey achieved a reasonable regional

coverage in relation to England, Wales and Scotland, although only 1% of respondents were from Northern Ireland (Figure 1.2).

Table 1.1: Distribution of researchers according to their affiliated discipline

Discipline	**Number**	**%**
Psychology	115	16
Sociology	105	15
Political science and international studies	67	9
Human geography	54	7.5
Economics	53	7.5
Education	53	7.5
Management and business studies	53	7.5
Social policy	33	5
Social anthropology	31	5
Other	133	20
TOTAL	**697**	**100**

Table 1.2: Positions occupied by researchers, fellows and PhD students

	Number	**%**
Student	389	56
Junior researcher	199	29
Senior researcher	38	5
Professor/reader/head of department/director	43	6
Other	28	4
TOTAL	**697**	**100**

Figure 1.1: Discipline affiliation of the researchers according to their position

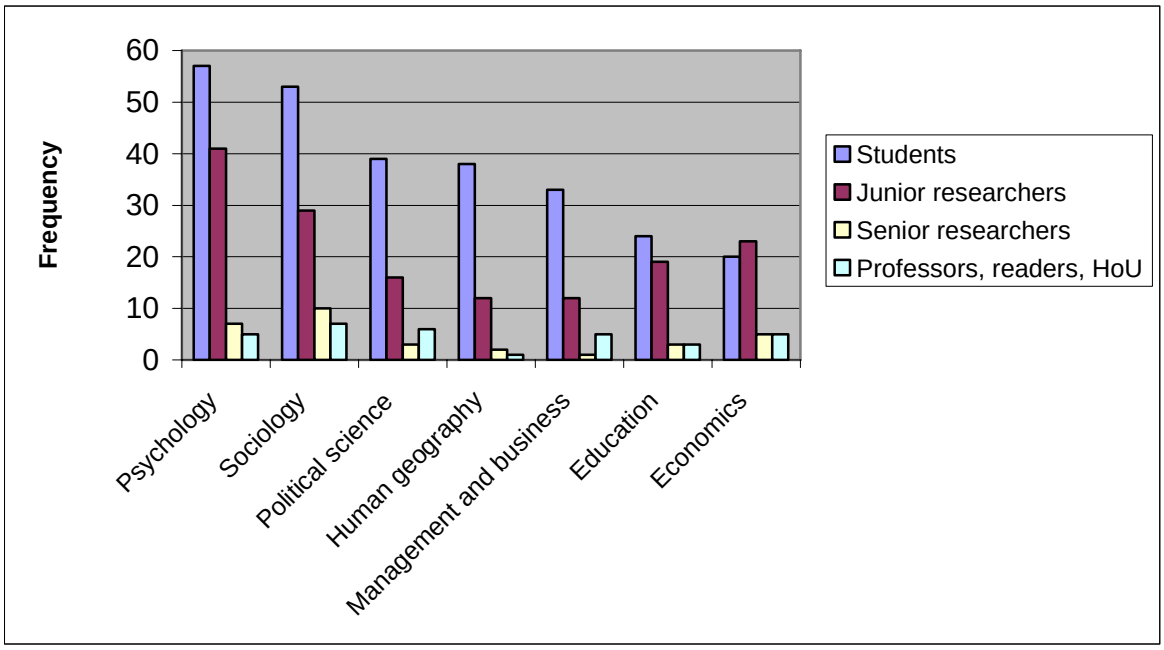
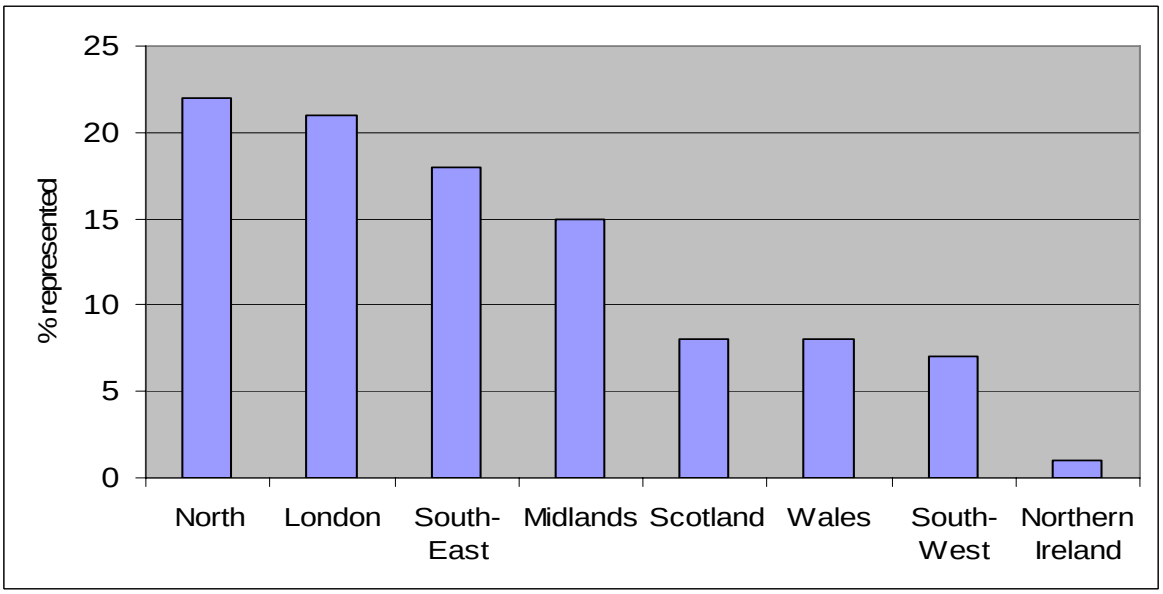


Figure 1.2: Distribution of researchers according to their region



Students and junior researchers (Group 1) had different characteristics compared to senior researchers and professors, readers, head of units and directors (Group 2) (Table 1.3). Group 1 had an average age of 36 years whereas Group 2 was on average

46 years old. Therefore, the results for these two groups of respondents are analysed and contrasted in section 4.1.3 of the results. 'Other' researchers (n=28) were left out of the analysis.

Table 1.3: Sample characteristics of Group 1 (Students and junior researchers) as compared to Group 2 (Senior researchers and professors, readers, heads of unit and directors)

Characteristics	**Group 1 (n=588)**	**Groups 2 (n=81)**
	%*	**%***
% female	65	35
Working at university	99	95
Involved with supervision	22	80
Region:		
✓ North	23	16
✓ London	20	25
✓ South-East	18	21
✓ Midlands	15	8.5
✓ Scotland	8	6
✓ Wales	8	7.5
✓ South-West	7.5	11
✓ Northern Ireland	0.5	5
Discipline		
✓ Psychology	17	15
✓ Sociology	14	21
✓ Political science and international studies	9	11
✓ Human geography	8.5	4
✓ Management and business studies	7.5	7.5
✓ Economics	7.5	12.5
✓ Education	7.5	7
✓ Social policy	5	1
✓ Social anthropology	5	1
✓ Other	20	20

*percentages within each of the groups

4.1.2 Researchers' perceived training needs

Respondents were asked to identify their own specific training needs as well as what they perceived as more general training needs of the social science community. In this section, we first present quantitative results relating to training needs according to the career stage of respondents and then present a qualitative analysis of the responses overall. We conclude with a summary of the training needs identified by researchers.

For the purposes of analysing perceived training needs relating to career stage, we have separated results relating to training needs into four categories: students; junior researchers; senior researchers; and, Professors/Heads of Units/Directors. Additional qualitative analysis of responses is presented in the section on post-graduate students relating to the methodological approach used in their PhD and the extent to which training needs in these topics was met by their institution.

4.1.2.1 Training needs: students

In terms of their individual training needs, student respondents identified a need for training primarily in **qualitative data collection and analysis**. Specific qualitative methodologies (discourse analysis, ethnography and narrative analysis) were also identified. 'Interviewing' was an area that was widely identified as a training need (30%); in most cases this appeared to relate to qualitative in-depth interviewing rather than survey interviewing although this was not stated in all cases. The analysis of qualitative data was also frequently mentioned; this included, but was not confined to, CAQDAS. A need for training in quantitative methods was identified but less frequently than the need for training in qualitative methods. A range of statistical approaches were identified as training needs, with modelling techniques most frequently mentioned. The use of statistical packages such as SPSS, STATA and LISREL were also identified as training needs however less often. Table 1.4 sets out the areas identified most frequently by student respondents.

Table 1.4: Students' individual training needs (n=389)

Training Need	%
Interviewing skills and practice	30
Qualitative data analysis	28
Statistics	18
Qualitative methodologies	15
Use of statistical packages	9

In terms of their perceptions of general needs across the social science community, the focus was on training in both **qualitative and quantitative analysis** rather than data collection. A broad range of areas were identified but those identified most frequently were qualitative data analysis (including but not confined to CAQDAS), statistics and advanced quantitative methods and the use of software for quantitative analysis (SPSS and STATA). Specific quantitative approaches identified were: modelling, survey techniques and panel data. Table 1.5 displays the results.

Table 1.5: Students' perceptions of general training needs (n=389)

Training Need	%
Qualitative data analysis	30
Statistics/advanced quantitative methods	22
Use of software for quantitative analysis	5

The ESRC expressed a particular interest in knowing which methods are being used by Masters and PhD students and in which aspects of these methods they felt more training was needed than was currently provided at their institution. The remainder of this section discusses responses to questions relating to these two issues.

The methods used by postgraduates are summarised in Table 1.6. Only the methods which were mentioned more than once are listed in the table.

Table 1.6: Methodological approaches used by Masters and PhD students (n=448)

Methodological approach	Number	%*
General		
Interviewing	182	40
Quantitative and qualitative combined	45	10
Questionnaires and design	25	5
Method triangulation	4	1
Secondary analysis	3	0.5
Qualitative		
Qualitative approach (observation)	129	29
Ethnography-anthropology	43	10
Discourse analysis	32	7
Case study	24	5
Experimental methods	12	2.5
Oral history/historical data	9	2
Biographical narrative	7	2
Focus group discussions	5	1
Archives	6	1
Qualitative (life history)	3	0.5
Videos	3	0.5
Quantitative		
Quantitative analysis	70	16
Regression	20	4
Longitudinal data	18	4
Survey data	8	2
Econometrics	7	2
Structural equation modelling	2	0.5
Survival analysis	2	0.5

*More than one approach could be mentioned and not all respondents answered this question, therefore percentages do not add up to 100

In terms of training needs being served in relation to their chosen area of methods, a number of respondents noted that their methodological training needs were well served by their institution, for example:

Training provision has been excellent.

Advanced training (seminars, workshops and lectures) was provided for all areas.

There are courses where I can join in from time to time, which are pitched at masters level, so support from my institution is adequate.

However, a large proportion of PhD respondents noted that they did have additional training needs that were not met by their institution. The majority of respondents did not express dissatisfaction with the training they received although many noted it was at a basic level or that the point at which training was provided was inappropriate (i.e. at the beginning of the MPhil/PhD). Only very few respondents noted that their institution did not meet their training needs at all, but these comments were rare:

I felt I needed training on interview techniques, focus groups and qualitative analysis. It was felt in the department that in the absence of a suitable training course these skills could be learned without training but as I was going along (ie self taught).

The largest areas in which training needs were identified were in relation to qualitative analysis (n=39), interviewing techniques/skills (n=37) and in quantitative/statistical methods or analysis (n=21).

In relation to qualitative analysis, a large number of respondents noted the need for training in CAQDAS. In addition, respondents noted the need for training in general skills of qualitative analysis and the analysis of interview data. Typical comments were:

Qualitative data analysis software is possessed by the institution but very little training is available.

There has been little support for researchers using qualitative data analysis software.

*Desperately need better training in qualitative data analysis. I am currently using NUD*IST because of the large amount of data but I had to teach myself the programme and I'm sure I'm not using it to its full capacity.*

In relation to interviewing skills, many respondents did not note whether these were in qualitative or quantitative interviewing. However, very few respondents identified quantitative interviewing skills explicitly; where the approach was stated this was almost always qualitative. Several respondents noted the need for practical training in interview skills. Typical comments were:

Better interview training would be useful – especially with practice sessions and practical help rather than theory based training.

Actual interviewing as opposed to the theory behind it.

I had the basics several times (Masters and first year PhD) but this only introduced you to the approaches in a theoretical way which didn't help much with actually doing it (interviewing in particular).

In relation to quantitative analysis, the majority of respondents noted the need for training in statistical methods or analysis. This included the use of statistical packages such as SPSS, LISREL, STATA, E-PRIME, and MATLAB. Modelling techniques were frequently mentioned, particularly structural equation modelling and multi level modelling. Other approaches identified less frequently (by one or two respondents) were log linear modelling, path modelling, analysis of panel data and network analysis. Several respondents noted the need for training beyond the basic level which had been provided by their institution:

I would like (and need) more training in statistics as the course run in my department is extremely basic.

Other training needs identified less frequently related to particular qualitative approaches. Those identified most often were ethnography/participant observation (n=12); discourse analysis (n=8); narrative approaches/analysis (n=7) and grounded theory (n=5).

Other areas of training need comprised documentary analysis and archival research (n=10), questionnaire design (n=8), online research methods (n=6), video/visual methods (n=6), oral history (n=4) and econometrics (n=4).

A small number of respondents identified general research and transferable skills as unmet training needs. The most common of these related to project management skills:

The key area I would like more training and feel it would be most helpful at PhD level is in managing a research project. … I think with a bit of teaching, or just some online information for reference, PhD students could get through their work much more efficiently and with less stress and feeling of being 'thrown in at the deep end'.

4.1.2.2 Training Needs: Junior Researchers

Junior researchers identified their own training needs to be both in **quantitative (24%) and qualitative (23%) data collection and analysis**. Quantitative approaches identified were survey methods, modelling and spatial analysis. Interviewing was a frequently identified need. Other needs identified were longitudinal data analysis, advanced use of statistical packages (SPSS and STATA) and econometrics (see Table 1.7). In terms of qualitative analysis this included CAQDAS.

Table 1.7: Junior researchers' individual training needs (n=199)

Training Need	%
Quantitative data analysis	24
Qualitative methods	23
Interviewing skills	19
Longitudinal data analysis	13
Advanced use of statistical packages	13
Econometrics	8

In terms of their perceptions of general needs across the social science community, in common with the student respondents, junior researchers focused on data analysis rather than data collection, however, a much larger proportion noted the need for training in **advanced or intermediate statistics,** including modelling, panel data and survey techniques (see Table 1.8).

