

# The role of research supervisors in information literacy

A Research Information Network report

October 2011



# Acknowledgments

This report was commissioned in December 2010 by the Research Information Network (RIN) to investigate the place and role of PhD supervisors in the drive to ensure that research students possess the necessary level of information literacy to pursue their careers successfully in academia and beyond. The study was undertaken under the auspices of the RIN Working Group on Information Handling, which is charged with promoting good practice and improving coordination in the provision of information literacy training for researchers in higher education.

The research for the study and the drafting of the report were carried out by Curtis+Cartwright Consulting in partnership with Cardiff University between January and June 2011, with the bulk of the information gathered, via surveys and focus groups, in February, March and April 2011. The RIN would like to thank Matt Shreeve and Genevieve Clapton from Curtis+Cartwright, and Cathie Jackson from Cardiff University for their work.

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## List of abbreviations

ALA	American Library Association
CILIP	Chartered Institute of Library and Information Professionals
CROS	Careers in Research Online Survey
PDP	Personal Development Plan
PINOTA	Postgraduate Information Needs and Online Tool Awareness
PIRLS	Principal Investigators and Research Leaders Survey
PRES	Postgraduate Research Experience Survey
QAA	Quality Assurance Agency for Higher Education
RCUK	Research Councils UK
RDF	Researcher Development Framework
RDS	Researcher Development Statement
RIN	Research Information Network
SCONUL	Society of College, National and University Libraries

# Executive summary

## Executive summary

This report details the findings and recommendations from a RIN-commissioned project to investigate the place and role of PhD supervisors in the drive to ensure that research students possess the necessary level of information skills and competencies to pursue their careers successfully in academia and beyond.

This report uses the term information literacy because it is helpful shorthand for a range of knowledge and skills. An indicative set of elements of information literacy was used in the project; these are set out on page 15.

A conventional definition of information literacy is provided by CILIP: "Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner".<sup>1</sup> However, it is important to adopt a broader interpretation of information literacy, which (i) recognises that 'information' must be taken to include research data; and (ii) clearly also encompasses the ability to manage, and where appropriate preserve and curate one's own information and data.<sup>2</sup>

The project was undertaken between January and June 2011. Two online surveys were conducted – one for supervisors and one for research students. Both surveys were open to self-selection bias and it is thought that there is some bias towards supervisors already engaged with, and positively disposed to, academic libraries and researcher development. The research student survey data are considered to be fairly representative of the population. In addition, five institutional case studies were investigated, involving focus groups with supervisors and research students, and interviews with other relevant institutional staff such as representatives from libraries and graduate schools.

## Background

Information is the lifeblood of academic research and so information literacy is of vital importance. The 2008 RIN report, 'Mind the skills gap' focused on information-handling training for researchers, and one conclusion was that there was a widespread perception that some research supervisors do not recognise the need for the types of training on offer to their postgraduate students. Since that report there have been further developments regarding the role of information literacy in researcher development. This includes the publication of the Researcher Development Framework which extensively covers all aspects of researcher development, including many explicit references to information literacy.

However, whilst the supervisor is thought to be influential in the development of research student knowledge and skills, a detailed exploration of the role of the supervisor in information literacy has not been undertaken until now. New evidence drawn from surveys, focus groups and interviews sheds light on this. By better understanding the supervisor, including their attitudes and relationships with key institutional players, a more informed approach to improvements in research students' information literacy is possible.

This report contains the findings most relevant to decision-makers in institutions and departments concerned with researcher development, postgraduate studies, information literacy, and library services.

## Key findings

A complex picture emerges of the role of the supervisor in information literacy, showing where and how supervisors are important. Practice, and research student satisfaction, varies enormously between different supervisors, research groups, departments and institutions. There is also great variation across different elements of information literacy, with the role of the supervisor strongest, and involving most active participation, for research students' ability to

1. [www.cilip.org.uk/get-involved/advocacy/learning/information-literacy/pages/definition.aspx](http://www.cilip.org.uk/get-involved/advocacy/learning/information-literacy/pages/definition.aspx) (accessed 4 January 2011)

2. [www.rin.ac.uk/our-work/researcher-development-and-skills/what-is-information-literacy](http://www.rin.ac.uk/our-work/researcher-development-and-skills/what-is-information-literacy) (accessed 27 June 2011)

“critically analyse and evaluate others’ arguments” and to “identify where best to present and publish work” (page 32).

Research students are consistent in looking to their supervisor as a source of information and guidance (page 19). Supervisors, therefore, do have influence over the knowledge and skills development of their research students in information literacy. This is in the context of their normal supervisory activities because supervisors do not generally recognise the overall concept of information literacy (page 22).

More worryingly, there is a minority of supervisors who are not engaged in developing their research students’ information literacy. Both supervisors and research students discuss this resistant minority who tend to be negative towards, or unaware of, development needs and activities. Survey data indicate that 5 - 15% of research students feel that overall they are not getting enough support from their supervisor (n=907) (page 22).

Many supervisors have confidence in their ability to advise their research students on information literacy, though this does vary across the different elements. They are mostly ‘very confident’ in advising on information search, critical thinking and knowing where to publish, and mostly ‘fairly confident’ in advising on reference management, using IT to stay up to date with relevant research, research data management, open access, social media and legal frameworks. Survey data show that only a quarter of supervisor respondents felt very or fairly confident across all of the elements within the survey (n=382) (page 46).

Developing their research students’ academic writing ability is a key activity that supervisors undertake. This is linked to information literacy: developing an academic writing style is considered by supervisors to relate as much to the underlying critical thinking and formulation of ideas, as the writing style itself. Supervisors can use it as an entry point into developing critical thinking, referencing and use of the literature (page 32).

Supervisors are not always aware of departmental, school or institutional training and support available for their students, and sometimes find it difficult to identify what training and support is available. Only support for information search and reference management is nearly universally known about. Where supervisors are aware of the training and support on offer for research students, opinions are divided as to its efficacy: most think it is effective, some think it is not. However, in practice supervisors do tend to place a higher emphasis on institutional sources of support for their research students than research students do (page 41).

Supervisors are not necessarily completely up to date themselves. For each element of information literacy on average only about half of supervisor survey respondents see themselves as having updated their skills or knowledge, or undertaken training, in the last three years – with very few having done this across all the elements. There is a keen awareness, and an acceptance, of not being fully up to date, especially with the latest digital technologies, and supervisors readily rationalise this position (page 46).

Training for supervisors is a polarising issue. Many supervisors highlight overlong, overly generic or not useful training as a disincentive to attend further courses. In any case, supervisors get much of their information and direction on information literacy firstly from their academic peers and secondly from the web (page 46).

In general, differences in students’ perceptions of their supervisor(s) role and success in providing support across mission groups<sup>3</sup>, subjects and mode of study are relatively minor. Instead there are major differences at the individual, research group and departmental level (page 19).

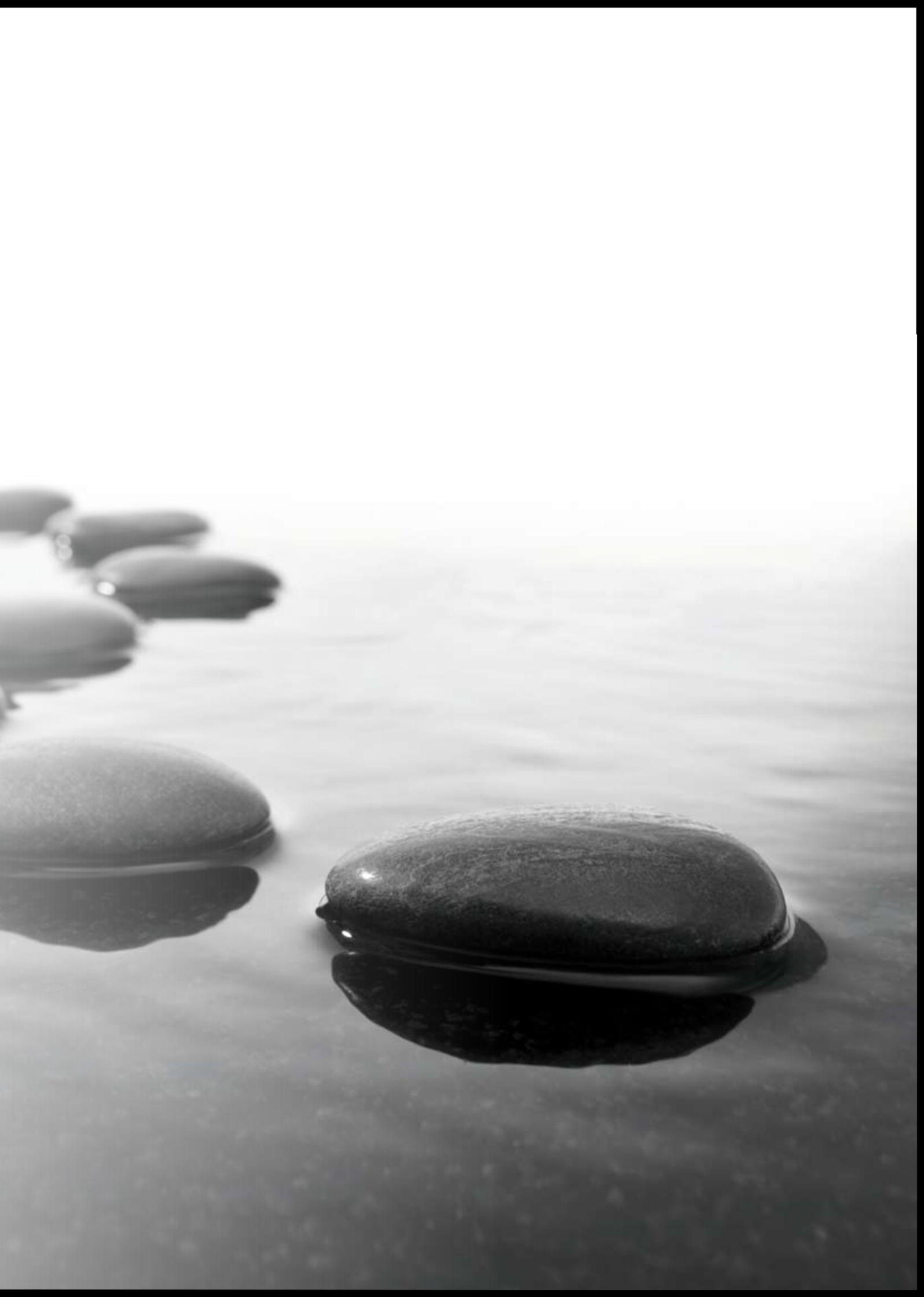
3. Mission groups are collections of institutions that share common aims. They include the Russell Group, the 1994 Group, Million+, and the University Alliance.

## Recommendations

This report (Section 5, p59) makes prioritised and specific recommendations regarding the development and promotion of good supervisory practice for information literacy. These are based on many possible enhancements in institutional support mechanisms and supervisory practices identified by supervisors and research students. The report sets out the following broad recommendations:

- Making it easy for supervisors to keep up to date on what training, support and resources are available for both themselves and research students; for this purpose, providing supervisors with clear information, specific to their needs, on the range of appropriate offerings and developments.
- Improving development opportunities for supervisors, in particular by encouraging peer support between supervisors, notably through seminars and mentoring,
- Encouraging supervisors to support and discuss their research students' skills assessments, for instance through mechanisms, jointly considered by supervisors and students, that could be used as a basis of planning development opportunities.

Finally, the evidence and findings lead to questions about the usefulness of the term 'information literacy' for supervisors, and how it is conceived within researcher development. In light of the understanding of the supervisors' role and their attitudes offered by this report, institutional stakeholders can review their approach and ensure that a clear institutional position on the use of the term and concept is agreed.





# Introduction

This report is the key output from work commissioned by the RIN to investigate the place and role of PhD supervisors in the drive to ensure that research students possess the necessary level of information literacy to pursue their careers successfully in academia and beyond. The project was undertaken by Curtis+Cartwright Consulting in partnership with Cardiff University between January and June 2011, with the bulk of the information gathered, via surveys and focus groups, in February, March and April 2011.

This report is accompanied by two supplementary reports:

- a summary of the survey data;<sup>4</sup>
- a summary of the case studies.<sup>5</sup>

The quotations used in the report are statements made by participants in the surveys, focus groups and interviews, and do not necessarily represent the views of Curtis+Cartwright and Cardiff University.

## Purpose

The purpose of this report is to help disseminate the project's findings and recommendations. The final version will be edited and published by the RIN.

## Objectives

The objectives of the project were to:

1. investigate and analyse the current attitudes and practices of PhD supervisors across a range of institutions and disciplines, on how they support the development of their students' skills in, and knowledge and understanding of, information literacy;
2. investigate the relationship between PhD supervisors and other relevant players, including graduate schools and university libraries, in the development of their students' information literacy;
3. describe and analyse variations in these practices in relation to the differences in:
  - disciplinary settings;
  - institutional environments;

4. relate these practices to the expectations and competencies outlined in Vitae's Researcher Development Framework (RDF) and in SCONUL's Seven Pillars of Information Literacy;
5. identify and set out exemplars of these practices;
6. gauge the ability of PhD supervisors to impart relevant skills and provide appropriate advice, paying attention to:
  - their own competencies in this area;
  - the training and support that they themselves receive;
7. identify areas where improvement in supervisors' practices would be beneficial (for instance, through better training and support for them), with particular regard to relevant competencies set out in the RDF and the Seven Pillars;
8. investigate how such improvements might be effected, in the context of different disciplinary settings and institutional environments;
9. make recommendations regarding:
  - the development and promotion of best supervisory practice, with reference to the use of the RDF and the Seven Pillars as instruments to help achieve best practice in information literacy;
  - the provision of support mechanisms, training and, if appropriate, incentives for supervisors to enable them to play their role in developing the information literacy of their students;
10. set out courses of action, geared to different stakeholders, for the above recommendations, in the form of a short dissemination and advocacy strategy.