Table 1.8: Junior Researchers' Perceptions of General Training Needs (n=199)

Training Need	%
Advanced or intermediate statistics	34
Advanced qualitative data analysis	22
Basic statistical methods	14

4.1.2.3 Training Needs: Senior Researchers

Among senior researchers, individual training needs were identified most frequently in relation to **advanced statistics and longitudinal analysis**. In relation to quantitative analysis a wide range of approaches were identified by individuals, including: structural equation modelling; multi level modelling; survival analysis; event history analysis; and analysis of panel data (see Table 1.9).

Table 1.9: Senior Researchers' individual training needs (n=38)

Training Need	%
Longitudinal data analysis	21
Advanced statistics	11

In terms of general training needs, senior researchers identified needs in **advanced statistics,** particularly modelling, and, to a lesser degree, qualitative data analysis (see Table 1.10).

Table 1.10: Senior Researchers' Perceptions of General Training Needs (n=38)

Training Need	%
Advanced statistical methods	26
Qualitative data analysis	13

4.1.2.4 Training Needs: Professors/Directors/Heads of Units

Professors/Directors and Heads of Units identified their own training needs to be in **data analysis and interviewing.** A wide range of quantitative analytic approaches were identified by individuals, these included: panel data analysis; modelling; survey analysis; and, principal component analysis. The analysis of qualitative data was also identified. Interviewing was identified as a training need by around a quarter of respondents (see Table 1.11)

Table 1.11: Professor/Director/Heads' individual training needs (n=43)

Training Need	%
Interviewing	26
Techniques of quantitative analysis	23
Qualitative analysis	21

In relation to the training needs of the social science community more generally, qualitative data analysis (including CAQDAS) and basic statistics were the areas most frequently identified (see Table 1.12).

Table 1.12: Professor/Director/Heads' Perceptions of General Training Needs (n=43)

Training Need	**%**
Qualitative data analysis	28
Basic statistics	21

4.1.2.5 Researchers training needs: All Respondents

This section comprises a qualitative analysis of responses overall in relation to training needs.

Greater variation in responses and also greater specificity about training needs was evident in relation to individuals' specific training needs compared to perceptions of more general training needs.

4.1.2.5.1 Researchers' Own Training Needs

Training in both qualitative and quantitative methods were identified as training needs by respondents. Many individual respondents, particularly students and junior researchers, identified a need for training in both qualitative and quantitative methods, perhaps reflecting an awareness of the need for broad based research skills. However, few respondents mentioned a need for training in mixed methods explicitly. Typical responses in relation to individual training needs drawing on both qualitative and quantitative approaches were:

*Quantitative data analysis, multilevel modelling, qualitative software packages e.g. NUD*ST*

In relation to qualitative methods, training in qualitative analysis, and particularly in the use of computer-assisted qualitative analysis software (CAQDAS) was frequently

identified across people at all career stages, but particularly by students. In terms of techniques, training in interviewing and, to a lesser degree, in focus group facilitation and analysis were also noted frequently. In relation to specific methodological approaches, ethnographic approaches, discourse analysis and, to a slightly lesser degree, narrative analysis were identified, although again most commonly among post-graduate respondents. A small number of respondents identified the importance of training in innovative and developing methodologies, such as visual methods, the use of digital technologies, photo elicitation and video techniques/analysis. Training in the use of software to analyse these data were identified as important. However, individuals identifying the importance of these approaches comprised less than 5% of each group. A minority also identified the need for training in the integration of theory and data in qualitative research, for example:

Theory development as part of the thesis - current PhD research training seems to assume that all PhDs are empirical, and theory development is totally ignored

In terms of quantitative methods, training in quantitative analysis and statistics were frequently mentioned. The specific level of training required was often not identified. Training in the use of a range of software for analysing quantitative data was identified as important; while SPSS was frequently mentioned, several respondents noted the need for training in other software, such as STATA. Particular approaches in which training was viewed as necessary were: structural equation modelling; multi-level modelling; panel data analysis; and, longitudinal data design and analysis.

In relation to training needs specific to disciplines, the need for training in econometric methodologies and software was identified. Training for social historians in archival and documentary research was also identified by a minority of respondents. Training in the conduct of international research and language learning skills was noted as important for social anthropologists.

Training needs in relation to general research and transferable skills were not frequently identified. However, where they were, the following issues predominated: general issues of research ethics and in the procedures of gaining ethical approval for

research through institutional or NHS research ethics committees; media training; project management skills; grant writing skills and academic writing skills.

In terms of the delivery of training, several respondents noted the importance of training focusing on specific substantive areas or enabling participants to use their own data in training sessions. This type of training was viewed as more appropriate than more abstract training courses on specific approaches:

Overview of survey research, grounded in real life examples of quantitative data collection and analysis.

quantitative methods (highly focussed, so applicable to particular research questions), not adequate to offer an abstract seminar in, say, latent class analysis.

Qualitative methods workshops using own transcripts

4.1.2.5.2 General Training Needs

Respondents identified a range of areas in which training should be provided to meet the needs of the general social science research community. As with the responses to individual training needs, it was not uncommon for respondents to identify a need for training in specific quantitative and qualitative methods in their responses but only a small proportion identified a need for training explicitly in mixed methods. The specific responses given reflected the areas in which respondents were currently working and their specific research interests and not necessarily the areas in which training is most needed; this was a point noted by a number of respondents. This was a particular issue for students who may not have felt knowledgeable enough to comment on research needs other than their own.

Several researchers are aware of research methods being developed elsewhere (e.g. other disciplines, in other countries) on which they would like to see more training. Some of the specified examples given were: specific courses such as methodology symposium at the Sociology Department at Goldsmith College, Advanced Institute of Management (AIM) survey research seminar, applied discourse analysis at the Essex

Summer School, Learning Environment for Multi-level modelling Applications (LEMMA) Bristol, interviewing at Surrey University, Statistical Package for Social Sciences (SPSS) training at Lancaster University; and specific topics such as: Atlas-TI training course, video methods training, ESRC events, oral history techniques, short statistics courses, life history methods, media and publishing, N-VIVO, qualitative data analysis, CAQDAS, using verbatim quotations, visual methodologies, STATA training.

In terms of quantitative research methods training a need for basic and/or intermediate level training in statistics and general quantitative methods was commonly identified by respondents across career trajectories. This training was seen as particularly relevant for two groups of people: those without a maths degree or formal training in statistics and whose focus of research had been qualitative and for those who needed to update or refresh basic skills gained in the past:

A lot of students (like myself) come into geography with little maths background and so struggle even with basic stats...and in due course often lean towards qualitative methods where possible. As I am discovering there comes a day when you can no longer avoid stats if you want to progress in a research career and so the sooner the fear of stats is remedied the better. But to learn these methods we need patient and clear teachers who can sympathise with their students' struggles.

There's a need for basic statistical methods, especially reinforcement of methods learned a long time ago.

Not a whole course going over the technicalities, just some primer courses to revise and operationalise what I already know

In contrast, a proportion of respondents viewed the greatest training need in relation to quantitative methods to be in advanced quantitative/statistical methods, noting that basic and intermediate level training was already covered in postgraduate training courses. Specific areas identified frequently were statistical modelling, structural equation modelling and the use of specialist software. The use of advanced

econometric methods of analysis/software was identified as a training need by a small number of respondents.

In relation to qualitative research methods, the most commonly reported need was in relation to general qualitative analysis with some respondents specifically noting the need for training in CAQDAS (although this was less marked than in responses to individual training needs). Training in innovative and developing research methods was identified by a small number of respondents. These included training in visual methods, in the analysis of video and digital material and in internet-based research. Another aspect of qualitative research identified as a training need related to interviewing skills. Several respondents commented that training in qualitative methods was not made available to the same extent as training in quantitative methods. This was noted as particularly the case in post-graduate research methods training programmes. It was also noted that general training in advanced qualitative methods was hard to come by:

There was too much focus on quantitative methods and data processing in my ESRC methods training

After completing the MRes, a focus was put on SPSS but only one session out of an entire year looked at qualitative analysis

Qualitative methods and data analysis could be given greater emphasis

There is a need for training in qualitative analysis, although it needs to go beyond an introductory level, I haven't seen any courses for qualitative researchers that my supervisor views are appropriate for PhD level

An issue raised by a small number of respondents related to the linking of theory to method. This was viewed by some respondents to be missing from the ESRCs focus on methods training and concern was raised about the 'tool-box' approach to methods which left methods divorced from their philosophical underpinnings:

[There is a need] to link the technical aspects of research with theoretical considerations

[There is a need for] more general considerations of what method is rather than instantly assuming that method is an apolitical technical capacity that can be honed through specific techniques. I find the ESRC focus on this later as entirely unhelpful and in fact alienating to me

Training in documentary analysis and in particular in relation to historical documents was identified as necessary by a small number of respondents. A minority of respondents also noted the need for training in general research and transferable skills. The most common training needs in this category were for training in research ethics, project management skills and in writing/presentation skills.

In terms of the delivery of training, the importance of combining methodological training with real life experience of conducting research was identified in relation to both qualitative and quantitative research. Master classes were viewed as appropriate means of providing this from of training. Web-based learning was identified as important in order to enable participants to access training at the level that was appropriate to them. One respondent also noted that the best way of providing training was for researchers to learn 'on-the-job' through placements.

There is a need to combine courses with hands on experience in the field

The intricacies of chosen methods need to be explored through experience-based workshops led by people who can give field-based case studies of research

4.1.2.5.3 Summary

We found that respondents were generally rather traditional in the areas that they identified as training needs. Respondents identified training needs most frequently in relation to traditional qualitative and quantitative methods of data collection and analysis rather than innovative and developing areas. Respondents also tended, in the

main, to identify rather general topics/areas of training needs (e.g. ‘statistics’) rather than specific aspects of a methodological approach. Training in general research and transferable skills were only rarely identified as training needs.

A number of topics and issues emerged from the analysis of individual and perceived general training needs across the course of individuals’ careers. The training needs identified can be summarised into the following areas (these are not listed in priority order):

- Basic/intermediate statistics for researchers new to statistics and/or to refresh skills learnt in the past
- advanced statistics, especially modelling
- longitudinal analysis
- software to analyse quantitative data
- CAQDAS and the analysis of qualitative data more generally
- interviewing techniques
- econometric methods
- provision of training focusing on substantive areas or using participants’ own data.

4.1.3 Researchers' training preferences

The results on training preferences are presented for the whole group of researchers and for the researchers according to their position. This classification was deemed interesting in order to verify whether researchers differed in their preferences according to their position of seniority. Group 1 represents the students and junior researchers and Group 2 represents the senior researchers, professors, readers, heads of unit and directors (the sample characteristics of both Groups are presented in Table 1.3).

4.1.3.1 Accessing information

More than half of researchers said they find out about training courses via newsletters (51%; n=356), followed by websites (40%; n=281), emails (38%; n=263) and other sources (21%; n=148) (Figure 1.3). Other sources included: departmental mailing lists and administration, circulars, personal contacts and the ESRC website.

The most frequently mentioned websites were the Social Sciences Information Gateway (SOSIG) (14.5%) and the NCRM website (14.5%), followed by the RMP website (13%) and 'other' websites (13%) (Figure 1.4). Other websites included: Essex Summer School, ESRC website, the CAQDAS Project at the University of Surrey, Institute of Education, Departmental and University websites, Google, the Cathie Marsh Centre for Census and Survey Research (CCSR), the CASS, the Institute for Development Policy and Management (IDPM), the Political Studies Association (PSA), the Bayesian methods for combining multiple Individual and Aggregate data Sources in observational studies (BIAS) node of NCRM, and the International Sociological Association (ISA).

Figure 1.3: Sources of information about forthcoming training events among researchers

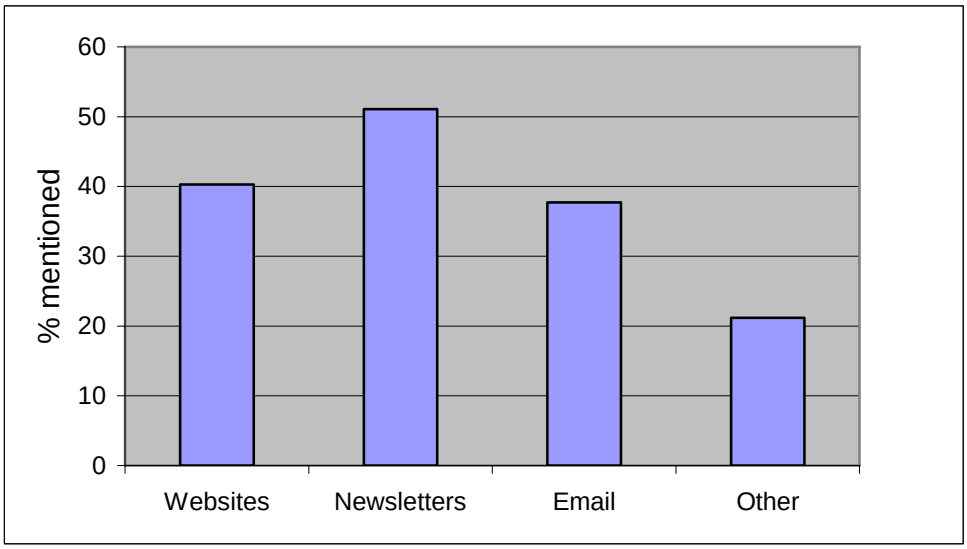
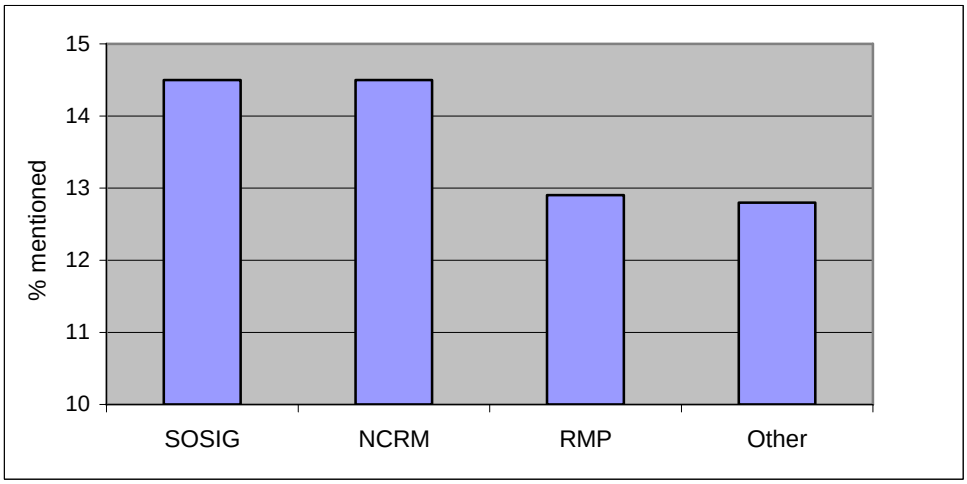
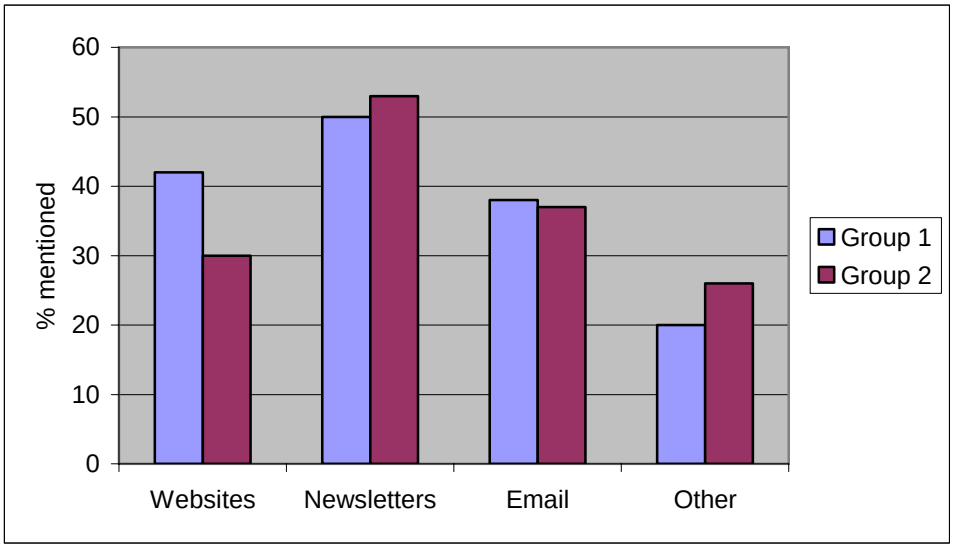