The objectives of this project report are to:

- set out the key findings and recommendations from the project;
- provide the material for the RIN to publish a report;
- inform a subsequent dissemination and advocacy strategy.

4. *Summaries of two surveys undertaken to support an investigation into the role of research supervisors in information literacy*, Curtis+Cartwright, CC465D006-1.0, 5 September 2011

5. *Summaries of institutional case studies to support an investigation into the role of research supervisors in information literacy*, Curtis+Cartwright, CC465D008-1.0, 5 September 2011

## Scope

A conventional definition of information literacy is provided by CILIP: "Information literacy is knowing when and why you need information, where to find it, and how to evaluate, use and communicate it in an ethical manner".<sup>6</sup> However, it is important to adopt a broader interpretation of information literacy, which (i) recognises that 'information' must be taken to include research data; and (ii) clearly also encompasses the ability to manage, and where appropriate preserve and curate one's own information and data.<sup>7</sup>

Generic information technology and communication skills (eg use of Microsoft Office and presentation skills) are not strictly included in this definition but these skills may support other skills that are in scope. To focus questioning in the surveys, interviews and focus groups a specific set of skills was chosen. These are a broad mix of skills that encompass both traditional elements of information literacy as well as newer elements. Paragraph 2.2.2 (p14) sets these out in detail within a review of the evidence.

The Researcher Development Framework (RDF) describes the knowledge, skills, behaviours and personal qualities of researchers. The RDF does cover a core of information literacy skills/competencies/understanding. It should be noted that not all research students will require all advanced skills in equal measure.<sup>8</sup>

All research disciplines are in scope. The primary focus of the project is PhD (and DPhil) supervisors in UK academic institutions. Other types of doctoral degrees that research supervisors support are included. These include professional doctorates (EdD, EngD, etc), the New Route PhD<sup>9</sup> and PhD by practice. PhD by publication is excluded due to the difference in the way this PhD is obtained and its comparative rarity. Both primary and secondary supervisors are included within the scope. Masters-level students and their supervisors are excluded from this project.

## Intended audience

This report is of interest to audiences holding a variety of roles and positions within institutions within the higher education sector. This includes those concerned with researcher development, postgraduate studies, information literacy, and library services. Helping to understand the interconnected system of different stakeholders in researcher development is part of the purpose of this report, and therefore it should have broad appeal.

## Background

### *Researcher development*

The UK Research Councils together agreed in 2001 a Joint Skills Statement,<sup>10</sup> listing the skills for which universities should provide training and development opportunities for research students. The aim was that research students should complete their PhD not only having made a substantial contribution to knowledge in their area of study, but with generic skills to prepare them for a career in academia or elsewhere.

The Researcher Development Framework (RDF) and Research Development Statement (RDS) were launched in 2010 by Vitae, to replace the Joint Skills Statement.<sup>11</sup> The RDF "articulates the knowledge, behaviours and attributes of successful researchers and encourages them to realise their potential".<sup>12</sup> The RDS is "derived from the RDF" and is "for policy makers and research organisations which provide personal, professional and career development for researchers in higher education".<sup>13</sup>

### *The importance of information literacy*

The ability to locate, evaluate, and build upon existing information and data is the basis of academic research. Many individuals have become proficient at developing approaches and using innovative technologies to make

6. [www.cilip.org.uk/get-involved/advocacy/learning/information-literacy/pages/definition.aspx](http://www.cilip.org.uk/get-involved/advocacy/learning/information-literacy/pages/definition.aspx) (accessed 4 January 2011). Other definitions exist, for example, [http://www.jisc.ac.uk/uploaded\\_documents/JISC-SISS-Investing-v1-09.pdf](http://www.jisc.ac.uk/uploaded_documents/JISC-SISS-Investing-v1-09.pdf) (accessed 4 January 2011)

7. [www.rin.ac.uk/our-work/researcher-development-and-skills/what-is-information-literacy](http://www.rin.ac.uk/our-work/researcher-development-and-skills/what-is-information-literacy) (accessed 27 June 2011)

8. The core required elements correspond to the first two phases of each domain/sub-domain within the RDF. Phases relate to different levels of competency.

9. The NewRoutePhD is an "integrated programme of postgraduate training which combines research with a structured programme of advanced training in discipline specific and generic skills." [www.newroutephd.ac.uk](http://www.newroutephd.ac.uk) [accessed 2 September 2011]

10. *Joint Statement of the UK Research Councils' training requirements for research students*, UK GRAD, 2001. [www.vitae.ac.uk/cms/files/RCUK-Joint-Skills-Statement-2001.pdf](http://www.vitae.ac.uk/cms/files/RCUK-Joint-Skills-Statement-2001.pdf) [accessed 24 November 2010]

11. [www.vitae.ac.uk/policy-practice/234381/RDF-overview.html](http://www.vitae.ac.uk/policy-practice/234381/RDF-overview.html) [accessed 19 May 2011]

12. [www.vitae.ac.uk/CMS/files/upload/Vitae-Researcher-Development-Framework.pdf](http://www.vitae.ac.uk/CMS/files/upload/Vitae-Researcher-Development-Framework.pdf) [accessed 28 June 2011]

13. [www.vitae.ac.uk/CMS/files/upload/Researcher%20development%20statement.pdf](http://www.vitae.ac.uk/CMS/files/upload/Researcher%20development%20statement.pdf) [accessed 28 June 2011]

the most of the information environment, but others rather less so. How researchers develop appropriate skills, the support they receive, the training opportunities available to them, and the uptake of such opportunities is therefore of great importance.<sup>14</sup>

The 'Mind the Skills Gap' report highlighted a range of initiatives by university libraries in promoting and providing information literacy training to research postgraduates.<sup>15</sup> Research students may become aware of such training through any of a number of different methods: from direct one-to-one contact by library staff, library publicity, promotion by the graduate school, as well as through encouragement by supervisors.

### *Information literacy training in the UK*

The RDF expressly lists information literacy in terms of understanding information, conducting effective and comprehensive searches, and recording, managing and handling information and data. Other elements of information literacy in the scope of this report are listed in terms such as critically synthesising information, attributing others' work and knowledge of intellectual property rights. These references should enable research students and supervisors, to identify needs and opportunities better in developing information literacy.

Universities currently offer a programme of training and development (ideally) based on the individual needs of each research student as identified and documented in a 'Personal Development Plan' (PDP).<sup>16</sup> Research students ideally complete the PDP and discuss it with their supervisor as part of the skills development process. Library staff do not see research students' PDPs and cannot

therefore address individuals' needs through this means. A number of universities have provided tools and tests to enable students to self-assess their skills. These tools and tests can pin-point areas where development is needed, and can lead to greater acceptance of the need to address them through, for example, attendance at information literacy training sessions.<sup>17</sup>

The RIN Working Group on Information Handling was set up in 2009 to advocate greater coordination and a more strategic UK approach with regard to the provision of information literacy training for HE researchers. The group has ensured that information-handling competencies are properly addressed by the RDF and is promoting the use of the RDF to advance information literacy.<sup>18</sup> The group has mapped the RDF against the headline skills of the SCONUL Seven Pillars Model to develop an information literacy mapping for the RDF.<sup>19</sup> Alongside this, the SCONUL Working Group on Information Literacy, which developed the 'Seven Pillars of Information Literacy' model to describe and explain the concept ten years ago, has refined that model, and developed a 'research lens' to help interpret the concept in relation to researchers.<sup>20</sup> The new lens lists researchers' abilities and behaviours for each 'pillar' of information literacy, and encompasses both information and data.

### *The role of research supervisors*

Supervisors, in their roles of supporting, encouraging and monitoring their research students, are instrumental in helping research students assess their training and development needs. The extent to which research students take up opportunities for training is expected to be negotiated through the supervisory process.<sup>21,22</sup>

14. [www.rin.ac.uk/our-work/researcher-development-and-skills/research-supervisors-and-information-literacy](http://www.rin.ac.uk/our-work/researcher-development-and-skills/research-supervisors-and-information-literacy) (accessed 24 November 2010)

15. *Mind the Skills Gap*, RIN, 2008. [www.rin.ac.uk/mind-skills-gap](http://www.rin.ac.uk/mind-skills-gap) (accessed 24 November 2010)

16. *Personal development planning: guidance for institutional policy and practice in higher education*, QAA, 2009. [www.qaa.ac.uk/academicinfrastructure/progressFiles/guidelines/PDP/PDPguide.pdf](http://www.qaa.ac.uk/academicinfrastructure/progressFiles/guidelines/PDP/PDPguide.pdf) (accessed 24 November 2010)

17. *Are Postgraduates Ready for Research?*, Boucher et al, 2009. Poster presented at the Librarians Information Literacy Annual Conference (LILAC), Cardiff University. [www.rrsa.cmich.edu/documents/RRSA\\_poster\\_LILAC\\_2009.pdf](http://www.rrsa.cmich.edu/documents/RRSA_poster_LILAC_2009.pdf) (accessed 24 November 2010)

18. *Working group on information handling*, RIN, 2010. [www.rin.ac.uk/info-handling-group](http://www.rin.ac.uk/info-handling-group) [accessed 19 May 2011]

19. *RDF annotated with references to information literacy*, September 2010, [www.rin.ac.uk/rdf-7pillars](http://www.rin.ac.uk/rdf-7pillars) (accessed 2 September 2011)

20. *The SCONUL Seven Pillars of Information Literacy: A Research Lens For Higher Education*, SCONUL Working Group on Information Literacy, April 2011, [www.sconul.ac.uk/groups/information\\_literacy/publications/researchlens.pdf](http://www.sconul.ac.uk/groups/information_literacy/publications/researchlens.pdf) (accessed 19 May 2011)

21. *QAA Code of Practice, Section 1, Postgraduate Research Degree Programmes, Precept 19*. [www.qaa.ac.uk/academicinfrastructure/codeOfPractice/section1/default.asp#development](http://www.qaa.ac.uk/academicinfrastructure/codeOfPractice/section1/default.asp#development) (accessed 27 June 2011)

22. Data from Imperial College London indicates how influential supervisors are in whether students attend transferable skills sessions. See *Evaluation of a programme of transferable skills development within the PhD: views of late stage students*, Walsh et al, 2010. [www.dspace.cam.ac.uk/bitstream/1810/224931/1/3943.pdf](http://www.dspace.cam.ac.uk/bitstream/1810/224931/1/3943.pdf) (accessed 24 November 2010)

Supervisors are invariably expert in guiding students in the development of their subject expertise; but it is important to gauge the extent to which they are equally expert in imparting crucial information literacy skills and advising on where to find further training. In this respect, the communication channels and interfaces between supervisors and other key agents such as graduate school personnel and librarians are important.

Given that supervisors may be enablers for research students' information literacy skills, it is also necessary to assess how supervisors are updating their own knowledge and skills in the changing information landscape, and the extent to which they are considering the new initiatives in managing and sharing data and recognising the new demands and opportunities for open access publishing and archiving.

The likelihood of research students utilising available training and support opportunities is likely to be dependent on:

- whether the skills are included in their PDP;
- the part that supervisors and other players (importantly the graduate schools) play in encouraging and attracting research students to attend;
- the quality of relationships between supervisors and other key players.

This report aims to inform on the role of the supervisor.

## Overview of this report

The rest of this report is set out as follows:

- **Section 2** reviews the evidence collected by the project, including its limitations;
- **Section 3** sets out the findings on the current attitudes and practices of supervisors, the relationship between supervisors and other relevant players, and supervisors' ability to impart relevant skills and provide appropriate advice;
- **Section 4** highlights possible improvements in institutional support, enhancements in supervisors' practices, and the challenges involved in effecting them;
- **Section 5** makes recommendations based on a prioritised set of improvements and how they might be effected;
- **Annex A** provides a sample of supervisors' key advice in information literacy;
- **Annex B** provides a sample of research students' top needs from their supervisor.





# Review of the evidence

## Context

This report complements the 2008 RIN report, *'Mind the skills gap'*, which focused on information-handling training for researchers. One of the conclusions was that there was a widespread perception that some research supervisors do not recognise the need for the types of training on offer to their postgraduate students. However, there is very little published material on the attitudes and practices of supervisors themselves. The current study seeks to fill that gap with evidence gathered via an online survey, telephone interviews and focus groups of supervisors.

To understand the role of the supervisor fully, and especially to put the role in context, there was also a need to collect views from related stakeholders. Some evidence already existed, in the form of published papers and reports. For more detail, further primary evidence was collected via an online research student survey and a series of institutional case study visits. However, the intent with this new evidence was to inform the project's objectives relating to the role of the supervisor rather than to investigate in detail these stakeholders' roles in information literacy.<sup>23</sup>

## Introduction to the survey data

Both surveys were online and contained a mix of open and closed questions. They were aimed at UK-based supervisors and research students. The surveys were promoted primarily via mailing lists, including the RIN and UKCGE mailing lists. Both surveys produced significant new data: for the supervisor survey there were 382 complete responses, and 907 complete responses for the research student survey. This exceeded expectations and allowed some quantitative analysis, as well as the expected qualitative analysis. Quantitative analysis included cross tabulation, tagging and filtering, as well as testing for statistical significance.

A separate summary document – available on the RIN website - explains, and supports further use of, the survey data.<sup>24</sup> All survey data used in this report have been drawn from the summary document.

## Elements of information literacy

In order to probe different elements of information literacy within the research and supervisory contexts, both surveys used a consistent set of descriptors for a range of elements within information literacy. A final list of nine elements is shown below:<sup>25</sup>

### *The nine elements of information literacy used in the surveys*

These are the ability to:

- conduct effective and comprehensive information searches
- critically analyse and evaluate others' findings and arguments<sup>26</sup>
- record, manage and handle references using bibliographic tools (eg EndNote)
- use IT to help keep up-to-date with relevant research (eg email alerts and RSS feeds)
- organise, share and archive my/their<sup>27</sup> research data for use beyond my/their project
- identify where best to present and publish my/their<sup>27</sup> work
- understand the role of open access in making my/their<sup>27</sup> research available
- develop my/their<sup>27</sup> research profile and professional networks using social media (eg blogs and LinkedIn)
- understand relevant legal frameworks (eg copyright and data protection)

23. However the value of the evidence gathered, in particular from the research student survey, is recognised and the survey data will be made available for further use.

24. *Summaries of two surveys undertaken to support an investigation into the role of research supervisors in information literacy*, Curtis+Cartwright, CC465D006-1.0, 5 September 2011. [www.rin.ac.uk/role-research-supervisors](http://www.rin.ac.uk/role-research-supervisors)

25. Note that the research lens for SCONUL's Seven Pillars of Information Literacy had not been published at the time of the survey. The elements were agreed by the project governance, and do map to the Seven Pillars and the RDF.

26. The generic nature of this element points at its importance in underlying information literacy.

27. Depending on whether referring to the respondent or the respondent's research student.

## Introduction to the case studies

Five case studies were undertaken. Three of the institutions are Russell Group<sup>28</sup> members; one is part of the 1994 Group<sup>29</sup> and the other a Million+<sup>30</sup> member. Each case study was informed by two focus groups: one with supervisors and one with research students. Supplementary interviews for each case study were held with those with responsibilities for research, academic staff development, library services and postgraduate development.

## Summary of sources of evidence

Table 2.1 sets out the sources of evidence used within the report.

## Critical review of the methodology and evidence

As with any methodology and evidence it is important to understand their limitations. Here it is worth remembering that:

- Both surveys were open to self-selection bias due to the open distribution. Anecdotal evidence from those involved in distributing the surveys and organising the focus groups indicates there is some bias, both in the surveys and in the focus groups, towards supervisors already engaged with, and positively disposed to, academic libraries and researcher development. There is over-representation of social science research students in the research student survey data.
- Some simplifying generalisations were required in the surveys, which were later explored in detail in the focus groups and interviews.
- Selection of qualitative data will inevitably be biased in some way, even if chosen to illustrate a breadth of perspectives and not volume of support as here.
- Statements regarding what constitutes good practice come from views of participants, as little quantitative or empirical evidence on its efficiency, effectiveness or impact were offered.

- Feedback indicates that some terms, including 'social media' and 'open access', may have been interpreted differently by different survey respondents.
- The distributions of responses across institutions for both surveys were uneven, with approximately 10% of responses coming from the top-responding institution in both surveys.

## How the evidence was used in the analysis and interpretation

The general approach has been to take the research student survey data as reliable for statistical analysis, but to consider the supervisor survey data as somewhat biased towards those that are interested and engaged with information literacy and/or researcher development. Owing to this, and the higher number of responses, only the research student survey data have been used for cross-tabulation analyses.

All institutions and all supervisors are different and their attitudes, practices and roles with respect to information literacy differ. Indeed there is great variety in the evidence gathered. In synthesising the findings, decisions on what generalisations to make were informed by the weight of the available evidence. For every generalisation there will doubtless be exceptions – a healthy sign of the diverse nature of the academy.

As with all data, care should be taken in interpreting the results and deciding what can be taken as evidence. Given that this is the first detailed investigation of the role of the supervisor in information literacy, this report's findings provide an important first step. The anonymised survey data are freely available on the RIN website for others to analyse further - see [www.rin.ac.uk/role-research-supervisors](http://www.rin.ac.uk/role-research-supervisors).

28. [www.russellgroup.ac.uk](http://www.russellgroup.ac.uk) (accessed 3 September 2011)

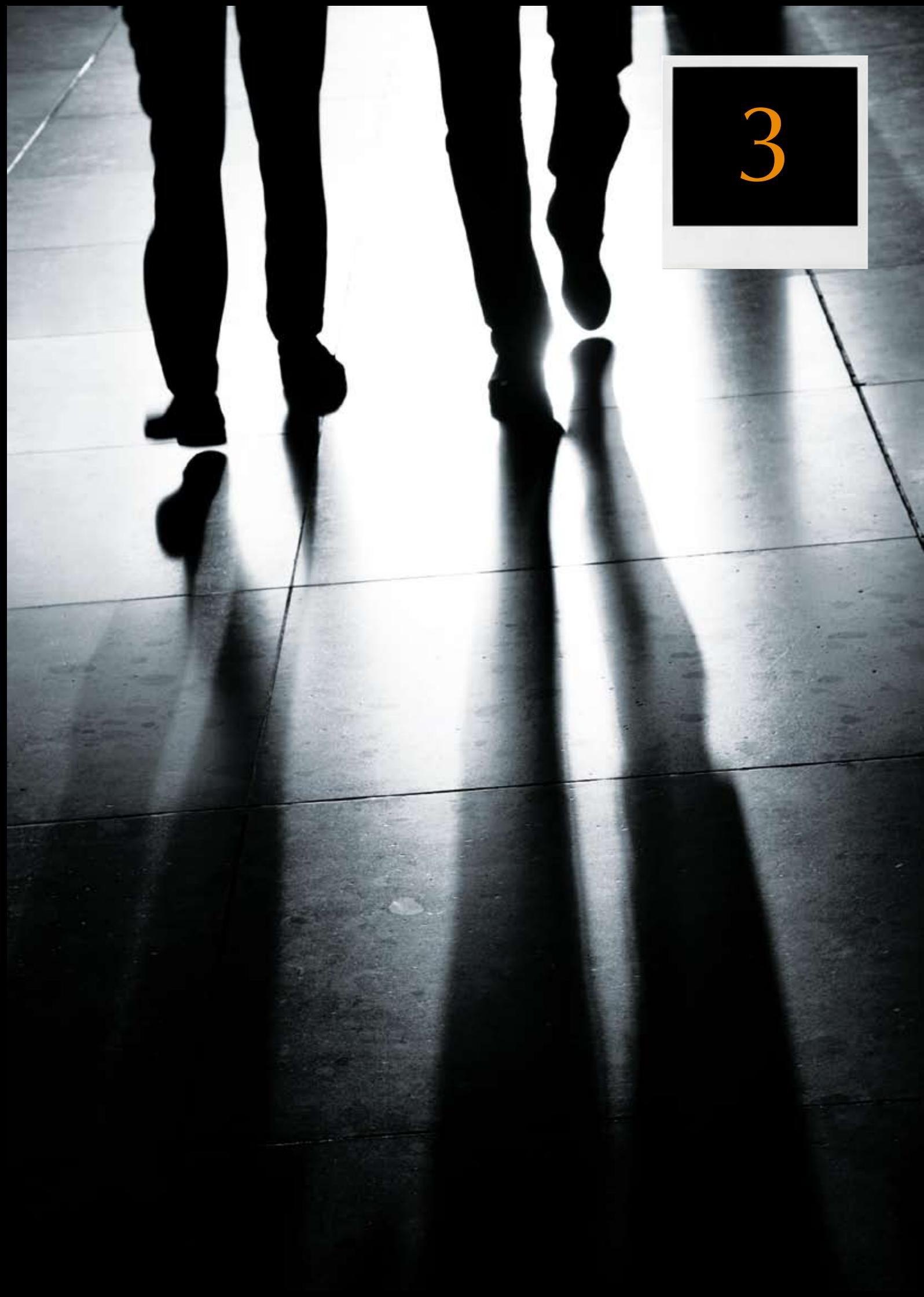
29. [www.1994group.ac.uk](http://www.1994group.ac.uk) (accessed 3 September 2011)

30. [www.millionplus.ac.uk](http://www.millionplus.ac.uk) (accessed 3 September 2011)

Table 2.1: Summary of the key sources of evidence relating to different stakeholders

Evidence	Description
Existing literature	Relevant material found via desk research, mostly on existing research student attitudes and researcher development
Supervisor survey data (respondents come from the full range of mission groups, <sup>31</sup> a range of subjects, different levels of experience, etc)	<p>Quantitative and qualitative data, focused on the nine selected elements of information literacy, regarding the:</p> <ul style="list-style-type: none"> <li>• context: institution, subject, supervisory experience, etc;</li> <li>• supervisors' role: perceived support requirements for their research students, perceived sources of information and guidance for their research students, perceived primary role in supporting their research students, perceived changes in supervisory role, confidence in advising their research students and top advice for other supervisors;</li> <li>• institutional support: awareness of approach/strategy and training / support for research students, perceived effectiveness of training / support, and suggested improvements;</li> <li>• supervisors' own training and support: recent updating, perceived sources of information and guidance for themselves, possible enhancements, awareness of approach/strategy for supervisors' development, and awareness of RDF.</li> </ul>
Supervisor interviews and focus groups (undertaken either as follow-ups to the survey or as part of the case studies)	Qualitative data regarding supervisors' attitudes to their role, practices, and improvements, as well as institutional specifics and other areas of interest.
Research student survey data (respondents come from the full range of mission groups, a range of subjects, different years, modes of study, etc, but the survey was undertaken separately from the supervisor survey)	Quantitative and qualitative data, focused on the nine selected elements of information literacy, regarding research students' context (institution, subject, year of study, mode of study, etc); their perceived relevance of and support requirements; their perceptions of their supervisor's role and help received; perceived sources of information and guidance; and suggested improvements.
Research student focus groups (participants not linked to those in supervisor focus groups)	Qualitative data regarding research students' information literacy skills and development, the role of their supervisor, and suggested improvements, as well as institutional specifics and other areas of interest.
Interviews with librarians, graduate school representatives, research support office representatives, academic staff developers, and PVCs research (undertaken as part of the case studies)	Qualitative data on their roles and relationships with supervisors and good practice for engaging with supervisors, as well as institutional specifics.

31. Mission groups are collections of institutions that share common aims. They are the Russell Group, the 1994 Group, Million+, and the University Alliance. Some institutions choose not to be part of a mission group, and are described in this report as non-affiliated.

The image shows the lower legs and feet of several people walking on a highly reflective, polished floor. The floor is so shiny that it creates clear, dark reflections of the people's legs and feet. The lighting is dramatic, with bright highlights on the floor and deep shadows. In the upper right corner, there is a white rectangular box with a thin black border, containing the number '3' in a gold, serif font.

3

# Findings on the role of the supervisor

## Introduction

This section draws on existing and new evidence to describe the current role and practices of PhD supervisors in ensuring that research students possess the necessary level of information literacy to pursue their careers successfully in academia and beyond. Such roles vary between different elements of information literacy and between supervisors, but often involve liaison with other agencies within an institution, and so these relationships are explored too. The findings then cover supervisors' ability to impart relevant skills and provide appropriate advice on either how to do something or where to go to find out.

Each finding is summarised, before illustrating the point, analysing differences and discussing possible implications. The findings have been put into the following groups:

- Supervisors' influence;
- Supervisors' views on their research students' needs;
- Supervisors' roles;
- Supervisors' views on other sources of information and guidance;
- Supervisors' own abilities and development.

## Supervisors' influence

### ***Supervisors have an influential role on their students' information literacy development***

As has been found in other studies, the data show that supervisors do have influence over the knowledge and skills development of their research students in information literacy.

Research students are consistent in looking to their supervisor as a source of information and guidance.

### *Evidence and detailed analysis*

Previous studies showing that students look to their supervisors to guide them in information literacy skills include:

- A study of humanities research students in Canada indicated that supervisors were their most important contact when seeking information.<sup>32</sup>
- A study at Monash University, Australia, concluded that students lean on their supervisor for direction when locating previous research and for advice on when to stop searching.<sup>33</sup>
- In the 2010 PINOTA study of over 1,300 research students at Cambridge University, supervisors were found to be the most common source of advice on information searching and the second most common source of advice on managing and storing sources, after fellow students.<sup>34</sup>
- The first Researchers of Tomorrow project report concludes that 'Generation Y' research students are heavily influenced by their supervisors, especially in choosing and using research resources.<sup>35</sup> The second report builds on this, with respect to technology, and identifies where supervisors are influential in getting research students to adopt new technology.<sup>36</sup>

32. *The information seeking habits of graduate student researchers in the humanities*. Journal of Academic Librarianship, 31(4), pp324-331, Barratt, 2005.

33. *Research students in the electronic age: impacts of changing information behaviour on information literacy needs*, Communications in Information Literacy 1(2), pp 47-63, Williamson et al, 2007. [www.comminfolit.org/index.php/cil/index](http://www.comminfolit.org/index.php/cil/index) (accessed 24 November 2010)

34. *Postgraduate information needs and online tools awareness*, Dingley, 2010. <http://arcadiaproject.lib.cam.ac.uk/docs/PINOTA-Report.pdf> (accessed 24 November 2010)

35. *Researchers of Tomorrow: A three year (BL/JISC) study tracking the research behaviour of 'Generation Y' doctoral students*, Annual Report 2009-2010, June 2010.

36. For instance, supervisors are more influential for 'Generation Y' research students on institutionally supported technologies and much less so on open web technology. *Researchers of Tomorrow: A three year (BL/JISC) study tracking the research behaviour of 'Generation Y' doctoral students*, Second Annual Report 2010-2011, May 2011.