Figure 1.4: Websites as a source of information accessed by researchers



Members of both Group 1 (students and junior researchers) and Group 2 (senior researcher and professors, readers, heads of unit and directors) reported use of websites, email, newsletters and other sources of information about forthcoming training events. Websites were slightly more likely to be consulted by junior researchers and PhD students (42%; n=248) compared to senior researcher, professors, readers, head of unit and directors (30%; n=24) (see Figure 1.5).

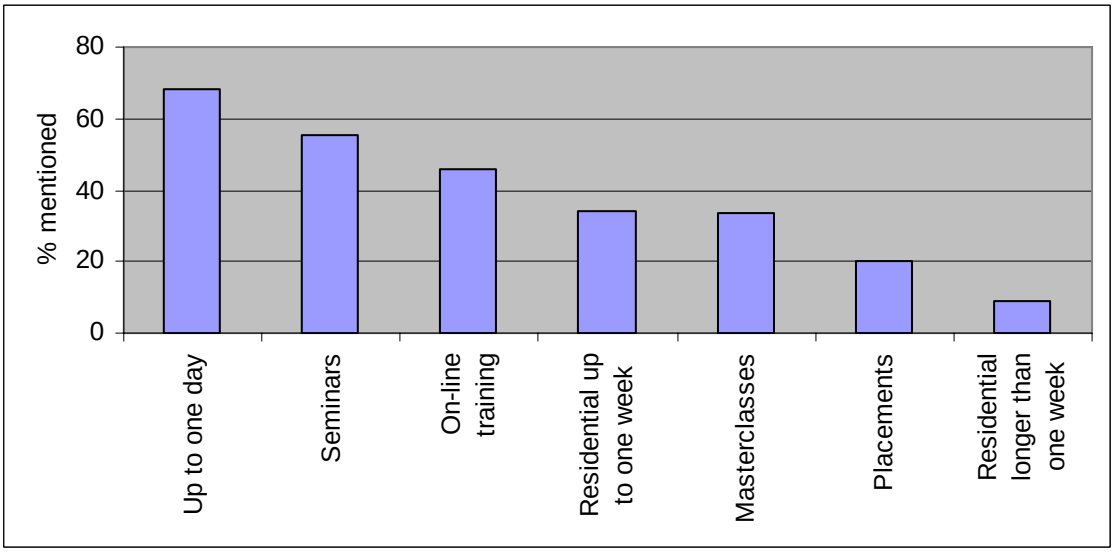
Figure 1.5: Sources of information about forthcoming training events among Group 1 and Group 2 of researchers.



4.1.3.2 Type of events

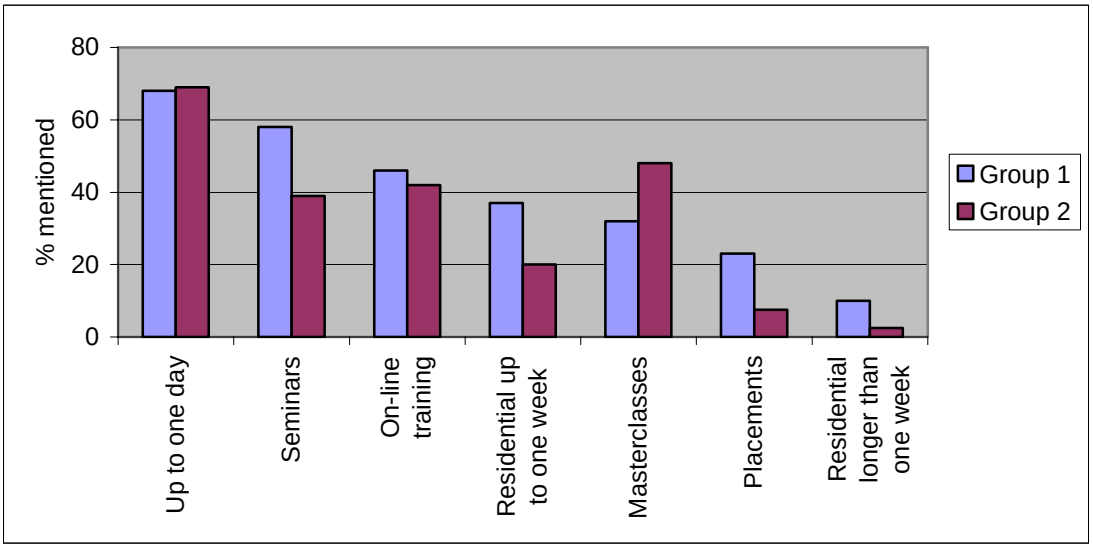
The majority of researchers (68 %; n=475) said they would find training courses of up to one day the most useful, followed by seminars (56%; n=387) and on-line training (46%; n=321) (see Figure 1.6). Placements and residential courses for longer than one week were considered to be the least useful types of training.

Figure 1.6: Types of training considered most useful by researchers



Both groups 1 (students and junior researchers) and 2 (senior researchers and professors, readers, head of units and directors) perceived similar types of training as useful to them (Figure 1.7); however, a few differences could be observed. Group 2 was more likely to consider master classes as useful (48%; n=39) compared to group 1 (32%; n=188). Group 1 considered seminars, residential courses of up to one week and placements as more useful compared to Group 2.

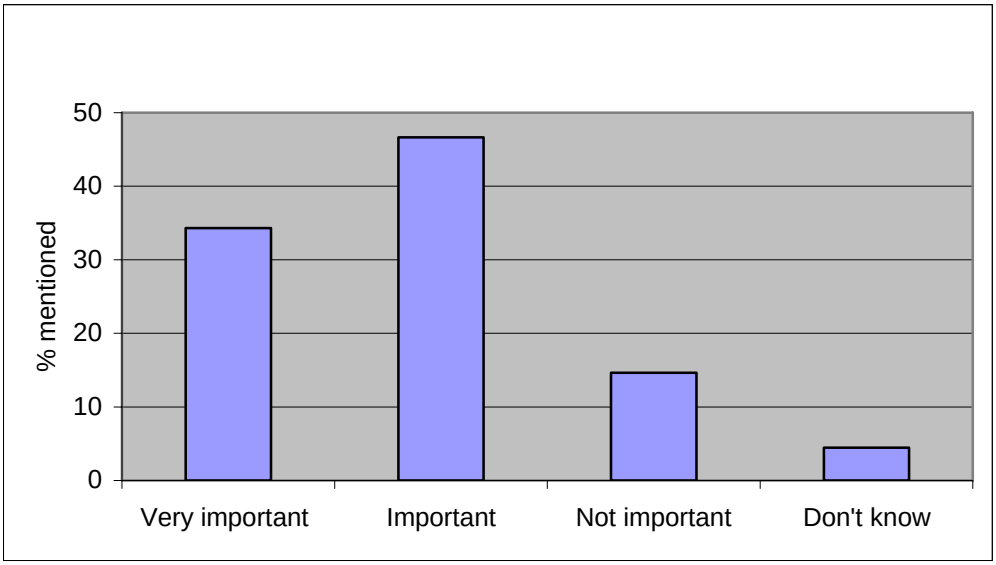
Figure 1.7: Types of training considered useful by Group 1 and Group 2



4.1.3.3 Location and level of training

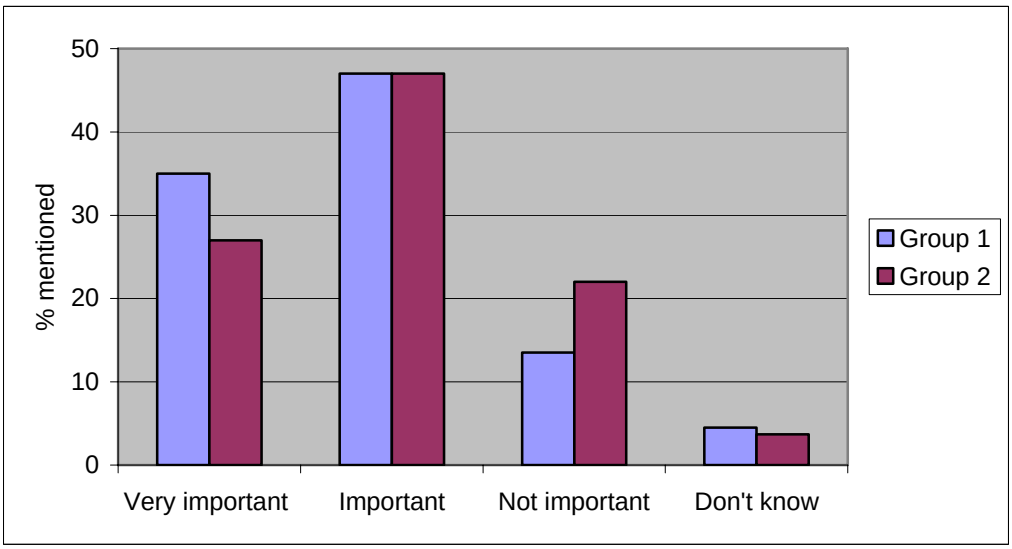
Most researchers (79%; n=564) thought that the availability of training in their region was 'very important' or 'important', 15% said it was 'not important', and 4% 'did not know' (Figure 1.8). People's region did seem to affect whether they thought training in their region was important or not. The majority (71%; n=5) of people from Northern Ireland said that the availability of training in their region was 'very important' whereas about 30% of researchers in the other regions thought training was 'very important'. Researchers from the Midlands were more likely to think that regional training was 'not important' (28%; n=29) as compared to 12% of the researchers from the other regions.

Figure 1.8: Importance of regional training courses



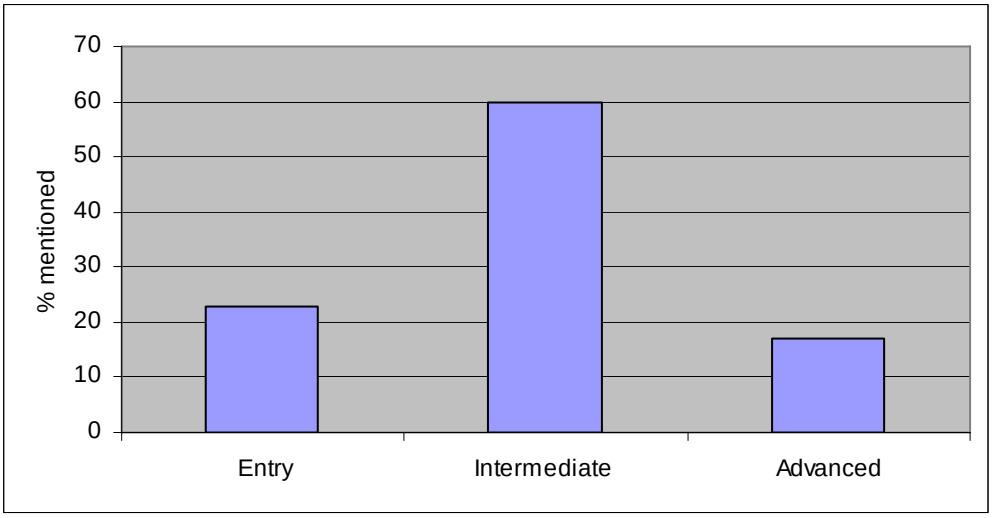
The vast majority of researchers in both groups 1 and 2 thought the availability of training in their region was ‘very important’ or ‘important’. However, respondents in Group 2 (professors, readers, head of units and directors) were more likely to report that training events in their region were ‘not important’ and less likely to consider them ‘very important’ as compared to respondents in Group 1 (students and junior researchers) (Figure 1.9).

Figure 1.9: Importance of availability of training in the region considered by researchers in Groups 1 and 2.



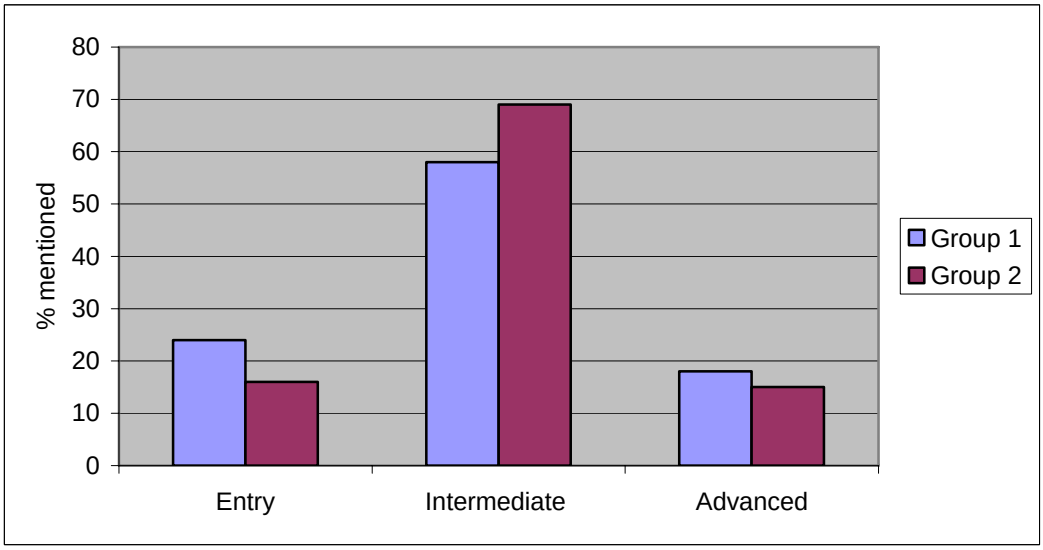
The majority of researchers (60%; n=412) perceived the greatest need for training at the intermediate level (some prior knowledge required); 23% thought that most training was needed at entry level (no or almost no prior knowledge required) and 17% thought this was the case for the advanced level (specialised prior knowledge required) (Figure 1.10). Approximately half of the researchers reported to have participated in a methodological training outside their institution.