These previous studies are supported by the research student survey data which show that supervisors are top-ranked as a source of information and guidance on information literacy for the elements as a whole (see Table 3.4, p34, for a detailed breakdown by element). The question asked was "For each of the following areas [of information literacy], please identify your top three sources of information and guidance..." with a range of options of sources, along with 'Other', 'None required' and 'Required but none available'.<sup>37</sup> This top ranking was tested across a number of cross-tabulations (mode of study, major subject classification,<sup>38</sup> place of residence, frequency of supervisory meetings, institutional mission group, and year of study) and the supervisors' overall top ranking only changes when the frequency of supervisory meetings is monthly or less frequently (though this does affect a significant proportion of research students: 35% report monthly meetings, and 26% less frequently).

As well as being seen as a source of information and guidance there is evidence that supervisors are helping many research students to develop in some of these areas (Figure 3.3, p36, explores this in more detail). The research student survey data also show respondents rating their supervisor more highly than their institution in terms of getting enough support for information literacy (eg 45% of respondents strongly agreed that their supervisor was providing enough support, compared to 29% for their institution; n=907).

Finally, qualitative data to support the finding comes from the research student survey and focus groups, for example:

*"My supervisors have provided exemplary academic support (and pastoral care) in order to ensure that I develop into an effective researcher"*

*"Supervisors' support is the most important [...] for a PhD student because they are ones who can give us more exposure toward research and ideas about available opportunities"*

Supervisors' influences are not always positive. For example, in the research student focus groups some students talked about not telling their supervisor when electing to go on training courses and feeling as though they need to go 'under the radar', for example *"...the challenge that I have is that, from what I get a sense of in*

*my school, no one hardly ever goes to [training sessions], and its not looked positively on ... I almost feel like I have to sneak out"*.

Two sources of evidence suggest that some research students are still independent, and that the supervisors' influence has its limitations:

- an analysis from one of the case study institutions that implies supervisors are not a common reason for research students attending the institution's wide range of information literacy courses;<sup>39</sup>
- research student survey data showing that, across the elements, 8% to 64% of respondents do not perceive that their supervisor has an "advising, training and coaching", "answering queries as they arise", and "identifying needs or directing them to suitable support" role in information literacy; this averages at one-third across the elements (Figure 3.2, p33, explores this in more detail).

### *Implications*

This finding supports the validity of research into the supervisor's role in developing the information literacy of their research students: to ignore the role of the supervisor would be to overlook a key factor in researcher development. It also implies that ensuring that the supervisor is in the best position possible to advise on information literacy is to the advantage of their research students.

### ***The effect of disciplinary differences on supervisors' roles and effectiveness are minor but differences at the research group and departmental levels are major***

Whilst many supervisors see some broad generalisations for differences in the nature of supervision and research between subjects, these seem to have less effect on research students than other types of variation. There are, however, major differences at the research group and departmental levels.

37. To derive the top-level ranking each response was weighted according to how many options the participant had selected, and then an unweighted summation across the elements

38. Arts and humanities versus social sciences versus physical and life sciences and engineering

39. One of the case study institutions elicited and analysed data from feedback sheets for training sessions attended by research students. The question asked was "How did you decide to attend this workshop?" and the results have been summed across all information literacy sessions. 2% stated "It was required by my supervisor/department", 8% stated "It was recommended by my supervisor/department" and 90% stated "It was my own choice to attend" (n=262)

Table 3.1: A highly simplified synthesis of key differences as articulated by supervisors

Arts and humanities	Physical sciences
Research student usually works independently from supervisor	Research student and supervisor often work together, akin to a team
Research student likely to see supervisor only for scheduled meetings	Research student likely to see supervisor on a day-to-day basis
Research may not fall into supervisor's area of expertise / interest	Research will definitely be part of supervisors expertise / interest
Unlikely to be postdocs around	Likely to be postdocs around to advise
Information search is large proportion of the research student's work	Whilst still critical to research much less information search is required; lab work and experimentation means staying up to date and managing references is correspondingly a smaller task

### Evidence and detailed analysis

Supervisors see broad differences between subjects in the nature of supervision and research, the most common being the split between the physical sciences and arts / humanities. Table 3.1 shows a highly simplified synthesis of some of these differences.

Despite these apparent relevant differences, the effect that the differences have on the way that research students see their supervisor with respect to information literacy is minor. Research student survey data were analysed for differences between (1) arts and humanities, (2) social sciences, and (3) physical and life sciences<sup>40</sup> and engineering. For example:

- There were no differences in the overall top ranking of supervisors as a source of information and guidance for the combined set of elements of information literacy.
- Statistically significant differences<sup>41</sup> between the primary nature of the help provided by supervisors (across the whole of information literacy) were all minor (differences in results between the subjects were 5% or less).

- Overall perceptions of whether the supervisor provided sufficient support in information literacy were very similar with just two minor statistically significant differences (6% for both).<sup>41</sup>

Instead, what emerged from the qualitative data is that differences are at the research group and departmental levels, as well as at the level of individual supervisor and research student (as highlighted later on page 29). Evidence for this comes from:

- Published academic literature that describes different supervisory conceptual approaches, styles, activities, etc, as a whole rather than the part that information literacy might have.<sup>42</sup>
- Qualitative data from case studies including interviews and focus groups with research students and supervisors showing that different research groups and departments vary greatly in their approach to researcher development, for example:
  - *“Certain research groups and certain supervisors already have [a conference calendar] that [is] provided to the students so that you know beforehand what conference you’re targeting... we don’t and it would be amazingly useful”*

40. Note that life sciences does not include medicine nor dentistry

41. Using 2-prop t-tests assuming equal variance; all at the 95% significance level

42. See, for instance, *How are doctoral students supervised? Concepts of doctoral research supervision*, Studies in Higher Education, 33 (3), pp267-281, Lee, 2008; and *Facilitator, director or critical friend? Contradiction and congruence in doctoral supervision styles*, Teaching in Higher Education, 13 (4), pp489-500, Deuchar, 2008.

- *“My department has very little money for facilities [...] or conferences. It also has very patchy administrative support: some is good, some is terrible.”*
- *“I have received very strong individual support from my supervisor and excellent generic skills training from the university. Subject-specific training at departmental level has been minimal and could be much improved.”*
- *“Delivery is very patchy across faculties, and set to get more uneven as departmental responsibility to provide training has just been dropped.”*
- The influence of research group culture is addressed by research student survey data and there is a broad spread of experiences. Respondents were asked whether, with respect to information literacy, they agreed with the statement that “the culture in my group supports attendance on relevant training courses and seek[ing] support”. A more even spread of answers (n=907) was given than whether they got enough support from their supervisor, indicating that research groups do vary.
- Case studies showing that regulation and policy setting is frequently at the departmental level (this might cover, for example, the number of supervisors per student, minimum contact time, probationary period, assessment, mandatory training, etc).

These differences seem to relate as much to general researcher development as to information literacy.

### *Implications*

The issues highlighted in this report are likely to be widespread ones which need to be addressed at the level of the research group and department as much as subject-level approaches. Later findings show minimal variations with respect to mission groups (see page 30) but significant differences between individual supervisors (see page 29).

## **Supervisors' views on their research students' needs**

### ***Information literacy as a concept is not generally recognised by supervisors***

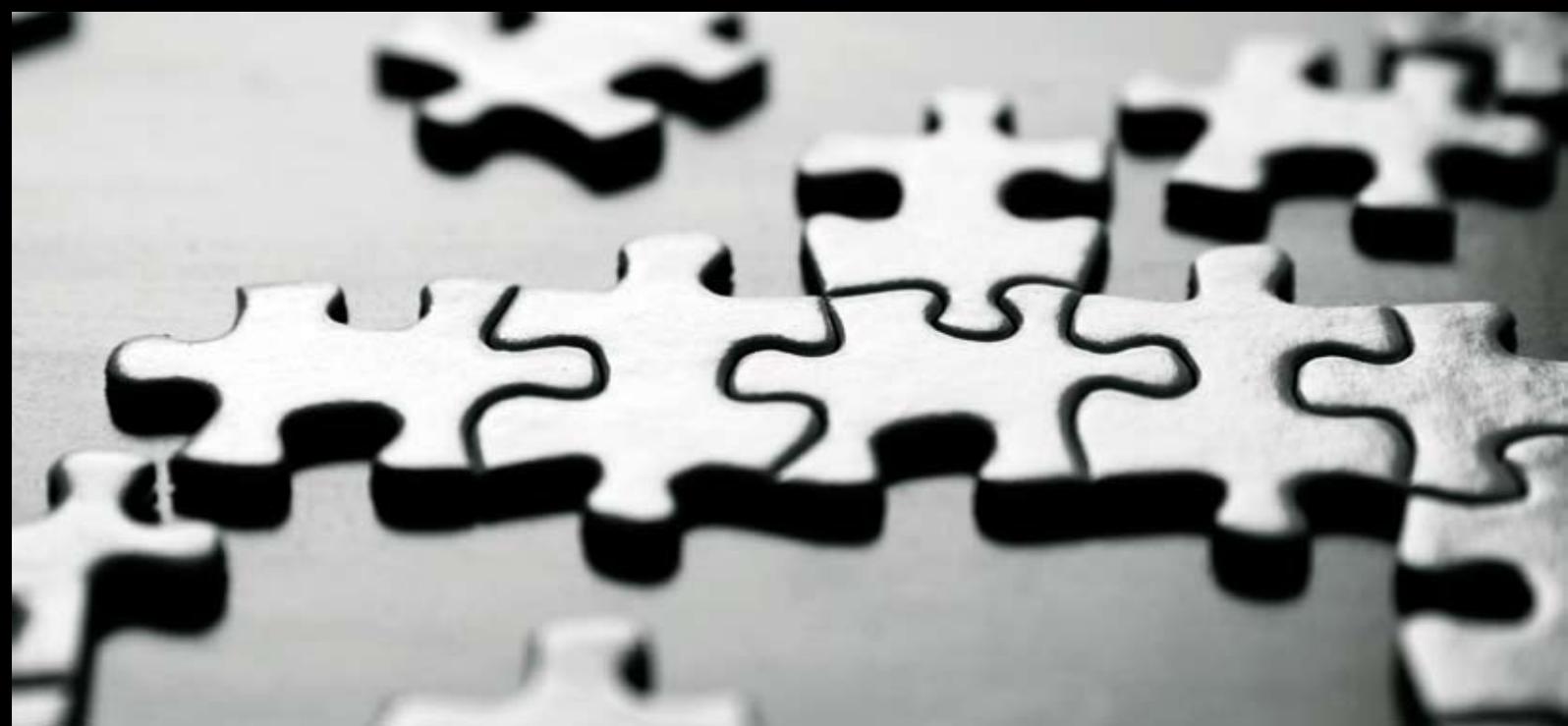
Supervisors do not generally recognise the overall concept of information literacy. Many supervisors are engaged in developing these skills in their students without distinguishing between those capabilities listed for this study as information literacy and the other elements of academic practice. Some supervisors saw a mismatch in the list of elements between, on the one hand critical thinking, and on the other hand, the individual capabilities which they saw as part of the larger research task or workflow.

### *Evidence and detailed analysis*

Supervisors, when asked, tend to see themselves as having a clearly articulated role – though this seems to be more to do with supervision in general than with information literacy. Table 3.2 provides a sample of supervisors' views in their own words.

Table 3.2: Supervisors describe their roles in information literacy

What is your role in developing the information literacy of your research students?	Post, Subject, Mission Group
<p>“My role is in helping them to identify where there are gaps in their knowledge and skills, and directing them to the right sources so that they can learn. I'm two years off retiring, so I couldn't pretend to keep up with these skills.”</p>	<p>Clinical Lecturer, Psychology, 1994 Group</p>
<p>“The main supervisor should oversee and help develop these [skills], as long as that supervisor is supported by regular training and updates by the university or at least the dept/faculty. The university should have and clearly advertise, regularly, suitable training by specialists such as librarians. The students themselves must share this responsibility, once they have been informed of the types of abilities they need. Again, suitable training needs to be made easily available to them, regularly.”</p>	<p>Senior Lecturer, Law, non-affiliated</p>
<p>“The role is to provide supervision. This sounds simplistic - but often you get supervisors who supervise for their own benefit. My role is to provide support where that person needs it. I would be the liaison where others are involved and continue to work with the student. I should follow up with them after they have been on training to reinforce the learning.”</p>	<p>Senior Lecturer, Law, University Alliance</p>
<p>“I'm a pivot and filter. I have a role in making sure that the structure of what they're trying to write is right; for example, make sure it has a viable research question, the ethical implications have been considered, etc. Second, I'm someone who challenges them, and makes sure they don't go stagnant.”</p>	<p>Assistant Head of School, Education, Million+</p>
<p>“My role is to draw out their skills and assist them in devising their experiments.”</p>	<p>Senior Research Scientist, Microbiology, University Alliance Member</p>
<p>“The role is difficult to specify... it's so individual. With some students you'll be guiding through doing really specific training and hands-on mentoring. With others you'll be signposting to seminars, books, individuals, etc.”</p>	<p>Reader, Occupational Therapy, non-affiliated</p>
<p>“My approach is different depending on whether it is a generic skill, such as literature search, open access or use of IT, or a specific one such as choosing where to publish. In the former the student should go to the library for help. The latter is something to target in a supervisor meeting.”</p>	<p>Professor, Quantitative Social Research, Russell Group</p>
<p>“For hands-on people it's seen as an apprenticeship role... encouraging the student to be autonomous, and helping them to be so.”</p>	<p>Senior Lecturer, Law, Supervisor and Research Student Training Programme Manager, Million+</p>
<p>“My role is to 'prod'... to say to students that these opportunities are there. I suppose one of the principles that I would use, is that I'd always hope that my students would become more savvy than I am”</p>	<p>Reader, Classics and Ancient History, Russell Group</p>



Previous research has explored academics' conceptions of information literacy. For example, one study – looking at English and Marketing - concluded that academics' conceptions of information literacy share some similarities with, but also differ from, librarian-generated frameworks, and that different academics have different conceptions of information literacy.<sup>43</sup> The supervisor data were not collected to build on these earlier phenomenographic studies. However, such considerations do lay the foundation for considering the supervisors' attitudes and role in information literacy and are therefore considered important. Examples of views from interviews and focus groups with supervisors that indicate that information literacy as a concept is not consistently recognised include:

*"Several of these things lie at the heart of the supervisory process... information searches, critical evaluation and where to publish. They would be taught in a practical and concrete sense though... not an abstract process for searching for information but setting a task to investigate a new area, seeing what the student comes up with and reflecting on their success."*

*"[Referring to the list of information literacy elements] I would label them as information literacy, academic literacy and research literacy. So the first [element] I had as information literacy, the second one as general academic literacy, the third one research literacy... 4th information literacy, 5th research literacy, 6th academic, 7th academic, 8th academic and 9th research..."*

*"The first two [elements] are absolutely fundamental, that's what makes you an academic researcher, the middle ones are I think matters of convenience or efficiency, organising your information, make an archive, use EndNote, has nothing to do with the quality of research overall but it is helpful, and the last ones it seems to me are considering opportunities for publication so there are three very different issues behind this list"*

*"I don't even think that all these things are information literacy... some of these things are about understanding what it means to enter an academic community. This is more and more crucial in the PhD process."*

The supervisor survey data covers how respondents see "their role as supervisor changing (if at all)" for the elements of information literacy as a whole. This was an open response question, but some of the most common responses were quantified in subsequent analysis. Some respondents (22%) saw the role as not changing, though several (11%) see the role changing because there are more sources of support for research students than in the past, and a few (6%) saw more support for research students as required (n=290). Many of the other responses were more reflective of changing supervisory activities rather than changes in the role itself.

The qualitative data from discussions with supervisors did not reveal practical distinctions between information literacy versus transferrable versus other skills. However, a strong distinction is made between generic and specific

43. A comparison of UK academics' conceptions of information literacy in two disciplines: English and marketing, Library and Information Research, 29 (93), pp4-15, Webber et al, 2005.



skills. It is also noteworthy that some supervisors see 'specific skills' as more granular than at the subject-level.

Similarly there is little mention, despite some prompting, on the role of information literacy on careers outside academia. However, a more frequently made distinction, and one that is increasing, is between creating a well-rounded researcher and just getting the student successfully to their thesis and viva. For example, one supervisor said that "there's more expectation of training people for the whole experience of being an academic, not just focusing on the research content itself".

Several of the selected elements of information literacy refer to innovative technologies and new ways of working and, as a consequence, it is perhaps no surprise that ICT skills and information skills are conflated by supervisors. However, some went as far as categorising them as mostly technical:

*"Much of this seems to be about technical matters which I do not see as my role"*

*"I don't see the questions on critical analysis of others' work as being related to the other IT-centred questions. It seems out of place... as it is the core of what we do in the humanities"*

The American Library Association (ALA) makes a clear distinction between information literacy and information technology: "Information literacy... is an intellectual framework for understanding, finding, evaluating, and

using information--activities which may be accomplished in part by fluency with information technology, in part by sound investigative methods, but most important, through critical discernment and reasoning. Information literacy initiates, sustains, and extends lifelong learning through abilities which may use technologies but are ultimately independent of them".<sup>44</sup> The supervisors in this project did not make such a distinction.

### *Implications*

Information literacy is not a term which currently resonates with many supervisors. Understandably academics think in terms of research tasks and workflows, and supervisors tended to talk in these terms rather than in specific sets of knowledge, skills and behaviours. Most supervisors would, however, be looking to develop many of these skills in their research students, using the wider concepts of academic practice and scholarship. This has several possible implications:

- By subsuming information literacy into broader academic practices, there may be a danger that individual elements are overlooked. It may also be more difficult to judge whether and how information literacy is embedded in supervisory practice.
- Proponents of the concept of information literacy highlight the benefits it reaps not only in academic life but in the workplace and society as a whole. Supervisors, however, did not suggest a link between information literacy and careers outside academia.

44. [www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm](http://www.ala.org/ala/mgrps/divs/acrl/standards/informationliteracycompetency.cfm) (accessed 15 June 2011)

It may be that the transferability of the skills and aptitudes are less clearly identified when wrapped up within the broader concept of scholarship and academic practice, or that supervisors did not connect research students with careers outside academia for the purposes of the project.

- The project's surveys and the focus groups used the set of nine example elements of information literacy (page 15) to illustrate the role of supervisors in developing students' information literacy. If supervisors do not recognise the grouping of these elements as a coherent concept, this may affect their responses, which would imply the need for careful interpretation of findings.

It remains to be seen whether the Researcher Development Framework, together with the new researcher lens for the SCONUL Seven Pillars for Information Literacy will gradually encourage adoption of the concept by academics.

***Most supervisors identify that research students need support to develop their information literacy, with greater support required in some areas***

Whilst information literacy as a concept is not generally recognised by supervisors, the vast majority consider all the elements of information literacy as relevant. Most see that research students need support to develop their skills and competences. In discussion, supervisors tend to have a well developed sense of when the skills and understanding become relevant, and see how their research students vary in their starting points and subsequent progression.

*Evidence and detailed analysis*

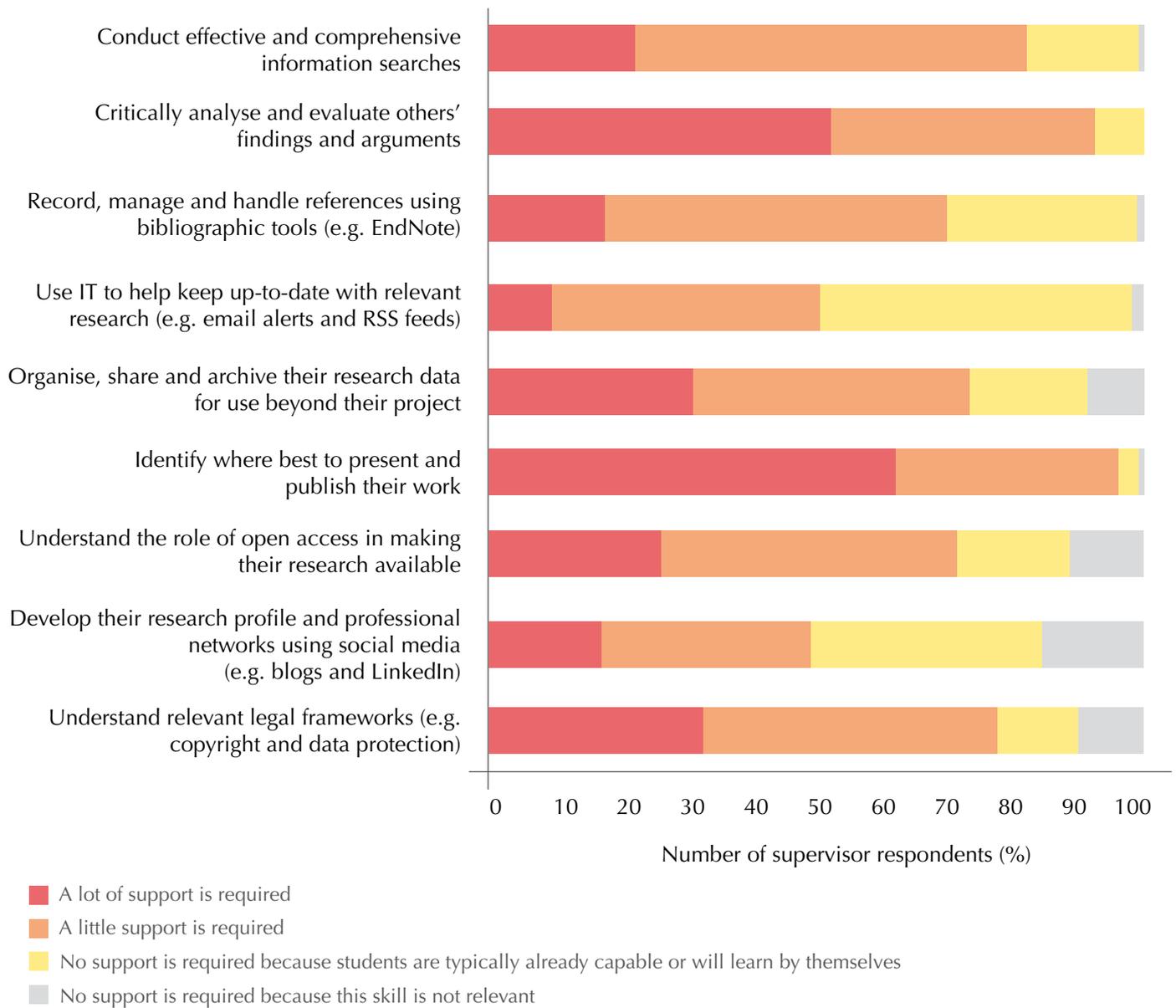
The supervisor survey did not examine the supervisors' ranking of the importance of the different elements of information literacy. However, it did ask what supervisors consider to be relevant and not relevant when asking "in your experience, do your research students typically need support in each of the following areas [of information literacy]". Generally where support is not seen as required it was because research students were seen as capable, rather than because of perceived irrelevancy. Even the 'least relevant' element ("Develop their research profile and professional networks using social media") was still thought relevant by 85% of supervisor respondents.

Supervisors see research students as needing most support in developing their ability to analyse critically and evaluate others' findings and arguments, and to identify where best to present and publish their work. In terms of where supervisors see research students as most capable, about half see their research students as being typically capable of using IT, or to learn it by themselves, to help keep up to date with relevant research. About a third of supervisor respondents believe the same for students developing research profiles and professional networks using social media.

Figure 3.1 shows the supervisor survey data on both relevancy and perceived support requirements.

The survey data are supported by qualitative data from supervisor interviews and focus groups where, whilst they may be perceived in different ways, all the elements were generally seen as relevant. Supervisors are also aware that the importance of different elements of information literacy depends on the different stages of the PhD process. For example one supervisor said "if we're ranking them [the elements of information literacy], it's also the case I guess that many of them would change significantly, or the ranking would change, at various stages of the research process, and some of these would be particularly appropriate at the beginning or at the end and equally I think some of them, [and] this is the nature of academic research, there's also the element of learning by doing".

Figure 3.1: Supervisor survey data on whether respondents see elements of information literacy as relevant and whether support is required (n=382)



Of course asking about 'typical research students' hides variation between individual students, and supervisors know this. One summarised the range by commenting "There is huge variation between students - one of mine asked 'what's a literature search', and another started by saying 'I've done mine'". When variance was explored in more detail, many supervisors provided typical characterisations of different student types including:

- **Domestic research students:** for example, "We understand pretty well home students who've been through the home education system, but even then there are different levels of skills in information searching, and critically reviewing information: some are the pretty much the finished article, whilst others are essentially clueless."
- **Research students that had come from a Masters:** for example, "One sort of student is that straight out of a Masters course; they're used to the subject and institution and have already learnt about the library, computers, etc"; "If a student has a taught master's degree when they start their research degree they tend to be better prepared in some areas."; "The taught MA is one of the ways we train our PhD students."
- **Overseas/international research students where English is not their first language:** for example, "Some students that you think are information literate actually aren't. For example, in doing literature searches it turns out that they actually need a lot more support. This tends to be where English isn't their first language. For example, I have two students that are verbally very able, but really can't engage with written materials and write their own work."
- **Overseas/international research students from a more deferential culture:** for example, "Some students just think that if something is written down then it must be trustworthy. Culturally, they're not used to saying 'you're wrong' or 'I disagree' because in their schooling system they're not allowed to question

*their professors. I have had some success in breaking students out of this. With others it hasn't happened and it's very limiting to their research... they won't make PhD level."*

- **Mature research students returning to academia from industry:** for example, "Everything is new to them! It's quite daunting. The first six months can be very painful."

In discussing research student training/development/support needs with supervisors, a structured and systematic assessment of needs (eg via a PDP, framework or tool) was notably absent. Questions were asked at the supervisor interviews and focus groups to identify common practices in this area, and there was very little consensus nor an indication that formal activity of this sort happens regularly. Supporting this, research students reported little formal skills and development planning with their supervisor, though the research student survey data suggest that only a small minority of research students don't have opportunities to discuss knowledge and skills gaps with their supervisor.<sup>45</sup> Supervisors' most common approach was to set early research and written tasks and to assess the results. No use of formal frameworks was mentioned. Some departments and PhD courses specify particular reports (eg at the three month, six month, one year, etc stage) that supports assessment of skills and whether skills development has been undertaken. It was more common that research students undertook some element of self-assessment, but this was not linked back to their supervisors.<sup>46</sup>

### Implications

Since structured and systematic assessments of needs were absent, good practice could be identified and promoted to supervisors. Common means of identifying needs may also help build comprehensive pictures of what support is required by who and when, and to plan the means by which those requirements might be met.

45. Respondents were asked to what extent they agree with the statement "I have opportunities to discuss with my supervisor/s any knowledge and skills gaps I have", with 1% stating 'Strongly disagree' and 5% stating 'Disagree' (n=907).