Figure 1.10: Level of training at which researchers perceive the greatest need



Both Group 1 and 2 consider the intermediate level the most important (Figure 1.11).

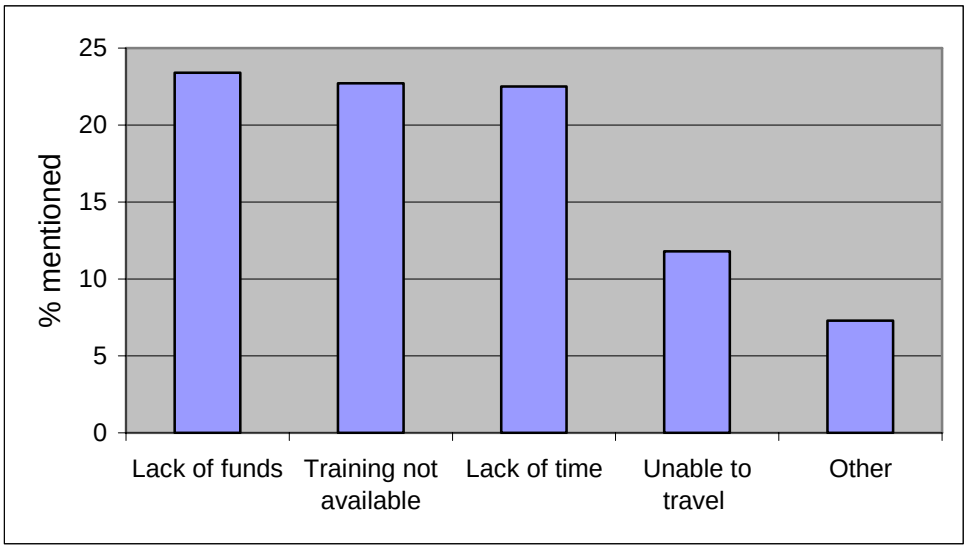
Figure 1.11: Level of training at which researchers in Groups 1 and 2 consider training most needed



4.1.3.4 Access to training events

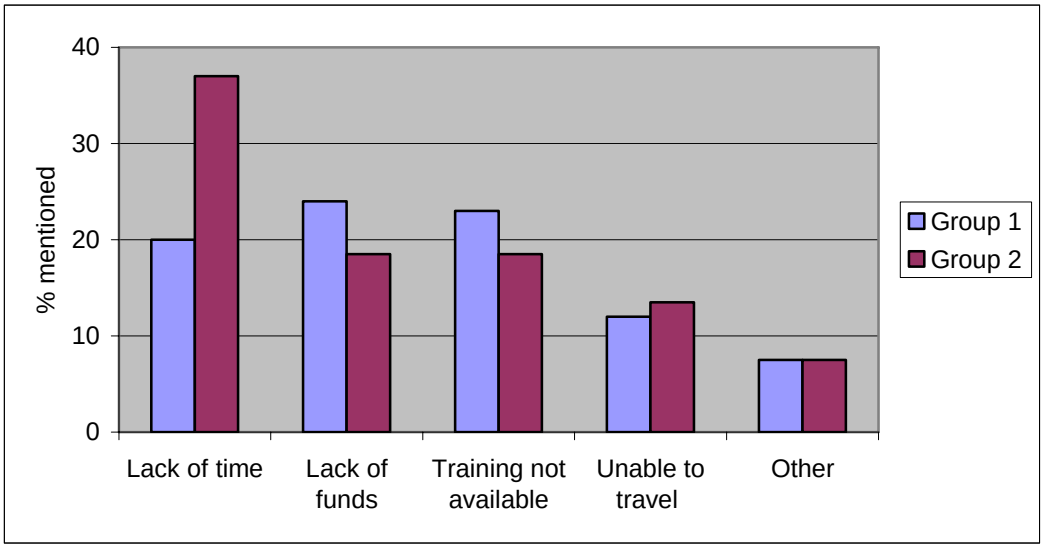
Just over half (51 %; n=355) of researchers said there had been occasions where they had identified methods-related training needs, but had not been able to access the training. 'Lack of time' (23%; n=157), 'lack of funding' (23%; n=163) and 'training not available' (23%; n=158) were the main reasons for lack of access to perceived training needs (Figure 1.12). The remaining researchers gave 'unable to travel' (12%; n=82) or had 'other reasons' (7.5%; n=51) for the lack of access to training courses.

Figure 1.12: Reasons for lack of access to training among researchers



Both groups reported to have experienced a need for training but had not been able to access the training. Reasons for this varied between the two groups of researchers (Figure 1.13). Group 2 was more likely to report 'lack of time' (37%; n=30) as compared to Group 1 (20%; n=119). Group 1 was more likely to report 'training not available' (24%; n=135) and 'lack of funds' (24%; n=140) as compared to Group 2 (18%; n= 15 in each category).

Figure 1.13: Reasons for lack of access to perceived training needs among the researchers in Group 1 and Group 2



4.1.4 Summary

In interpreting the findings of the researcher survey, it is important to note that respondents comprised primarily research students and junior researchers (85% of respondents) and that almost a third of respondents came from the disciplines of sociology or psychology.

In terms of training needs, respondents identified fairly traditional methods of qualitative and quantitative data collection and analysis rather than innovative and developing areas. In addition, the training needs they identified tended to be in general, broad areas (e.g., 'statistics') rather than specific methods (e.g., 'multi-level modelling'). A further observation is that while some respondents (particularly students and junior researchers) identified a need for skills in a range of methods, it was unusual for respondents to identify a need for training in mixed methods research.

These data indicate a tendency from training needs in qualitative methods at the PhD level to advanced quantitative methods at senior levels; students identified their training needs to be predominantly in qualitative data collection and analysis, junior researchers identified their own needs to be in both qualitative and quantitative

approaches and senior researchers identified their training needs to be almost entirely in advanced statistical methods. In relation to the methods respondents perceived to be training needs among the social science community (in contrast to their own needs), there was an even stronger tendency towards quantitative methods. Training in quantitative methods was identified as most needed in relation to advanced statistics, however, a proportion of respondents identified a need for training at a basic level. There was also a strong demand for training in interviewing techniques and skills among students and junior researchers (and interestingly also among professors/heads of departments).

The focus on training needs in qualitative methods among PhD students is reflected in the methodological approaches/methods used by these respondents in their PhDs; the majority of PhD respondents were using qualitative approaches. It appeared that the students' need for training in these qualitative approaches was not wholly met by their institution. The need for training in the analysis of qualitative data and in particular in the use of CAQDAS was frequently identified.

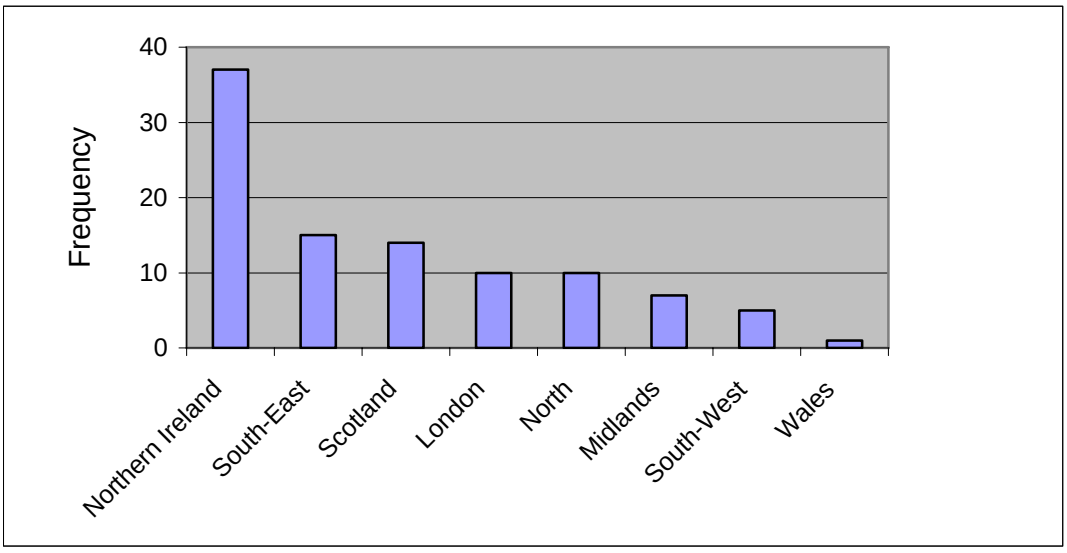
In relation to the delivery of training, respondents found out information about training from a range of sources, most commonly, newsletters, websites and emails. Training courses of up to one day's duration were the preferred type of training event. However, there was also support for on-line training. Placements and residential courses were not widely supported. There was strong support for regional training, especially among respondents from Northern Ireland. Respondents identified the greatest need for training to be at the intermediate level. Lack of time and funds and the availability of appropriate training courses were the main reasons identified for being unable to access training in the past. Lack of time was a primary reason for senior researchers being unable to access training and lack of funding was the primary reason for junior researchers being unable to access training.

4.2 NCRM events participants' survey

4.2.1 Sample characteristics

The NCRM events survey was completed by 99 respondents. The majority (n=94) were people who participated in the events organised by the NCRM; 5 filled in the questionnaires on-line. Among them there were 55 female and 42 male participants (gender was not recorded in two cases) whose ages ranged between 23 and 64 years of age. The vast majority was based at a university or college (82%; n=82), the remaining were from a governmental or public organisation (12%; n=12), a voluntary organisation (n=2) or other organisation (n=3). The largest group were from Northern Ireland (37) (a NCRM road-show event was organised in Northern Ireland and most of the participants filled in the questionnaire). The remainder were from the South-East (15), Scotland (14), London (10), the North (10), the Midlands (7), the South-West (5) and Wales (1) (Figure 2.1).

Figure 2.1 Regions of origin of the people who participated in the NCRM events or filled in the NCRM questionnaire on-line.

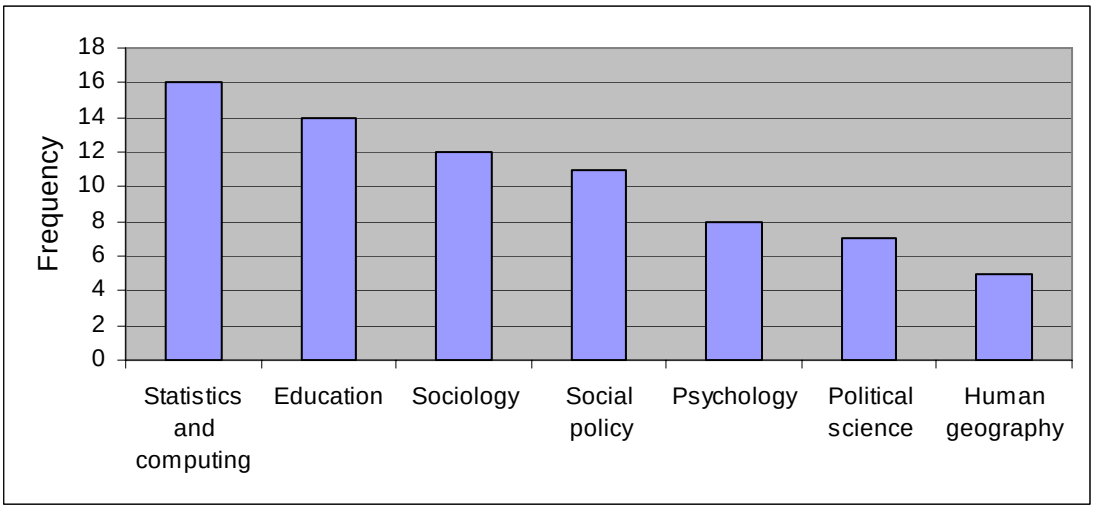


The positions of the respondents in this survey are summarised in Table 2.1. Almost half of the participants were PhD students (n=41) of whom 28 were full time and 13 part-time. The same number of people (n=41) reported being involved with training or supervision. Respondents were from different disciplines, with the majority from statistics and computing, education and sociology. The disciplines reflect partly the types of training events the NCRM has held during this period, with several events focussed on quantitative and statistical methods. The remainder of responses came from social policy, psychology, political science and international studies and human geography (Figure 2.2).

Table 2.1 Positions occupied by the people who attended the NCRM events

Position	**%**
Student	26
Junior researcher	40
Senior researcher	13
Professor/reader/Head of unit	8
Other	13
TOTAL	**100**

Figure 2.2 Discipline affiliations of the people who attended the NCRM events



4.2.2 NCRM events participants' training preferences

Figure 2.3 summarises the results for the types of training the people who attended NCRM events considered most useful, compared with the researcher survey. As with the researcher survey, the vast majority of the respondents of the NCRM events participants' survey (72%) thought training courses for less than one day and seminars (60%) were the most useful type of training. Placements (20%) and residential stays for longer than one week (8%) were considered the least useful types of training.

The majority of the respondents (58%) found out about training courses through websites, 50% through email, 29% through newsletters and 16% through other sources (Figure 2.4). One quarter (27%) reported having consulted the NCRM website, 19% had consulted the RMP website and 15% the SOSIG website. Other mentioned websites included: European Consortium for Political Research (ECPR) Essex, the Social Research Association (SRA), the British Sociological Association (BSA), the National Institute for Regional and Spatial Analysis at the National University of Ireland (NIRSA), Economic and Social Data Service (ESDS), Google and University websites.

Figure 2.3: Type of training most useful to the people who attended NCRM events compared to the researchers

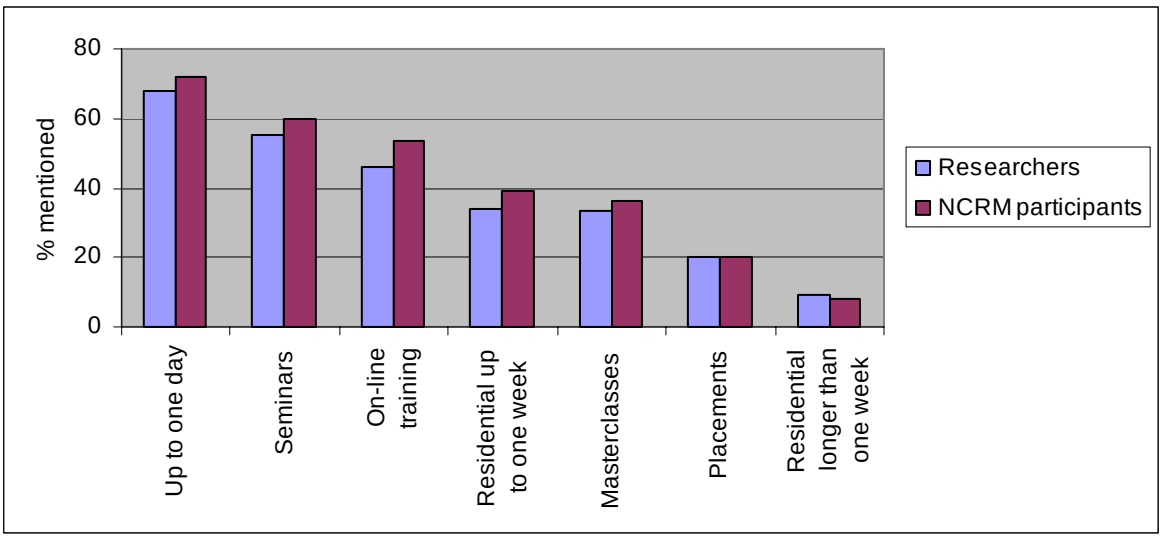
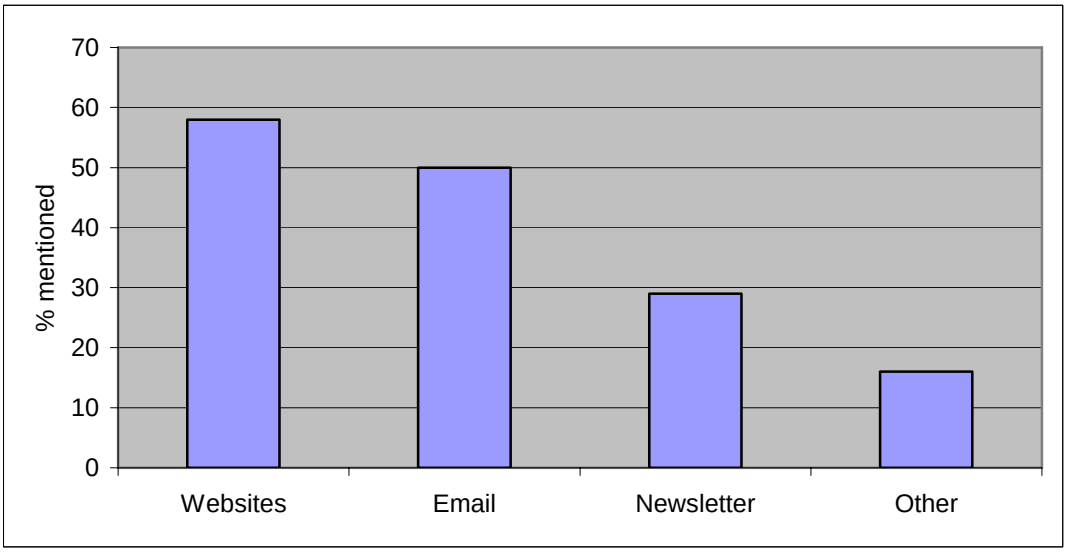
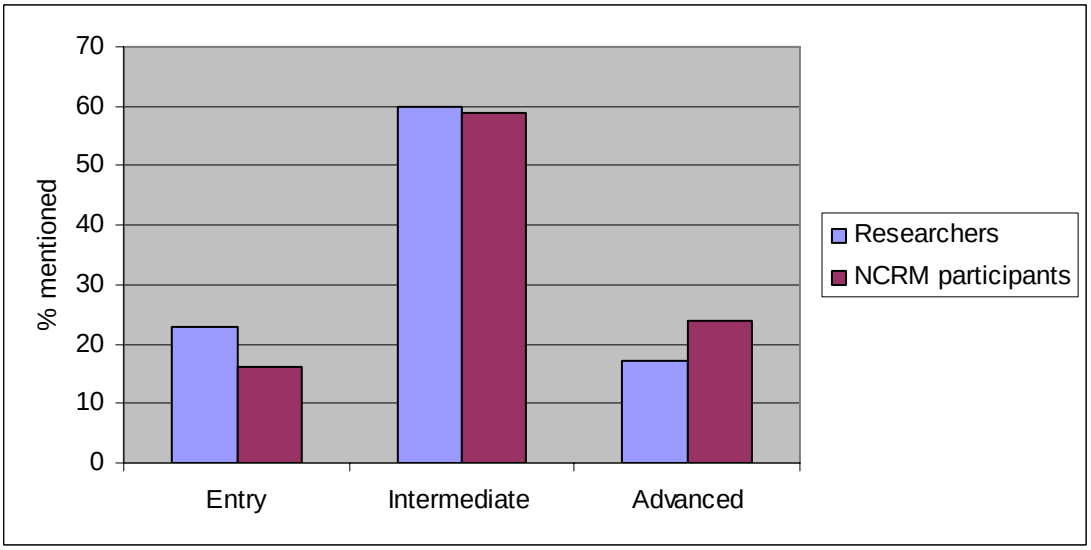


Figure 2.4 Source of information of forthcoming training events among people who assisted an NCRM event



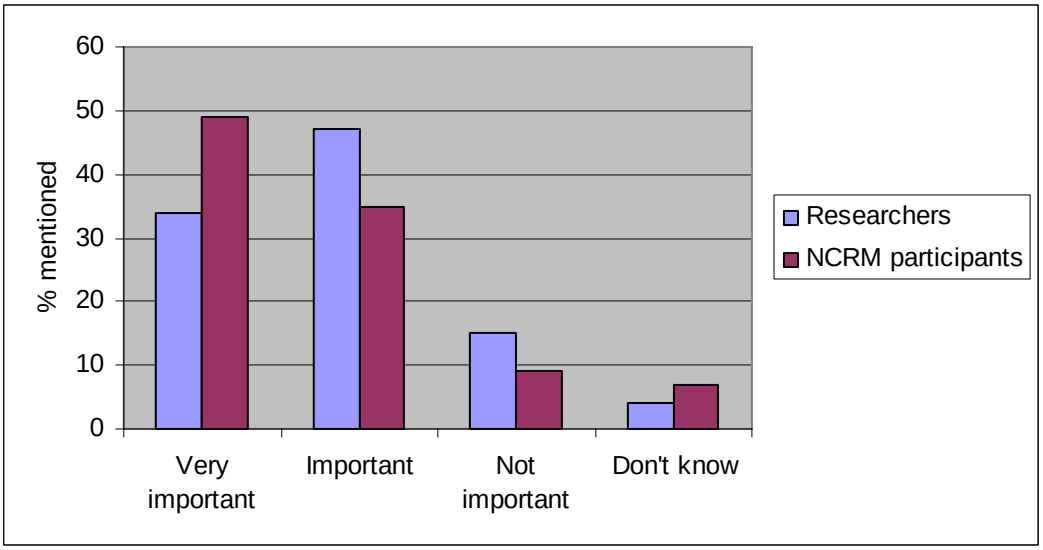
As with the researchers survey, the majority of the 'event participants' perceived there to be a need for training at the intermediate level; however, event participants were more likely to see a need for training at an advanced level compared to the researcher survey respondents (Figure 2.5).

Figure 2.5: Level of training perceived by researchers and event people at which there is the greatest need for training



A small number of people (n=11) reported to have experienced a problem of access to a perceived training need. Among them 6 reported 'lack of funds', 5 'unavailability of the training course', 4 'lack of time', 3 'unable to travel' and one gave 'other reasons' for lack of access to training. Event participants were more inclined to consider the availability of training courses in their region as 'very important' (49%) as compared to researcher survey respondents (34%); 35% considered them to be 'important', 9% as 'not important' and 7% 'did not know' (Figure 2.6). This finding is likely to be affected by the large proportion of event participants from Northern Ireland.

Figure 2.6 Importance of training events to be organised in the region



Only very few event participants answered the question on which areas of training would be most useful to them. Some of the examples were: advanced statistics-multilevel modelling (n=1), comparative case study techniques with mixed methods (n=1), statistical software (n=1), structural equation modelling and item response theory (n=1) and survey methods and data collection (n=1). Finally, event participants were asked in which areas they perceived there to be the greatest training need among the social sciences community (Table 2.2) (not all respondents answered this question).

Table 2.2: Areas of research methods in which respondents perceived the greatest training need

Area of research methods	Number*
Innovative methodologies, mixed methods	17
Statistics, advanced quantitative	16
Qualitative and quantitative	7
Participatory, action or collaborative research	5
Qualitative analysis	5
Multi- or interdisciplinary research	5
Basic training for practitioners	5
It depends	2
Discourse analysis	1
Software-for qualitative analysis	1
Network analysis	1
Longitudinal analysis	1

*Numbers do not add up to 99 because not all respondents answered this question and more than one research area could be given

4.2.3 Summary

The majority of respondents had attended a NCRM training event (95%) and were students or junior researchers (66%). The majority were from the disciplines of statistics and computing, education, sociology and social policy.

Respondents to this survey identified different and more specific training needs than those identified in the researcher survey. Respondents to this survey identified a need for training in innovative methods and mixed methods; these were only rarely identified in the researcher survey. Advanced statistics were also identified as a training need.

In common with the researcher survey respondents, respondents to the NCRM events survey viewed training courses of less than one day as the most appropriate form of training and placements and residential stays as the least useful forms of training. Respondents identified the greatest need for training to be at the intermediate level

although there was greater support among this group than the researcher survey participants for training at the advanced level. There was strong support for regional training among respondents. Only a minority of respondents to this survey identified problems with accessing training.

4.3 Academic employers survey

4.3.1 Sample characteristics

In total 58 employers replied to this survey. As would be expected, the vast majority of employers (93%%, n=54) identified themselves as based at a university or college; a small number identified themselves as employed at a research institute or organisation (n=2), as based at a governmental or other public sector organisation (n=1) or in the voluntary sector (n=1). The largest number (81%, n=47) were professors, readers, head of units or directors; a further 8 respondents were senior researchers and 3 identified themselves as junior researchers. The employers managed between 0 and 35 staff; almost half of them managed 1 to 3 staff members; 25% managed between 4 and 10 staff and 26% between 10 and 35 staff members. The majority of employers were based in London (34%, n=20) or the South-East (21%, n=12). Of the rest, 8 were based in Scotland, 7 in the North of England, 6 in the Midlands, 4 in the South-West and 1 in Wales (Figure 3.1). No replies were received from Northern Ireland.

Figure 3.1: Percentages of employers represented per region

4.3.2 Training needs according to employers

4.3.2.1 Research skills sought when appointing staff

Respondents identified a range of qualitative and quantitative skills that they sought when appointing research staff. Table 3.1 summarises the skills which were identified by more than one respondent (53 employers responded to this question).

Table 3.1: Skills sought by employers when appointing research staff (n=58)

Skills	**%***
Quantitative	62
Qualitative	29
Software, programming and IT skills	22
Presentation, communication and writing skills	16
Interviewing	13
Survey methods	12
Experimental research methods	10
Systematic thinking and analytical skills	10
Linking theory with methodology	10
Managing data sets	10
General methodological skills	9
Computer languages	5
Literature search and review skills	5
Archival research skills	5
Discourse analysis	5
Research ethics	4
GIS	4
Action research	4

* Percentages do not add up to 100 as more than one skill could be mentioned; percentages are based on the total of 58 employers

The majority of comments related to quantitative skills, particularly survey methods and statistics. A total of 62% of employer respondents identified quantitative skills as researcher skills they sought when making appointments. Specific quantitative skills identified were: use of software and/or programming skills, survey methods, statistics, experimental methods and the management of data sets.

A total of 29% of respondents identified seeking skills in qualitative methods when appointing staff. Specific qualitative research skills identified were: interviewing, discourse analysis and action research.

Additional methods skills sought by a small number of respondents were archival research skills (5% of respondents) and skills in GIS (Geographical Information Systems) (3% of respondents).

While most respondents identified specific skills in relation to quantitative or qualitative methods, a small number (9%) identified the need for general methodological skills across the range of methods, e.g.:

> *Research design skills are a priority, by which I mean the ability to consider a variety of ways of conducting research (data collection, analysis and dissemination) and systematically assessing which is the best in the circumstances. This is the opposite of having a fixed set of skills and applying them relentlessly. Beyond that, I look for an awareness of a wide range of methods of data collection and analysis (qualitative and quantitative) and the ability to deepen skills as required by the project at hand.*

> *[The] ability to operationalise theoretical ideas/questions and match up with appropriate methods.*

> *Combination of qualitative and quantitative and the ability to work with both*

As well as skills in specific or general research methodologies, respondents also identified the importance of general research and transferable skills that they sought when appointing researchers to post. A total of 34% of respondents (n=20) identified

skills that we have categorised under this heading. The general research and transferable skills identified were: writing and general communication skills (n=9); general IT skills (n=6); imagination, creativity and systematic thinking (n=6); literature searching and reviewing skills (n=3); language skills (n=3); project management skills (n=3); and knowledge of research ethics (n=2). The following responses illustrate respondents' comments in relation to these general skills that they look for in making appointments:

> *Critical intellect, broad sympathies, eagerness to learn, self management and intellectual ambition.*
>
> *Knowledge, computer literacy, awareness of ethical issues*
>
> *Literature review; writing up; communication skills and knowledge sharing abilities; ethical awareness; IT (packages) and internet skills*
>
> *Ability to manage a project, write & present is common to all posts*
>
> *I also look for strong expositional skills*

4.3.2.2 Research skills identified as lacking in applicants for research posts

A total of 81% (n=47) of survey respondents identified areas in which they perceived applicants for posts to be lacking in skills. Table 3.2 summarises the skills which were perceived to be lacking by more than one employer.