46. It should also be noted that one case study institution has done some research (pending publication) on the reliability of research students' self-assessments on their ability to evaluate information, and this indicates that, overall, self-assessment is poor. A number of other studies suggest that undergraduates' self-assessed ratings of their information literacy skills were higher than indicated by the scores that they achieved in objective tests, for example, *Assessing information literacy among undergraduates*, College and Research Libraries, 62, pp71-85, Maughan, 2001. Another undergraduate example, is *Self-efficacy: a concept closely linked to information literacy and lifelong learning*, Journal of Documentation, 59, pp635-46, Kurbanoglu, 2003. However, at least one study does suggest that self-assessments can sometimes be accurate, for example *Undergraduate library skills: two surveys at Johns Hopkins University*, Research Strategies, 11, pp188-201, Coupe, 1993.

***There is a resistant minority of supervisors who are not engaged in developing the information literacy of their research students***

Despite encouraging evidence that many supervisors are engaged in developing students' information skills, there is a minority of supervisors who do very little in this area. Both supervisors and students discuss this minority which is resistant towards meeting their students' needs in this way. This can have an adverse effect on some students.

***Evidence and detailed analysis***

A consistent view on this topic emerged from the qualitative data. A selection of views has been chosen from different perspectives:

**Supervisors discussing other supervisors:**

- *"There is massive variety across supervisors... [from] some supervisors who try and do everything for the student, to those who rarely meet and don't get anything from them."*
- *"Supervisors generally don't see the point of researcher development. They are happy for their students to attend conferences and seminars, but don't care about development even to the extent of thinking it's not important to take training beforehand in how to do make effective use of conferences and seminars... Some supervisors are very hands-off and don't take much interest - if student fails then so what. They don't mind being assigned lots of students as it won't eat up their time."*
- *"Supervisors should encourage students to pursue training in skills beyond lab work. Too many supervisors simply want their students to be working in the lab constantly, without doing anything else."*
- *"It's not age or amount of training that characterises a supervisor... it's who you are. You're either proactive and hands-on or you're not."*

**Heads of department/faculty discussing supervisors:**

- *"Younger academics are much better at engaging with [skills development] than older academics who 20, 30 years ago they had none of this. The younger academics are more comfortable with it as they've experienced it in the last few years."*

- *"All supervisors should know about the importance of these skills and the need to take a proactive approach. The younger ones who've been through the training themselves will know... However, there is a big gap between what info you give them and what they do! The perennial problem with academics is that they're given stuff to do and not all of them will bother."*

**Research students:**

- **Supervisors unengaged with information literacy:** *"To be honest, I think my supervisor would pooh-poooh some of these ideas (social media etc) and tell me not to waste my time on them...! On items like the critical skills side of things, my supervisor just assumes I can already do this... would be nice if he could at least have alerted me to some of the study skills resources ("How to do a PhD" type books for example) which I only really discovered when it was too late."*
- **Unengaged, reactive supervisors:** *"It's such a crapshoot, I mean you have people in my department who have really amazing supervisors who are sending them information and links and you know, 'look up that', 'go to this conference', 'do that' and then you have supervisors, like I have, who are completely hands-off and its only if I go to them with a question will then I get a response."*
- **Supervisors who are not engaged with researcher development:** *"The only support I get from either my supervisor or my institution is what is in the best interests for them. They are not interested in my wellbeing, career or future, if it doesn't directly benefit them in terms of papers or findings that they can exploit from me. I am purely a dogsbody to produce new insights and findings for them to cream off."*
- **Wider problems with supervisor and/or group:** *"The group I am in is stuck in a 1950s deference culture time-warp. The most important thing is to know your place. I think it is a highly discriminatory environment. They have no real interest in interacting with me at all."*



The nature of the comments and discussion suggest that supervisors' overall role determines their role in information literacy. If supervisors engage with researcher development, then they will most likely engage with information literacy topics. Conversely if they do not engage with researcher development, then they are unlikely to engage with information literacy. Many of the supervisors attending the focus groups – all of whom were 'engaged' – were eager to talk about all aspects of researcher development and to find the time to do this.

### How one supervisor became engaged

At one Russell Group institution, a supervisor was adamant that his courses were of no interest to his students and that they never attended any of them. When he was shown attendance records confirming his students did in fact go to these courses and it transpired that they actually found them valuable his position totally changed, and he has subsequently become heavily involved in the graduate centre and the facilitation of these courses. Research students in that institution's focus group also talked of the need for, and power of, student testimonials to convince supervisors of the value of training and support.

It is also noteworthy that research students do not necessarily want their supervisor to provide any of these skills, since they appreciate their supervisors more for their input to the research project. For instance, one research student commented that "I prefer to use my supervisor for help with research and use other less busy resources in

other areas" and another went further "I don't think most of these are the supervisor's responsibility.

Other university staff, librarians ...etc are better suited for these queries. Also, the student should be able to sort out most of these things. In my view, the supervisor is there for academic guidance and related support (with publications, presentations and similar)."

However the research student survey data highlights students who receive less support than they'd like from their supervisor. The data show that a significant minority of research students do not get sufficient support from their supervisor: "For these areas of information skills as a whole... overall, I am getting enough support from my supervisor" 8% 'Disagree' and 5% 'Strongly disagree'.

This level of dissatisfaction is the same for part-time and full-time students and is unaffected by their place of residence. However, it is slightly higher for social science research students than to arts and humanities students. The level is higher for those who see their supervisor infrequently and for those in their fourth year and above. By mission group, the level is fairly stable, but with a slight increase for students from institutions without any mission group affiliation.

Other questions were asked of the supervisors' ability, and, for context, the research group and institution. Based on these results (below) a rough estimate has been made of the scale of disengagement. Overall the proportion of research students who do not get the support from their supervisor that they believe they need is estimated to be at least 5% and perhaps as high as 15%.



Table 3.3: Research student survey data indicating that a proportion of research students do not get the support that they perceive as required (n=907)

<b>“For these areas of information skills as a whole, please state to what extent you agree with the following statements...”</b>	<b>% that disagreed <sup>47</sup></b>	<b>Supervisor specific?</b>
I have opportunities to discuss with my supervisor/s any knowledge and skills gaps I have	6	✓
My supervisor/s make a real effort to understand any difficulties I face	10	✓
I have received good guidance in my literature search from my supervisor/s <sup>48</sup>	15	✓
My supervisor/s are able to identify relevant training courses	19	✓
My supervisor/s actively encourage me to attend relevant training courses and seek support	18	✓
The culture within my group supports attendance on relevant training courses and seek support	18	x
My supervisor is open to me asking questions	3	✓
Overall, I am getting enough support from my supervisor <sup>49</sup>	13	✓
Overall, I am getting enough support from my institution	15	x

47. Either “Disagree” or “Strongly disagree”

48. This figure matches very closely to the identical question in the PRES 2009 results, suggesting it is robust

49. Breakdown as per page 30. The 5% that strongly disagreed sets the lower limit on the estimate

## Implications

Whilst it is not the purpose of this report to examine different supervisory styles, there are big differences in the level of support that research students perceive they are getting from their supervisors. One PVC Researcher who was aware of the issue of unengaged supervisors postulated a way to improve the situation when he said “*how can we convince supervisors that information literacy is important? Show them that it results in better research...*”. However, many regard the problem as a generational or personality one, with little opportunity for real improvement across the board. The way forward may be better institutional or departmental support for information literacy development for those students who do not get the support that they require from their supervisor.

### Supervisors' roles

***There are elements of information literacy that supervisors and research students consider to be core to the supervisory role***

Given that supervisors are influential and see a need for supporting students, the role that supervisors play in meeting this need is important. This role varies across the nine elements used in the survey; it might for instance involve answering queries as they arise or ‘signposting’ where supervisors direct their students to appropriate sources of guidance. However, there is a more marked role for them when it comes to developing their students’ critical analysis ability and helping them identify where to publish, with more active participation, in advising, training and coaching them. These areas are also the ones where research students most look to their supervisor as a source of information and guidance, and also perceive that their supervisor is helping them most. This indicates that both supervisors and research students consider them to be part of the core supervisory roles.

We consider below the evidence covering the:

- nature of the supervisor’s role for different elements of information literacy, as perceived by both supervisors and research students;
- key sources of information and guidance for different elements of information literacy, as perceived by research students;
- degree of perceived help provided by the supervisor for different elements of information literacy, as perceived by research students.

### *Nature of the supervisor’s role*

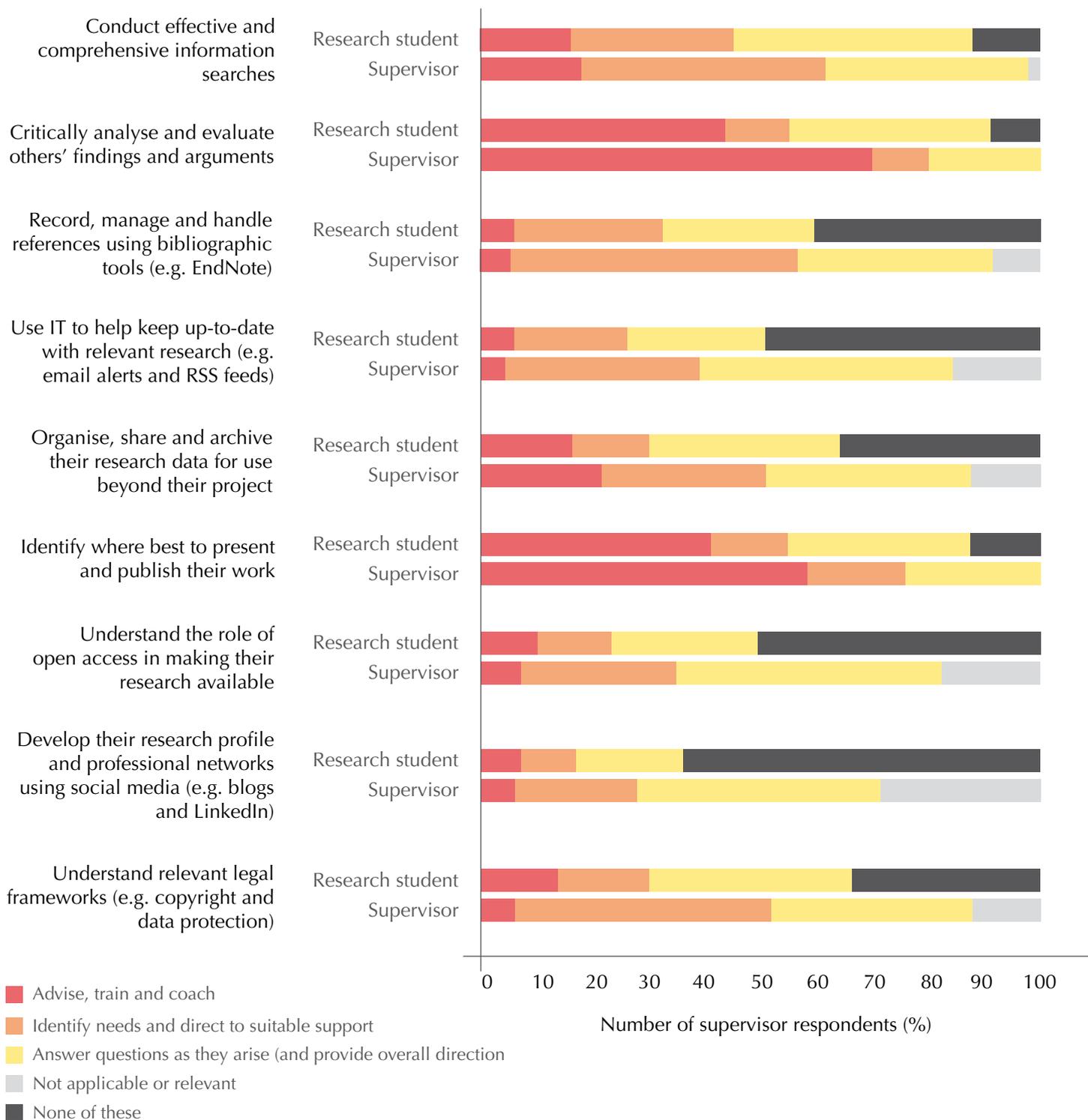
Both surveys collected data on the perceived role of supervisors covering advising/training/coaching, directing and answering queries. Figure 3.2 sets out the data for both supervisor respondents’ perceptions of their role and research students’ perceptions of their supervisor’s role.

The data also show the proportion of research student respondents who believe their supervisor has no role to play – this varies from 8% to 64% for the different elements.<sup>50</sup> This may indicate that the supervisor has other roles to play, or that the respondent does not see the element as relevant.

The data reveal some differences between supervisor and research student perceptions of the nature of the supervisor’s role. There is no immediate reason why this is the case, and is beyond the scope of the project to investigate. This would be an interesting line of future enquiry.

50. Some correlation is evident across the elements – the same 22% of respondents answered ‘None of these’ to the four elements with the highest ‘None of these’ answers.

Figure 3.2: Supervisor survey data on their perceived 'primary role' for supporting their research students for different elements of information literacy (mean n=370) combined with research student survey data on the perceived "primary nature of the help provided by their supervisor/s" (mean n=900)



## Research students' top sources of information and guidance

As well as an overall ranking, the student survey data pinpoint how respondents rank their supervisor as a source of information and guidance for each element of the survey's selected elements of information literacy. Respondents were asked to identify their top three sources of information and guidance for each element.