Table 3.2: Skills identified as lacking in applicants for research posts (n=58)

Skill	**%***
Quantitative	40
Writing skills for publication, presentation	16
Programming and use of software for analysis	9
Bringing theory into empirical work	9
Qualitative	8
Operationalisation of research questions	8
Survey sampling techniques and design	8
Analysing large data sets	8
Combining qualitative and quantitative	5
Interviewing	3
Action research	3
Longitudinal analysis	3
Data entry	3
Non-response	19

*Percentages do not add up to 100 as more than one skill could be mentioned; percentages were based on the total of 58 employers

The majority of respondents who identified a lack of specific methodological skills viewed these skills to be lacking in relation to quantitative research (40%), particularly in relation to knowledge of statistics. The following were typical comments about the skills seen to be lacking in applicants:

Really understanding statistics

Quantitative methods, handling large data sets

We would benefit from more expertise in quantitative methods and stats

A lack of skills in qualitative methods were mentioned by only a minority of respondents (7%). Specific areas mentioned were interviewing and action research.

A minority of respondents (5%) also noted the lack of research skills across different methodological approaches especially in relation to mixed methods research, for example:

> *Perhaps the greatest weakness is in researchers (of all seniority) being only able to think about research within one (or perhaps two) frameworks/ paradigms rather than being fluent in the range of theories and methods*

> *People are often too narrow – qualitative researchers not able to work with quantitative data and vice versa making mixed methods projects very difficult*

In terms of general research skills, 16% of respondents identified writing and presentation skills as lacking in applicants, for example:

> [the ability] to g*ive brief, focused presentations*

> *The ability to disseminate findings to non-academic researchers*

> *Academic writing skills [are lacking] owing to a lack of experience with publication*

> *Writing skills [are lacking] and the ability to define the problem to be researched in a sufficiently precise manner*

4.3.2.3 Areas in which training is most needed

Table 3.3 summarises the areas in which employers thought training was most needed (81% of employers answered this question). Two employers argued *less* training and more hands-on experience was needed.

Table 3.3: Areas in which training is most needed (n=58)

Areas in which training is needed	**%***
Quantitative	50
Qualitative	21
Writing and presentation skills	12
Survey and sampling	10
Programming	10
Practical application of theory and technical skills	7
Combining methods and approaches	7
Interviewing	5
Longitudinal data analysis**	5
Comparative study design	3
Action research	3
Non-response	19

*Percentages do not add up to 100 as more than one skill could be mentioned; percentages were based on the total of 58 employers

** It was not clear whether this referred to qualitative or quantitative longitudinal analysis.

In terms of training needs in relation to research methods, quantitative methods were highlighted by half of the survey respondents (n=29), with survey methods, statistics and the use of software frequently mentioned. Several comments were made in relation to the 'weakness' of training in relation to quantitative skills, e.g,

> *The staff we recruit are generally well trained, but more broadly there is a lack of high grade quantitative skills*
>
> *Specifically at the moment quantitative research is weak*
>
> *There is a dire shortage of properly trained quantitative researchers*
>
> *The lack of competent basic quantitative skills is the most important issue facing UK social science*

Training in qualitative methods was identified less frequently (n=12, 21%) but it was noted by some respondents that training in these skills should not be overlooked in favour of quantitative approaches, e.g.

> *There is a need to appreciate the skills involved in qualitative work – [these are] often overlooked in favour of quantitative skills*

While the majority of training needs identified related to quantitative approaches, the need to train researchers across the range of methods (both qualitative and quantitative) was identified by a minority of respondents (n=4) in order to enable researchers to have a broad understanding of methods:

> *Researchers should have a basic understanding of qualitative and quantitative methods, including research design, although they might specialise in one or the other*

> *The ability to combine qualitative and quantitative approaches*

A small number of respondents identified the need for training in writing and presentation skills (12%), but in general the need for training in general research and transferable skills was not identified. One respondent viewed the focus on these general skills as having been overemphasised:

> *In general I would say they need less rather than more [training]. Let's just say the whole idea of transferable skills has been hugely overplayed.*

4.3.2.4 Training provision

In terms of training provision, there was a general view that employing organisations at University or Department level could (and should) provide *basic* training in research methods and approaches as well as general research and transferable skills.

However, it was noted that the quality of what is provided is variable, being dependent on an organisation's capacity:

> *They tend to cover some of the basics quite well, and should offer training on basic skills and packages (e.g. SPSS) – in practice though the quality varies considerably*

Provision at the PhD level was identified as being generally sufficient. It was noted that institutions should make this training available to contract research staff too in order to enable them to fill gaps in their experience. Training for post-doctoral researchers or researchers at more advanced levels were viewed as more problematic in relation to in-house training due to a lack of resources or the number of people in one organisation who might benefit from training in a specific method. In addition, it was noted that organisations might lack suitably skilled staff to provide such training. Mentorship, on-the-job training and apprenticeship models were noted as appropriate means of training in relation to these groups.

A wide range of research methods topics that might be supported by the ESRC were identified. These ranged from basic courses to more advanced levels in all methodological approaches. Typical comments about the sort of training that should be provided were:

> *It would be helpful for the ESRC to support researchers in making informed and critical choices about research approach on the basis of full knowledge. This implies a wide variety of provision to ensure that the research community is well supported. The need in introductory quantitative methods is clear. There is of course a continuing need for advanced courses across methods.*

However, some respondents noted that ESRC (or NCRM) provision should be at the more advanced and generic level and that Universities should provide basic level training:

> *The ESRC should provide training in any area – but at a high level - individual universities should be able and willing to provide the basics*

I'm not sure how that division of labour should operate between the ESRC and institutions – ideally a researcher should be already trained but in practice the ESRC can better deal with non-standard, cutting-edge, just emerging methods and modes of analysis

Broad ranging provision is only available in a few large HEIs and often at the cost of being somewhat generic across disciplines. A better model is for NCRM to focus on courses across disciplines nationally with more subject specific provision being addressed by other programmes (e.g., TLRP, AERS).

The ESRC should provide training that is more specific than that provided in University staff development courses but with greater general applicability than that provided by the [academic] Department with reference to the data collected for a specific project.

Among the specific forms of training that the ESRC currently or recently provides, the following were identified as valuable: NCRM/RMP courses; Essex summer school; CASS courses; Centre for Micro-data Methods and Practise (CEMMAP) courses; AIM and Business Academy of Management (BAM) courses; and, CAQDAS courses. Seven respondents said that they were unfamiliar with ESRC training courses.

Several employers noted that there were occasions when they had identified methods–related training needs but had not been able to access suitable training for staff. The difficulties identified were: the timing of events (i.e., events did not coincide with researchers' need for training), time limitations within contract research staff's contract to allow for time out to attend courses; lack of knowledge about courses, cost of courses and the fact that such costs are not included in research grants. This latter issue was one raised by several respondents who noted that financial provision in ESRC awards for researcher training would be helpful. These comments illustrate these points:

It is often unclear who is to pay for research training if it has not been budgeted for in the ESRC application.

Inclusion of specific financial provision in ESRC awards for researcher training is a bit of a taboo - implies that you can't find the RAs with the right skills - but in reality if this was an expectation, then it would be to the great advantage of younger researchers and the whole community.

One respondent noted that one way round the difficulty of needing to train researchers with inadequate skills is to allow established academics to buy out their time to conduct their own research:

The ESRC could rethink their own 'model' of employing/training junior researchers to carry out empirical work. This greatly under-emphasises the tacit nature of the skills/experience required to effectively conduct fieldwork especially interviews. It would be better at times to allow lead investigators to buy out their own time to conduct this themselves.

4.3.3 Employers' training preferences

The majority of employers (71%) considered the availability of training courses within their region to be 'important' (41%) or 'very important' (30%); 24% thought they were 'not important' and 5% did not know (Figure 3.2). The comparison with the researchers was deemed interesting here: employers were less likely to find the availability of research training in their region 'very important' or 'important' and more likely to find it 'not important' (Figure 2.2). Most respondents viewed short courses or workshops as the most appropriate format for training. The format of training that employers identified as most appropriate for the ESRC to support is summarised in Figure 3.3.

Figure 3.2: Importance of the availability of training courses in their region according to employers and compared to researchers.

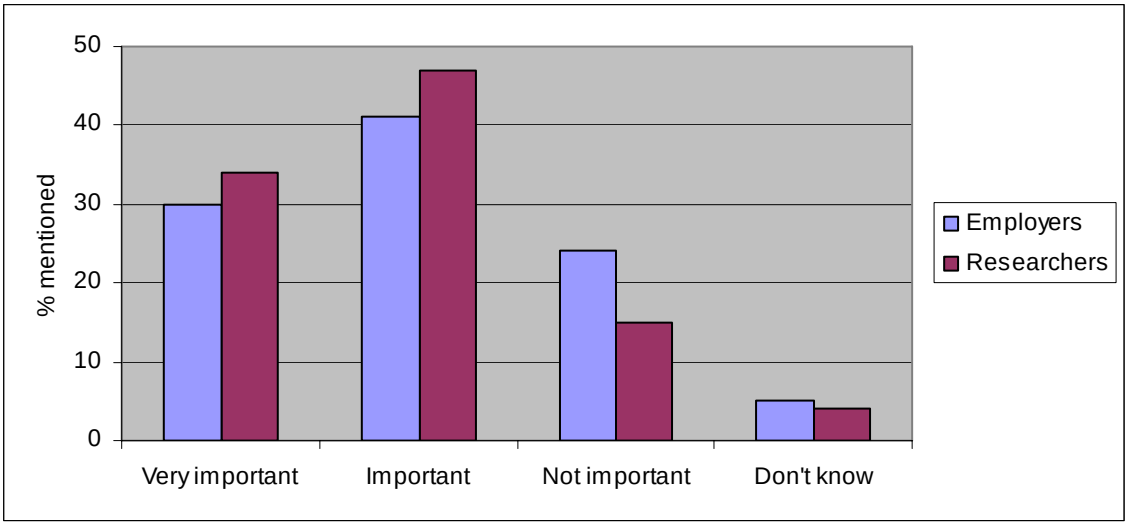
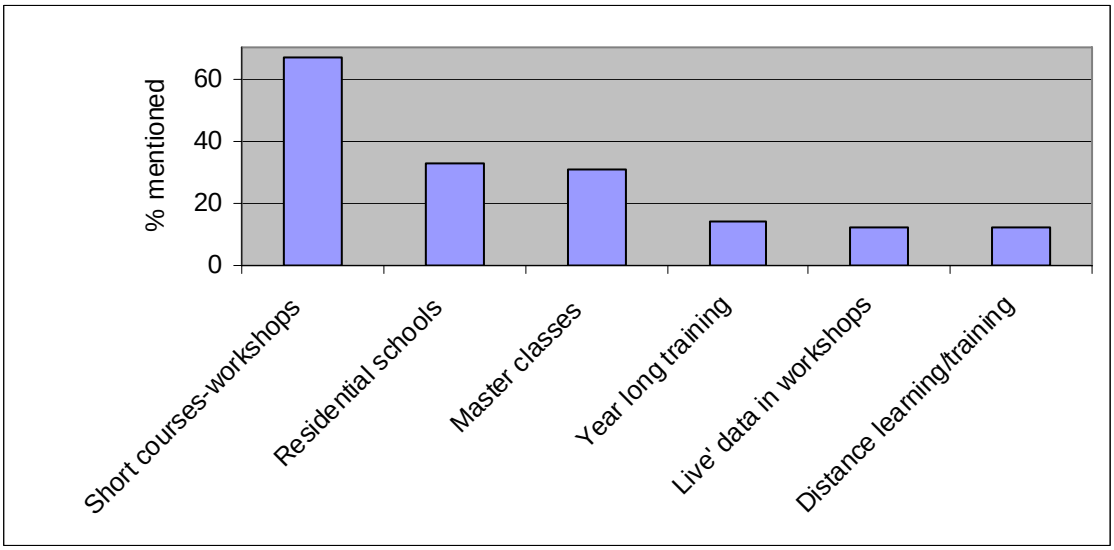


Figure 3.3: Format of training provision employers' view as appropriate for the ESRC to support.



4.3.4 Summary

The survey conducted with academic employers of research staff indicated that these employers view the greatest need for training to be in quantitative methods at a variety of levels with training in statistics, survey methods and the use of software

being the most frequently identified needs. While over a quarter of respondents noted that they sought skills in qualitative methods when appointing research staff only around one-fifth of respondents identified a need for training in this area. General research and transferable skills were skills that were widely sought in appointing researchers to posts but there was little support for training in these skills, other than in relation to writing and presentation skills. Most respondents noted that research methods training supported by the ESRC through programmes such as NCRM should be at an advanced level and focus on generic skills, with Universities providing basic level training and other initiatives providing discipline-specific training. Various difficulties in accessing training were identified with the lack of resources and time written into research grants for training being raised as particular issues.

4.4 Analysis of job advertisements for academic research posts

4.4.1 Introduction

This study was undertaken to complement the data from the academic employers' survey. Its aim is to identify the research skills that employers view as necessary for posts in social and economic research with the aim of identifying training needs. The study comprised a content analysis of job specifications for all posts for social and economic researchers in academic settings advertised in The Education Guardian, Times Higher and the website, www.jobs.ac.uk, over a four week period (see section 3.4 for the inclusion criteria). Given that the skills sought for posts are likely to differ according to the grade of the post, these data are presented separately for research assistant posts, research fellow/associate posts and senior/principal research fellow posts.

4.4.2 Disciplines of posts

A total of 115 posts were advertised during this period. Of these, 37 were for research assistant posts, 66 were for research fellow/associate posts and 12 were for senior/principal research fellow posts. These posts were located across a range of disciplines. As Table 4.1 shows, the discipline with the largest proportion of research assistant posts was psychology (32%, n=12) and the discipline with the largest proportion of research fellow posts was Education (24%, n=16). Overall Psychology accounted for 18% of all posts advertised during this period and Education accounted for 17%. Interestingly, 16% of posts were advertised from disciplines outside of the social sciences, most notably medical sciences (9% of all posts). This indicates the extent to which disciplines outside of the social sciences, especially in health, medical and related areas, value the skills of social scientists.

Table 4.1: Disciplines of posts advertised

Discipline	Research Assistant	Research Fellow	Senior Research Fellow	Total
Economics	1	1	2	4
Education	4	16		20
Human Geography		6		6
Linguistics		3	3	6
Management & Business Studies	5	3	3	11
Political Science & International Studies		2	2	4
Psychology	12	9		21
Social Policy & Health studies	3	6	2	11
Social work		2		2
Sociology	1	2		3
Statistics		1		1
Interdisciplinary Social Science Units	2	5		7
Disciplines outside Social Sciences*	9	10		19
Total	37	66	12	115

*includes Arts and Humanities (1 post); Engineering (2 posts); Medical Sciences (10 posts); Sports Science (2 posts); University Academic/Corporate Services (4 posts).