Supervisors are top ranked in four of the nine elements listed. Table 3.4, below, shows how respondents rank their supervisor(s) for each element, along with the percentage of respondents who selected their supervisor(s) as one of their top three.<sup>51</sup>

Table 3.5 shows how the supervisor is seen relative to other sources of information and guidance for the elements of information literacy.<sup>52</sup>

Table 3.4: Survey data analysis showing how students rank their supervisor/s and other sources of information and guidance for different elements of information literacy (or state that no support is required, or that support is required but not is available) (mean n=888)

Element of information literacy	Ranking of supervisor	% who selected their supervisor(s)	If the supervisor is not #1, who / what is regarded as a better source of information and guidance
Conduct effective and comprehensive information searches	#3	46%	#1 Web #2 Online university resources
Critically analyse and evaluate others' findings and arguments	#1	77%	N/A
Record, manage and handle references using bibliographic tools (eg EndNote)	#6	21%	#1 Library staff, #2 PhD training programmes, #3 Web, #4 Other students, #5 Online university resources
Use IT to help keep up-to-date with relevant research (eg email alerts and RSS feeds)	#7	20%	#1 Web, #2 None required, #3 Library staff, #4 Other students, #5 Online university resources, #6 PhD training programmes
Organise, share and archive my research data for use beyond my project	#1	44%	N/A
Identify where best to present and publish my work	#1	77%	N/A
Understand the role of open access in making my research available	#2	35%	#1 None required
Develop my research profile and professional networks using social media (eg blogs and LinkedIn)	#5	20%	#1 None required, #2 Web, #3 Other students, #4 Required but none available
Understand relevant legal frameworks (eg copyright and data protection)	#1	43%	N/A

51. The ranking gives an indication of the comparative importance, and the percentage the absolute importance. Two of the four #1 rankings for the supervisor have less than half of respondents identifying the supervisor as a choice – implying that a broader set of sources of information and guidance are considered useful than for the other two #1 rankings

52. The surveys summary document explains how the heat map is constructed: *Summaries of two surveys undertaken to support an investigation into the role of research supervisors in information literacy*, Curtis+Cartwright, CC465D006-1.0, 5 September 2011

Table 3.5: “Heat map” of weighted research student survey data against the different elements of information literacy (green=highly ranked; red=low ranked) (mean n=888)

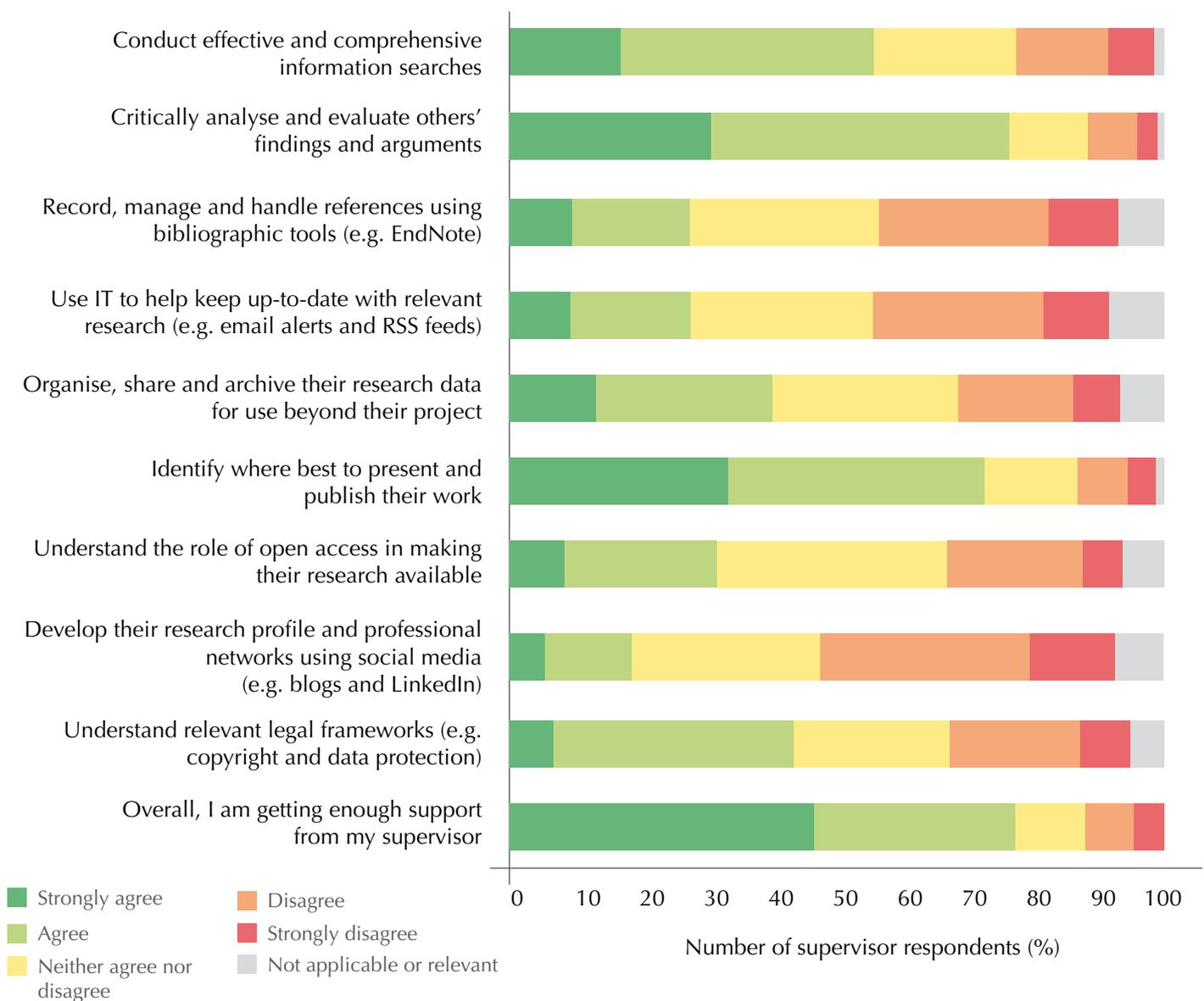
	Other students	(Your) Supervisor/s	Another academic	PhD training programme	Library staff	The Graduate School	Online university resources	Web	Other	None required	Required but none available
Conduct effective and comprehensive information searches	263	427	146	312	362	39	459	503	104	68	29
Critically analyse and evaluate others’ findings and arguments	356	876	404	298	22	33	176	289	135	51	60
Record, manage and handle references using bibliographic tools (eg EndNote)	344	215	104	440	470	87	269	396	163	173	46
Use IT to help keep up-to-date with relevant research (eg email alerts and RSS feeds)	292	200	116	222	304	69	275	604	178	309	112
Organise, share and archive my research data for use beyond my project	276	520	221	229	92	58	138	287	175	316	328
Identify where best to present and publish my work	256	953	473	186	26	43	90	341	96	73	141
Understand the role of open access in making my research available	147	397	191	214	120	82	144	305	140	460	380
Develop my research profile and professional networks using social media (eg blogs and LinkedIn)	325	227	173	180	57	54	84	466	176	602	279
Understand relevant legal frameworks (eg copyright and data protection)	102	510	176	469	183	146	211	305	135	277	156

## Research students' perceptions of the help provided by the supervisor

The student survey data for the question "My supervisor/s are helping me to develop my knowledge and skills in this area [of information literacy]" shows variation

between the elements, for example 'Strongly agree' varies from 4% to 32%.

Figure 3.3: Research student survey data on how well respondents see their supervisor/s as helping to develop their information literacy (mean n=903); the final bar shows whether respondents perceive that they are getting enough support overall from their supervisor in information literacy (n=907)



53. This final bar is included for context and covers respondents' perceived overall support from their supervisor (from the question "For these areas of information skills as a whole... overall, I am getting enough support from my supervisor"). It shows a more positive view of their supervisors than the data above on whether the supervisor is helping them to develop their knowledge and skills – and therefore asks questions around why a supervisor might be seen as giving enough support whilst not being seen as helping to develop knowledge and skills (eg a supervisor has more of a signposting role, or that the student has less of an expectation from their supervisor).

## *'Core' supervisory roles*

Two elements of information literacy are perhaps distinguishable as part of the 'core' supervisory role. This classification is based on most supervisors seeing it as an important and active role and on research students looking to their supervisor for support in these elements. These are research students' abilities to "critically analyse and evaluate others' arguments", and "identify where best to present and publish work". An earlier finding (see page 26) also showed that supervisors generally see these as where students need most support.

The qualitative data also support this classification of core supervisory roles, but with greater prominence attached to critical analysis. This is perhaps because it requires a sustained developmental effort from the supervisor. Critical analysis was much discussed by supervisors and one supervisor's (Reader, Business, Million+) example of practice is given below.

### **How one supervisor goes about developing critical thinking**

"The key task, an intellectual rather than administrative one, is to support the development of skills with regard to analysing and critiquing existing studies. This requires a confident, intellectual leap but presupposes substantial knowledge of the topic in question, as well as different methodological and philosophical approaches.

There is a distinction between information search and information use, and the critical thinking and analysis is the second. In the first, I ask them to tell me what information there is and to summarise it, drawing out key themes, issues, perspectives, etc. In the second, I ask them to tell me where the omissions and gaps are, in relation to their particular research objectives. Students do vary in this second activity, and this is the one that I think is key. The reasons for variation differ: the student might lack confidence, might be used to treating the names in the literature with reverence, or find it difficult to articulate. It's easier when you've got two or more information sources that have opposing views. This process is very helpful in identifying questions that will lead to their final contribution to research.

This process needs to be tailored to the student. I need to find their blind spot. Are they better with some materials, or a certain way of thinking? Of course, this process relates to my own beliefs and thinking too. The process is based on conversations, but also very much written material. Verbalising an argument is easier and fuzzier than writing it down. Can they develop a view and develop and articulate it coherently and clearly? They might be stumbling towards their final research area but that's fine. I never tell them what to think, but ask them questions to get them thinking. What's wrong with the literature? Can you reframe the question? ... What do you think? ... lots of open questions. Of course, I need to make sure they're interested and motivated in whatever they end up with; they can't be led to something they don't own. This process can take six or seven years, but over time you see their intellectual confidence grow. Eventually they might say that they disagree with you - a clear sign that they've developed their own judgement.

It's not a mechanical tick box approach. We need to test ideas out and see if they fly. The pressures of REF and 'publish or perish' actually help as institutions now realise they need to put students out to conferences, and that's a learning process in itself. Then it's not just about [the student] persuading me, but persuading an audience. Of course I need to be careful with these opportunities; that they can cope: the experience needs to be safe, but also dangerous enough that they will learn something. It must be a worthy and reasonably challenging test but without undermining their confidence."

Overall, the research student survey data show some variation in the perceived level of active participation of supervisors. For instance, overseas/international respondents tend to perceive slightly more of an active supervisory role, as do respondents in earlier years of study, and those who see their supervisor(s) more regularly.



## Other roles

Beyond these core roles, supervisors tend to be less active, acting as signposts and answering questions as they arise. Four further elements stand out within this:

- Conduct effective and comprehensive information searches: Whilst not seen by supervisor respondents as core to the supervisory role. This is an area where supervisors do help research students. For instance, whilst research students look primarily to online materials for this element, about half of them look to their supervisor as a source of information and guidance. Furthermore, nearly all research students see their supervisor as having a role – but often more of a reactive one in answering queries and providing overall direction. Supervisors also see a sign-posting role for themselves; 90%+ of them are aware of training and support provided by their institution (page 42).
- Organise, share and archive their research data for use beyond their project: Supervisors are particularly influential and were top-ranked as a source of information and guidance for this element. However, as suggested below, supervisors do not seem to be more confident about providing advice in this area than in any of the other non-core roles (page 46). Qualitative evidence indicated that research data practices are often influenced by departmental or research group policy or practice and by the research project and/or consortium.
- Understand the role of open access in making their research available: Many student respondents do not see that support is required whilst others would look to their supervisor. Most supervisor respondents see that some support is required, and nearly half see themselves as having a reactive role in answering questions and providing overall direction. Again supervisors' confidence to advise was lower for this element than some of the other elements (page 46).

- Understand relevant legal frameworks (eg copyright and data protection): The legal elements in information literacy cover such issues as data protection, freedom of information and intellectual property (particularly copyright); and in practice often plagiarism and ethics too. Supervisor respondents do see the need for a lot of support in the legal aspects (see Figure 3.1, p27) and see themselves as having more of a sign-posting role. Interestingly research student respondents saw the supervisor as more important for information and guidance on legal aspects than the supervisor respondents saw themselves.<sup>54</sup> A later finding shows that supervisors are less confident for this element than some of the others (page 46). Qualitative data indicates that this area is a potentially confusing and changing mix of national and supranational legislation, professional and institution policies and practices, and academic custom and practice.

For the other three elements used within the project (record, manage and handle references using bibliographic tools (eg EndNote); use IT to help keep up-to-date with relevant research (eg email alerts and RSS feeds); and, develop my research profile and professional networks using social media (eg blogs and LinkedIn) supervisors had less influence and were seen to be helping less too.

## Implications

Supervisors do not have a single role in information literacy. Instead they tend to have a clear sense of, first, their overall role as a supervisor; second, their core roles in information literacy, as outlined above; and, third, their more supplementary roles for other individual elements. Even these supplementary roles have some distinctive characteristics. Overall, this calls for a nuanced approach to engaging and supporting supervisors.

54. In the supervisor survey data, supervisors are third ranked position for this element (after training courses and library staff), whilst research student respondents ranked supervisors as first.