4.4.3 Qualifications and experience sought

Not surprisingly, the level of qualification sought, reflected the level of post advertised with 54% of research assistant posts seeking applicants with degrees only, 80% of research fellow/associate posts seeking applicants with Masters or PhDs and 83% of senior/principal research fellow posts seeking applicants with PhDs.

The level of experience required for posts similarly reflected the level of post. However, in each case a relatively large proportion of posts expected applicants to have some previous experience in research or other related activity, with experience in communicating research or general writing skills featuring highly (see Table 4.2).

Table 4.2: Experience required for posts

	Research Assistant	**Research Fellow**	**Senior Research Fellow**
Posts for which some previous experience is required	18 (49%)	48 (73%)	11 (92%)
Previous Research Experience Required	17	38	5
Publication/writing/ presentation record Required	6	20	8
Other Experience Required*	2	7	7

*Other experience required included teaching (in 4 cases) and experience of applying or gaining funding (in 12 cases).
NB. These categories are not mutually exclusive and some posts identified experience required in relation to more than one field.

4.4.4 Research skills sought

In relation to research skills sought, the data from the further particulars were categorised in relation to the skills sought in broad methodological approaches (i.e. qualitative, quantitative or both) and then the more specific skills being sought in

relation to these specific approaches (e.g., interviewing, focus groups, data management, SPSS).

For those posts that identified research skills (103 posts), half sought applicants with skills in quantitative methods (50%). This figure in part reflects the large number of research assistant posts in psychology (32% of all research assistant posts) where specific skills in quantitative methods were sought. Nevertheless, it is interesting to note that in each job grade it is quantitative skills that are most frequently sought. Only 16% of posts overall sought applicants with skills in qualitative methods and none of the posts for senior/principal research fellows during this period sought applicants with qualitative skills. However, an additional 14% of posts did seek applicants with skills across qualitative and quantitative methods. An additional 16% of all posts sought 'general research skills' but did not specify skills in a particular approach (see Table 4.3).

Table 4.3: Broad Research Skills Required Per Post

	Research Assistant	**Research Fellow**	**Senior Research Fellow**	Total
Quantitative skills	25 (68%)	20 (30%)	6 (50%)	51 (44%)
Qualitative skills	5	13 (20%)	0	18 (16%)
Both qual and quant skills	4	12 (18%)	0	16 (14%)
General research skills	3	13 (20%)	2	18 (16%)
Research skills not specified	0	8 (12%)	4	12 (10%)
Total	37	66	12	115

In relation to specific research skills sought within quantitative approaches, skills and knowledge of survey methods, statistics and the use of SPSS or other software to analyse quantitative data were sought. For research assistant posts, skills in data coding and entry were also sought in a significant proportion of posts (see Table 4.4). In relation to specific research skills sought within qualitative approaches, skills in

data collection methods (interviews, observation and focus groups) predominated with a significant proportion of posts seeking applicants with skills in qualitative analysis, including computer assisted qualitative analysis (see Table 4.5).

Table 4.4: Specific Quantitative Skills Required

	Research Assistant	Research Fellow	Senior Research Fellow
Statistics	12 (32%)	16 (24%)	2
Data coding/entry	11 (30%)	6	
Use of Software/Programmes (SPSS, Access, Excel)	10 (27%)	16 (24%)	5
Survey methods	10 (27%)	6	
Quantitative analysis	7 (19%)	9	
Experiments	6 (16%)	8	2

NB. Percentages are of all posts in each job grade, not just those posts for which quantitative skills were sought.

Table 4.5: Specific Qualitative Skills Required

	Research Assistant	Research Fellow
Interviewing, Focus groups and observation	9 (24%)	18 (27%)
Qualitative analysis	9 (24%)	13 (20%)
CAQDAS	2	10 (15%)
Visual methods (photo, video etc)	2	3

NB. Percentages are of all posts in each job grade, not just those posts for which qualitative skills were sought.
No qualitative skills were required in relation to the senior/principal research fellow posts.

Some general research and transferable skills were identified as necessary skills in almost all posts (see Table 4.6). In line with the ESRC Postgraduate Training Guidelines, general research and transferable skills have been categorised as communication skills (skills in writing and oral presentation), general computing/IT skills, teamwork skills, organisational skills and project management skills.

Computing/IT skills were identified as necessary in 80% of posts and teamwork and communication skills were identified as necessary in over 70% of posts. Overall, project management skills were not widely identified except in relation to more senior posts.

Table 4.6: Number of Posts in which General and Transferable Skills Required

	Research Assistant	Research Fellow	Senior Research Fellow	Total
IT skills	22 (59%)	63 (95%)	7 (58%)	92 (80%)
Teamwork skills	28 (76%)	54 (82%)	8 (67%)	90 (78%)
Communication skills	25 (68%)	51 (77%)	6 (50%)	82 (71%)
Organisational skills	24 (65%)	43 (65%)	9 (75%)	76 (66%)
Project Management skills	2 (5%)	19 (29%)	10 (83%)	31 (27%)

4.4.5 Summary

The content analysis of job advertisements for academic research posts indicated that skills in quantitative methods are widely sought across all grades of research posts. Specific skills required related primarily to statistics, data coding/entry and use of software to analyse quantitative data. Qualitative skills were explicitly sought in only a minority of posts overall although around a quarter of posts for research assistants and research fellows sought skills in qualitative data collection and analysis. Transferable skills were widely sought, especially in relation to general computing/IT skills, teamwork and communication skills.

Academic Employers Survey and Content Analysis of Job Descriptions: Overall Summary

These two sources of data indicate that academic employers seek researchers with skills primarily in quantitative methods and that there is support from employers for more training in this area. Specifically, training in statistics and the use of software

programmes to analyse quantitative data are highlighted. Both the employers' survey and analysis of research posts indicated that qualitative skills are less sought and, in the employers' survey, these skills were not identified as lacking in applicants for posts. General research and transferable skills appear widely sought by employers. However, there is limited support for training in these areas, other than in writing and presentation skills.

5. **Discussion**

The discussion will be conducted in two sections: the first will relate to training needs in terms of skills and competencies and the second section will relate to training delivery. In the first section, issues relating to post-graduate students are discussed separately.

5.1 Training Needs: Overview

The researcher survey indicated an increasing demand for training in quantitative methods, relative to qualitative methods, with increasing seniority. Thus, researchers identified a need for training in qualitative methods of data collection and analysis at the start of their careers (especially at PhD level), but there was a recognition of an increasing need for skills in advanced quantitative methods as their career progressed through to senior level. This was reflected in researchers' responses to their individual needs and in relation to their perception of the needs of the social science community as a whole. Interestingly, at professorial level the need for skills in advanced quantitative methods was less clear. The tendency towards quantitative skills was reflected in the survey of academic employers and analysis of job advertisements which both indicated that academic employers seek researchers with skills primarily in quantitative methods and that academic employers support more training in this area.

This appears an important tendency which has implications for training provision. A number of factors might account for it and these need consideration. First, in terms of our sample, respondents were drawn from researchers working on ESRC projects or ESRC Fellowship holders and, in the case of employers, principal investigators of large ESRC grants and directors of ESRC Programmes or Centres. The academic employers' survey, and perhaps to a lesser degree the researchers' survey, is likely to comprise a significant proportion of quantitative researchers both because quantitative research tends to attract larger grants than qualitative research and, given the ESRC's concern about the lack of quantitative research, that awards are made more frequently to quantitative projects, programmes or centres. Thus these findings may, to some extent, reflect the interests and disciplines of those who receive funding,

especially at the senior level. A second factor influencing this tendency may be the increasing emphasis on evidence based policy in social research, especially in practitioner-based disciplines such as education and social work, and the importance the ESRC place on knowledge transfer, user involvement and the focus of research on issues of importance to society. While these issues do not preclude the use of qualitative methods they do encourage large scale research (including meta analysis and synthesis of evidence) and discourage 'blue skies' research, both factors which favour the use of quantitative and mixed methods approaches. Nevertheless, even with these caveats, the need for training in quantitative methods is fairly clear and supported by the content analysis of job advertisements.

Researchers, and to a lesser degree academic employers, identified training needs in fairly broad, general topics (e.g., 'statistics', qualitative analysis', 'interviewing') and, in the main, in traditional areas of methods. Respondents who completed questionnaires at NCRM events were more specific and expressed an interest and need for training in innovative and developing methods. This second group of respondents can be categorised as having a specific interest in methods and so this finding is not surprising but it does indicate that the mass of researchers feel they lack skills in traditional methods (at a range of levels) and are either unaware or uninterested in training in more innovative methods. It may be the case that researchers are, in general, not aware of innovative developments in research methodology; clearly they cannot identify topics as training needs if they do not know they exist. Furthermore, if researchers feel they lack skills in basic, traditional approaches they are unlikely to be able to make use of training in innovative methods that builds on these basic approaches (such as multi-level modelling for example). However, in interpreting this finding it is important to bear in mind the design of our questionnaires which may have accounted for the lack of specificity and identification of innovative methods. A more structured questionnaire listing different methods would have resulted in greater specificity of methods being identified but we wanted to enable respondents to identify the issues of importance to them rather than to force responses in particular categories.

The researcher survey also indicated that researchers, especially at more junior levels, recognise the need for training in a range of methods. Nevertheless, it was very

unusual for researchers to identify themselves as working across a range of methods or of using mixed methods in their research. Similarly it was unusual for the academic employers to identify a need for researchers to have skills across a range of methods. Researchers appeared to view themselves as qualitative researchers or quantitative researchers but rarely both. Training and developing researchers to work across a range of methods is likely to involve breaking down a range of discipline-specific and cultural barriers as well as providing accessible training. This may be particularly the case at more senior levels. This point is reflected in the observations of May (2005) and Rees et al (2004) who both note that the social context of research militates against researchers developing skills across a range of methods because of factors such as time, financial resources and the pressure to develop specialised and focused research areas engendered by the Research Assessment Exercise.

Some specific issues did emerge from the researcher survey as common training needs. These were: interviewing; qualitative analysis (including CAQDAS); statistics/quantitative methods (at all levels); use of statistical software; and, longitudinal data analysis. The emergence of interviewing as a major training need for PhD students, junior researchers and professors and, to a lesser degree, longitudinal data analysis may have been influenced by the fact that these two methods were given as examples in relation to one of the open ended questions on the survey. Nevertheless, the need for interviewing skills at more junior levels (especially among PhD students) was reflected in their responses to open ended questions and would seem to reflect a real need (this is discussed below on the section on post-graduate students). It is unclear why interviewing was identified as a personal training need by 26% of professors, directors or heads of units in the researcher survey. The widely expressed need for training in qualitative data analysis is discussed in the section on post-graduate students below.

In terms of quantitative analysis and statistics, training appeared to be necessary at all levels. Junior and senior researchers stressed the need for training for themselves at advanced levels but all groups (including academic employers) recognised the need for training at basic levels for the social science community as a whole. Of course, we can not be clear what respondents mean by the categories of ‘basic’, ‘intermediate’ and ‘advanced’; one person’s notion of an advanced course may be another person’s

notion of an intermediate one. Specific areas of quantitative methods identified in both the researcher and academic employers' survey were: use of statistical software; modelling; and, survey methods.

Tranferable and general research skills were not identified as training needs in the researcher survey. In addition, respondents focused primarily on research methods that were largely divorced from their theoretical or conceptual underpinnings. This may have been a feature of the questionnaire in that respondents were asked to focus specifically on research methods. The academic employer survey and content analysis of job advertisements identified general research and transferable skills as widely sought by academic employers but there was little support for training in these topics. A minority of academic employers identified a need for researchers to have more general research design and methodological understanding but these were not identified as specific training needs.

5.2 Training Needs: Post Graduate Students

As noted above, these data indicate that post-graduate research students identify training needs primarily in qualitative methods, reflecting the propensity of PhD students to use qualitative methods in their PhD research, particularly in certain disciplines such as sociology, education, anthropology and increasingly in some areas of psychology. The reasons why post graduate students in a range of social science disciplines appear to opt for qualitative rather than quantitative approaches is not wholly clear. The dominance of qualitative research in certain disciplines (see May, 2005) is one factor; clearly students are influenced and inspired by what they learn in their undergraduate education and by the skills of potential supervisors in their choice of approach and topic. A further factor is the lack of advanced mathematics teaching in the UK school, higher and further education systems. The practice of encouraging young people to opt for a narrow range of topics at 'A' level is also a factor resulting in many social scientists lacking foundation skills in mathematics. Certainly, there was evidence in our survey that while post graduate students and junior researchers were aware of the need to broaden their range of methodological skills there was some anxiety expressed about the difficulties they might encounter in learning about the use of statistical methods.

Our survey also revealed that students' training needs in their chosen area of study for their PhD were not wholly met by their institutions. In particular, students noted the need for further training in interviewing techniques and qualitative data analysis. The former appeared to relate to concerns about putting skills learnt into practice and the ways in which interviewing in a research setting may differ to what students have learnt in taught sessions. This perhaps indicates a need for work placements or shadowing so that students can learn at first hand how experienced researchers manage such issues. Concern about a lack of skills in qualitative analysis was widely reported indicating that research training, and indeed supervision, is not providing adequate support for the development of these skills. While students frequently raised the issue of a need for training in CAQDAS it is not clear whether this expressed need reflected a lack of technical expertise in the use of such software or in qualitative analytic skills more generally. If it is the latter, then it is worrying that students are looking to CAQDAS to meet their needs in this respect given that CAQDAS is only as good as the analytic skills of any given researcher.

The researcher survey also indicated that post-graduate students had training needs in relation to the range of methods that 1+3 training is designed to provide. Students indicated some awareness of a need for broadly-based training although their focus during their period of training is likely to be on their own methodological approach. The acquisition of a wider range of skills at this point in their careers is likely to be low on their list of priorities. Nevertheless, the training that students receive in institutional programmes is often at a basic level given the constraints on time within the +1 element of research training providing limited opportunity for them to develop their analytic skills. These may be inadequate in providing the level of skill necessary to enable students to be appointed to posts where methods other than those used in their PhD are necessary. This is a particularly important issue in relation to students who undertake qualitative research for their PhD given the findings in the survey of academic employers and the content analysis of job vacancies that the majority of jobs in the academic sector call for skills in quantitative methods. There may also be issues here for the providers of training and research supervisors as the training students receive is only as good as the people who provide it. There is an indication in some students' responses that this is inadequate at some institutions. There may be

a case for developing systems of collaborative provision across institutions, which might include on-line provsion, to enable students to access good quality training. There is certainly a case for enabling post-PhD researchers to develop their range of skills to increase their employment prospects.

5.3 Training Delivery

In terms of training delivery, there was considerable demand for regional training, especially for people living in Northern Ireland. The ESRC's initiative to support regional training centres corresponds well with these findings.

Researcher and academic employer respondents viewed traditional face-to-face short courses as the preferred type of training event, with particular interest expressed in one day events. For PhD students, opportunities to focus on their own research or their own data at these events were highlighted as particularly important. The popularity of face-to-face events of short duration may reflect issues of lack of time to attend training and limited funding as well as familiarity with these traditional types of events.

There was support for on-line training among researcher survey respondents but much less so among academic employers. This may reflect generational effects among more senior researchers who are unfamiliar with on-line training. On-line provision has a number of potential advantages in that it can be accessed when it is appropriate to researchers' needs, and for the periods of time researchers have at their disposal. On-line training also avoids the access problems experienced by researchers in the Regions. Given that senior researchers identified lack of time as the primary reason for being unable to access training, on-line training may be a particularly important style of provision for this group. Nevertheless, online training resources require very significant investment for their development and need to be promoted widely in order to encourage uptake.

Interestingly, there was only limited support for placements among all groups although 'apprenticeship' models have been identified in other studies as appropriate forms of skill acquisition and development particularly in some methodological areas

such as qualitative research where learning about methods is seen as more of a craft than a skill (RMP, 2002; Rees et al, 2004). There was however some desire, particularly among PhD students, for training courses in which they could learn how to use methods in practice. Arguably, one of the best ways of achieving this could be through placements. The lack of experience of these types of approaches to training and their low level of availability may be factors accounting for the lack of support for this option. Issues of time are also a factor, especially for junior researchers working on contracts; it is often not possible to spare researchers for more than a day to undertake training if the needs of the research are not to be compromised. A lack of funding is also an issue militating against this type of training, again perhaps especially for contract researchers.

There appears to be a need for the development of an on-going training programme for contract researchers, especially for those in their first post following completion of their PhD. Opportunities for such training are very limited within the current system given the lack of funding and time written into research grant funding for researcher training. Funding to enable junior researchers to attend training is important given this was the primary reason identified by this group for being unable to access training. This finding supports the importance of ESRC training bursaries, especially for contract researchers. A system of annual summer schools across the UK for contract researchers would be one way of supporting researchers early on in their careers in the development of a range of skills on which to build for the future.

The researcher survey indicated that mid-career and senior researchers lack the time to attend training events. Furthermore, it may be that they do not perceive they need further training or development in particular areas. There may be a case for developing training events aimed specifically at these groups. This is a particular issue for those involved in teaching research methods at undergraduate or postgraduate level and in research supervision. Events focused on updating research methods knowledge in relation to innovative and developing methods are particularly appropriate for this group.

In terms of the level of training, the academic employers' survey indicated that there is a case for institutions covering basic training and the ESRC and its investments

focusing on intermediate and advanced training. However, it was recognised that the level of training provided by institutions is highly variable. This suggests the need for collaborative provision across institutions for PhD students and the availability of basic training courses for researchers at all levels, especially in topics such as statistics. Survey respondents appeared to view generic methods training as feasible and appropriate, although some discipline-specific training needs were identified by a minority of respondents (e.g., econometrics, archival research and documentary research).

6. Conclusion

This study was designed to elicit researchers' perceptions of their own training needs alongside the needs they perceived there to be of the wider social science community. In seeking their views about the latter, one might have anticipated greater attention and specificity in their responses in relation to issues of workforce and/or capacity building. We also anticipated our study design would enable us to compare needs across disciplines. However, the spread of the respondents across a large number of disciplines and the relatively small sample sizes within disciplines meant that this was not possible

Respondents to this assessment were primarily PhD students, junior researchers and academic employers who commented on training needs in relation to the appointment of research staff. As noted in the introduction of this report, this (by design) comprises a different group than the 2004 assessment exercise conducted by NCRM in which the majority of respondents were senior researchers/academics, representatives of learned societies or individuals with a specific interest in methodology. Comparisons between these two exercises should therefore be undertaken with caution. Nevertheless, there are some interesting similarities and differences to be noted.

Some similarities between the 2004 and 2005 assessments are evident. These similarities are:

- a high demand for training;
- a need for training throughout the career trajectory;
- short courses as the most popular form of training delivery;
- Lack of time as the primary obstacle to accessing training.

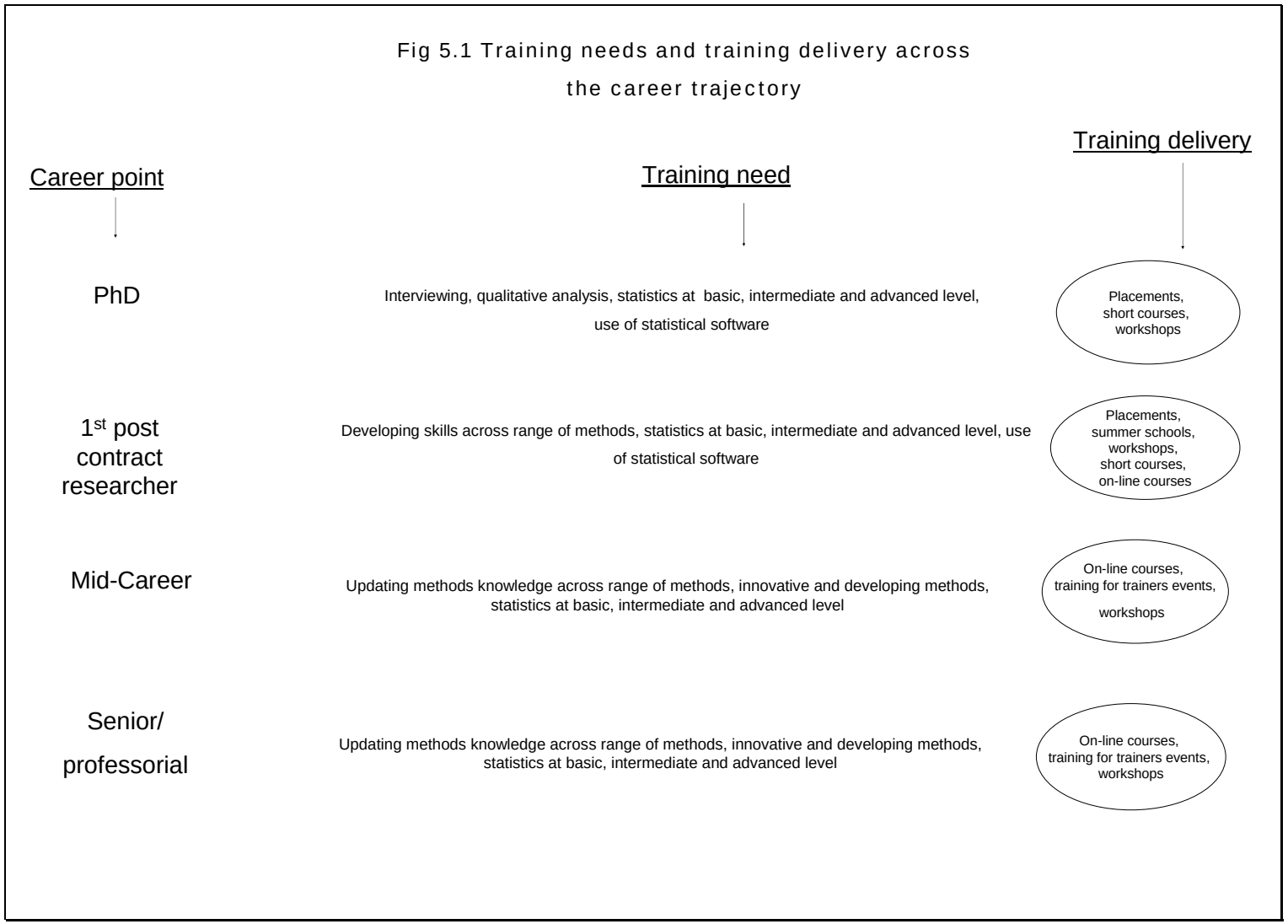
Some of the key differences between the two assessments are listed below. These can be largely accounted for by the different sample groups.

- Less focus on discipline-specific training in the 2005 assessment.
- Less emphasis on innovative and developing methods in the 2005 assessment.
- Less focus on specific methods in the 2005 assessment.

This exercise usefully builds on the 2004 exercise through an exploration of researchers' perceptions of training needs and, in particular, those of academic employers. Thus this report contributes to the on-going process of assessment of training needs within the social science community. Further research focusing on the needs of the non-academic research community and comparisons of training needs across disciplines are needed.

In summary, the 2005 assessment of training needs indicates the following issues in relation to training needs and training delivery. (see Figure 5.1 for a summary of this information).

Fig 5.1 Training needs and training delivery across the career trajectory



In conclusion, this report identifies a range of issues which need further consideration:

- There is a need for training in quantitative methods, statistics and the use of statistical software at all levels (basic, intermediate and advanced) across the career trajectory;
- A system of training needs to be developed to enable researchers to work confidently across a range of methods at all levels;
- Training in qualitative analytic skills, especially for PhD students, is needed. These include, but go beyond training in the use of qualitative analysis software;
- Opportunities need to be developed for PhD students and junior researchers to engage in experiential learning in the development of their expertise, especially in relation to interviewing skills (e.g., through placements). Several of the NCRM Nodes provide opportunities for placements for junior researchers and these provide good templates for similar developments (see for example http://www.cardiff.ac.uk/socsi/qualiti/placement.html);
- The research training received by post-graduate students is variable and does not always meet their needs. A system of collaborative provision across institutions might better enable the training needs of this group to be met;
- A programme of training for 'first-post' contract researchers needs to be developed, possibly through a system of annual summer schools. The NCRM runs an annual summer school which in 2006 will focus specifically on this group. However, further provision is clearly needed;
- Courses aimed at updating the skills, knowledge and expertise for mid-career and senior researchers involved in research methods teaching and supervision are needed. The NCRM currently runs courses open to these groups and have plans aimed at supporting the needs of trainers;
- Training opportunities should be provided at a Regional level. The ESRC's initiative to support regional training centres corresponds well with this finding;
- There is potential demand for on-line training resources, especially among more junior researchers, but these will require very significant investment for

their development and will need to be appropriately promoted to encourage uptake;

- Lack of funds prevents a significant number of researchers from taking part in training (especially junior researchers) and the provision of financial support, such as via ESRC's training bursaries is potentially important.

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Appendices

1. NRCM summary from 2004 consultation exercise
2. RMP summary consultation exercise
3. Researcher questionnaire
4. NCRM Events questionnaire
5. Academic Employers questionnaire

1. NCRM Consultation Exercise 2004: Summary of Training Needs

The following training-related issues arose in the course of the NCRM consultation exercise:

- The ***need for ongoing training in research methods throughout researchers' careers*** was repeatedly mentioned. Asked to choose the level at which training was most needed, 48% of respondents to the online questionnaire identified intermediate-level training as most important; 23% chose entry-level and 19% chose advanced training. However, the terms 'basic', 'intermediate' and 'advanced' are unclear.
- ***Basic-level research is needed in particular in certain sectors***. Researchers who have previously been practitioners often lack a solid grounding in the principles or research (e.g. in educational research, some health-related research and those who enter socio-legal with a training in law), and individual departments or organizations may not be able to provide this by themselves
- ***Training of trainers and research supervisors*** is central. It is important to ensure that those who supervise students (or junior staff) are aware of the full range of research methods and of where these can be applied. This does not mean that supervisors need know how to use these methods, but they should know that they exist, when they are relevant, and how and where students could learn more and undergo training in them. Encouraging collegiality and the sharing of ideas among trainers and supervisors, even those whose research interests are disparate, may be useful in general terms.
- ***Provision of training in generic research-related skills*** was a recurrent theme. This includes cross-disciplinary issues such as research design and philosophy of research as well as skills relating to the organisation of research such as management of projects and junior staff and foreign-language learning.
- This relates to an apparent ***tension between discipline-specific and inter-disciplinary training needs***. Respondents often referred to research methods that relate to their own disciplines—such as econometrics or psychometrics—and to the need to encourage researchers to undergo training by allowing them to work on their own data or by using examples specific to particular disciplines. This jars with approaches—such as that being taken by the NCRM—that emphasize the applicability of methods to a number of disciplines.
- Respondents from both academic and non-academic backgrounds questioned the ESRC's current strategy of ***funding Masters students only when they plan to proceed to PhDs***. Some employers, such as government departments, value the breadth of skills obtained by those who have taken Masters-level courses in social research and view the expertise of those who have taken doctorates as unnecessarily narrow. With this in mind, they would be pleased to see the provision of Masters-only research funding.
- ***Potential difficulties relating to the location of training courses*** mean that some people are interested in the potential of online training. Although such courses are no cheaper than conventional forms of training, they offer advantages in terms of accessibility. Guidelines now exist for developing provision of this type.
- There is currently no single site from which to obtain ***information about the range and format of existing training opportunities***. Establishing, maintaining and making accessible such information is seen as something in which the NCRM can play an important role.

Iain Lang, 05/02/04

2. Research Methods Programme Consultation meeting on training:

29 November 2002

A summary of key points

1. Comments common across all groups

1. Training needs to be ongoing for researchers at all levels - from graduate students through to senior researchers. It was emphasised that developments in methods require constant up dating. It is important that the trainers receive training to ensure that up-to-date skills are passed on to students - however this may not be easy to achieve.
2. Training needs to be closely linked with substantive research questions and, generally, needs to be disciplinary based. Interdisciplinary training is valuable but needs to build from and across the different disciplinary/substantive bases, rather than adopting a purely generic approach.
3. There needs to be recognition of research as a craft that needs to be learnt through practise. This may include a number of non-traditional types of training:

   -Apprenticeship mode
   -Mentoring to impart skills
   -Shadowing or placements in research settings

   There is considerable merit in fostering links with ESRC Research Programmes and projects in order to achieve some of these aims.

4. An archive of training materials would be of value to qualitative and quantitative research. This should include not just training materials but also case study evidence of effective research.
5. Post-graduate training should capitalise on synergies with other institutions - whether through use of short courses at other universities or through development of consortia or regional centres.
6. The lack of funding within academia for an individual's training requirements needs to be addressed. Nominally this is covered by overheads on grants and cannot be included as an item in ESRC grants. The expected increase in overheads to universities may provide an opportunity to exert some leverage towards obtaining training budgets for research methods.
7. A range of methods of delivering training was identified - in addition to those listed under 5 and 6. These included traditional short courses, master classes, trainers trained by experts.
8. Training was needed at all levels - from entry level to state-of-the-art.