***From a range of supervisory practices related to information literacy, developing students' academic writing is commonly seen as key***

Supervisors have a range of practices that help develop their research students' skills and competencies. Many use early written tasks to assess and build these skills, as academic writing is intrinsically linked to critical thinking and formulation of ideas.

The following list, derived from those mentioned by supervisors when discussing information literacy, covers a wide range of typical supervisory practices that can relate to researcher development:

- **PhD application:** assessing and commenting on understanding and skills;
- **Induction:** explaining research group practices, institutional regulations, sources of support, etc; providing tips on resources and literature searches, an example paper, etc;
- **Day-to-day interaction:** answering questions as they arise, reminding about data backups, etc;
- **Regular supervisory meetings:** discussing research progress; providing opportunities for posters, papers, conferences, networking, drafting grant letters, etc; discussing training and support needs and solutions; discussing internal reporting requirements; discussing writing and delivering presentations; reviewing and advising on academic writing, including appropriate styles and referencing for different tasks including grant applications, papers, conference proceedings, etc;
- **Research group seminars:** organising journal clubs, and reviewing and providing feedback on student presentations on their own and/or others' findings;
- **Departmental / school / institutional research days or seminars:** attending and participating as desired or as necessary;
- **Delegation of tasks:** assigning journal reviews, research students to undergraduate projects, formal / informal mentoring responsibilities to postdocs, etc;
- **End of year review:** reviewing research and skills and completing the necessary reporting.

Developing their research students' academic writing is a central role for supervisors. Whilst this development can be supported by courses, seminars and academic coaching, supervisors often take the prime responsibility. 'Academic writing' arose as a key topic in many of the interviews and focus groups with supervisors. Crucially for information literacy, developing an academic writing style is considered by supervisors to relate as much to the underlying critical thinking and formulation of ideas, as the writing skill itself. Supervisors can use it as an entry point into developing critical thinking, referencing and use of the literature.

### **Supervisors coaching their students on academic writing**

A team of sports psychology and sports sociology supervisors in a centre at a Million+ university places heavy emphasis on supporting their students with their academic writing. One supervisor commented "In the early stages of the research, we encourage them to be writing these proposals and a lot of our meetings will be geared around not just 'well there's your comments go and work on them' but explaining why you would give those comments so they can understand that critical analysis that we would hopefully bring to the piece of work, so our meetings have been largely based around the comments and exploring why those changes are made."

A colleague described a variant on that practice: "The use of 'track changes' in Word has been really useful, because it shows how well we would make changes to a piece of work as well as what the student originally wrote, so they can document it...but then taking that a step further what I've found really works quite nicely is when you actually work on it together so the student sits down [with you], I'm not saying all the time because it's quite time consuming, but you can actually work on a section and the student can then make the link between what's been changed and why its been changed and how its been changed as opposed to just seeing an original version and an end version... they can actually

see how you as the supervisor, maybe who's done more writing has made that transition... For [one student] it was a breakthrough in improving their writing."

Coaching students' academic writing takes time, as the supervisor continued "I know having gone through it with one of the students, I'm involved in his supervisory team, we went through about ten drafts of a manuscript and I think over that time they began to realise that actually it's not the first draft that gets published and you've got to go through this evolutionary development, and then it was quite nice at the end of that process when we submitted it, for him to turn round and say 'actually I can see that what I've handed in is markedly different and better than what I started with.'"

To support the learning the supervisor has to manage the relationship at the same time: "[another student] submitted their [report] to us and I think their expectation was that it would be sent straight off and when after about six or seven revisions a student starts to get elements of frustration... we sat down and said 'you seem to be a bit frustrated today' and he's like 'well this is the umpteenth go I've had at it'....we just didn't infer that actually he knew that that's what he had to do, and now he accepts that that is the process."

### **Supervisors referring their students to help**

One Russell Group case study institution has an 'academic coaching unit' where supervisors can refer students who need additional help. This covers writing literature reviews and academic writing (and even working with the supervisor) but a lot of support is on writing the thesis. The unit isn't restricted to supervisor referrals, and students can also attend of their own accord.

### *Implications*

Given that developing research students' academic writing ability is a key focus for supervisors, and a route into other areas of information literacy, it may be possible for information specialists to use academic writing to engage supervisors to information literacy.

### **Supervisors' views on other sources of information and guidance**

***Supervisors place a higher emphasis on institutional support for their research students than research students do***

Both supervisors and research students agree that supervisors are the most important source of information and guidance across these areas for research students, and that training is important too. However, there is a qualitative difference between what other sources of information and guidance students prefer, and what their supervisors recommend. Research students look to their peers and the web, whereas supervisors believe that institutional support, for instance library staff and online university resources would be better.

### *Evidence and detailed analysis*

Both surveys gathered data on the top sources of information and guidance for research students, which allows rankings for rough comparison to be drawn. Table 3.6 shows these rankings for the elements of information literacy as a whole.<sup>55</sup>

55. The table is not an exact like-for-like comparison as the questioning, and number of permissible answers, was different for supervisors compared with research students. For the supervisor survey the question was "For the following areas [of information literacy] who or what do you perceive to be the greatest source of help for your typical research students? (Select one)". For the research student question the question was "For each of the following areas, please identify your top three sources of information and guidance...". Again the research student survey data has been weighted to reflect the number of responses received, and then summed across the different elements of information literacy.

Table 3.6: Survey data analysis showing how both research students and supervisors rank sources of information and guidance, for the research student, for information literacy (NB: 'Web' and 'online university resources' are exclusive options; whereas 'training courses' and 'PhD training programme' may well overlap in practice)

Ranking	Research student (self-reported)	Supervisors (perceived for their students)
#1	Supervisor/s	Supervisor
#2	Web	Training courses
#3	PhD training programme	Library staff
#4	Other students	Online university resources
#5	None required	Other members of the research group

The PINOTA study provides some supporting evidence for research students seeing other students (and again supervisors) as important. It found that, for both how to search for information and how to manage information, the “most common source of advice, amongst those who have received advice, were peers (proxy ‘other students’ and ‘colleagues in my group’) or supervisors”.<sup>56</sup>

### Implications

This finding may imply that research students are not picking up on their supervisors’ recommendations – perhaps either because recommendations have not been expressed, or they choose to ignore them. Another possible implication is a likelihood that some supervisors are making recommendations for sources of information and guidance that do not align with students’ preferences. This mismatch may impede the ability of supervisors to be effective in providing advice and/or indicate that some supervisors do not understand or acknowledge student behaviour.

### ***Supervisors are not always aware of departmental, school or institutional training and support available for their students***

Especially where supervisors see themselves as having a signposting role in advising their research students, it is important for them to be aware of where they can signpost to. Although the previous finding suggests that supervisors value institutional support for research students, they are not always aware of what training and support is available for specific elements of information literacy. Only support for information search and reference management is nearly universally known about. Supervisors (and students) sometimes find it difficult to identify what training and support is available. Of course there are often many forms of ‘institutional support’, from many different providers, and these vary across institutions.

56. *Postgraduate information needs and online tools awareness*, Dingley, 2010. <http://arcadiaproject.lib.cam.ac.uk/docs/PINOTA-Report.pdf> (accessed 24 November 2010)

## *Evidence and detailed analysis*

The vast majority of supervisors – 86% or respondents in the survey – are aware of an institutional approach/strategy for training or support for research students in information literacy. However, when it comes to awareness of training and support for particular elements of information literacy, the picture is much more varied. The supervisor survey data on awareness of training and support availability provides a detailed breakdown; and the qualitative data confirms the overall picture of some supervisors not knowing, or struggling to understand, what is available. Of course such training and support may not actually be available, and so the data may reflect actual prevalence of training and support opportunities rather than reflecting on whether supervisors are aware of something that is available.

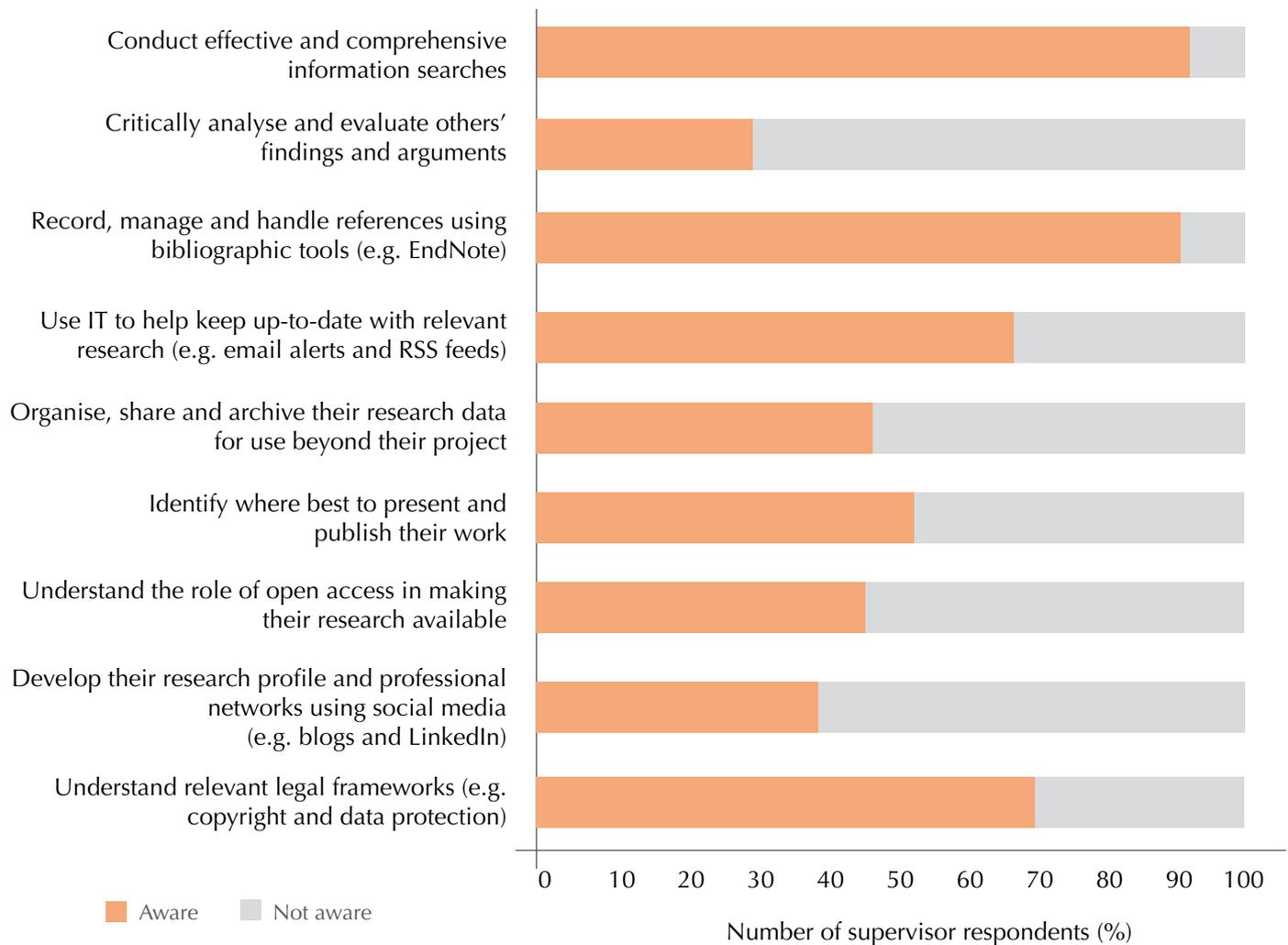
The qualitative data from the case studies indicated that awareness comes from a range of sources including induction activities, colleagues, emails and other circulars, the institutional website(s) and subject librarians.

Clearly those elements which are prominent or mandatory (e.g. certain PhD training programmes) are more likely to be known about. The overall picture presented by the qualitative data suggests that only rarely is a complete and coherent picture presented to supervisors about availability.

The supervisor survey asked “For the following areas [of information literacy], are you aware of whether your institution provides training and support for research students?”. Highest awareness is for training and support for students in information search and reference management – which are very common in institutions – though still 8-10% of respondents aren’t aware. Other areas have much less awareness, for example only 46% of supervisors are aware of training and support for open access publishing. Just 18% of respondents were aware of all nine elements (n=382). Figure 3.4 shows how aware respondents were for each area.



Figure 3.4: Supervisor survey data on awareness of training and support provided by their institution for research students for different elements of information literacy (mean n=380)



Qualitative data to support this finding comes from case study examples where supervisors' answers could be compared with the range of training and support offerings available. Whilst many supervisors did know, there was a tendency for some confusion where there were different offerings from different agencies (e.g. department, faculty, library, graduate school) within the institution – individual supervisors may know about one area but not another. Qualitative data also comes from the supervisor survey with suggestions as to how the institution could improve its support for research students in information literacy. Typical supervisor responses include:

- *“There are so many courses that it is difficult to find out whether the particular subject required is available”*

- *“Provide more information to supervisors about support available”*
- *Support for research students varies greatly between university departments and it is often unclear where to go for support... We need greater information on shared resources and methods of dissemination.*

Finally, research student survey data show research students' views on whether their supervisor is able to identify relevant training courses. Respondents were asked to state to what extent they agree with the statement “My supervisor/s are able to identify relevant training courses”, and 17% stated ‘Strongly agree’, 35% ‘Agree’, 29% ‘Neither agree nor disagree’, 14% ‘Disagree’ and 5% ‘Strongly disagree’ (n=907).

### Implications

This finding highlights the importance of awareness in how well supervisors can perform a signposting role and possibly how well they might try to stay up to date themselves. Where training and support is actually available, offerings need to be clearly visible and defined in simple terms, in order to avoid confusion. Completeness and coherence are important too.

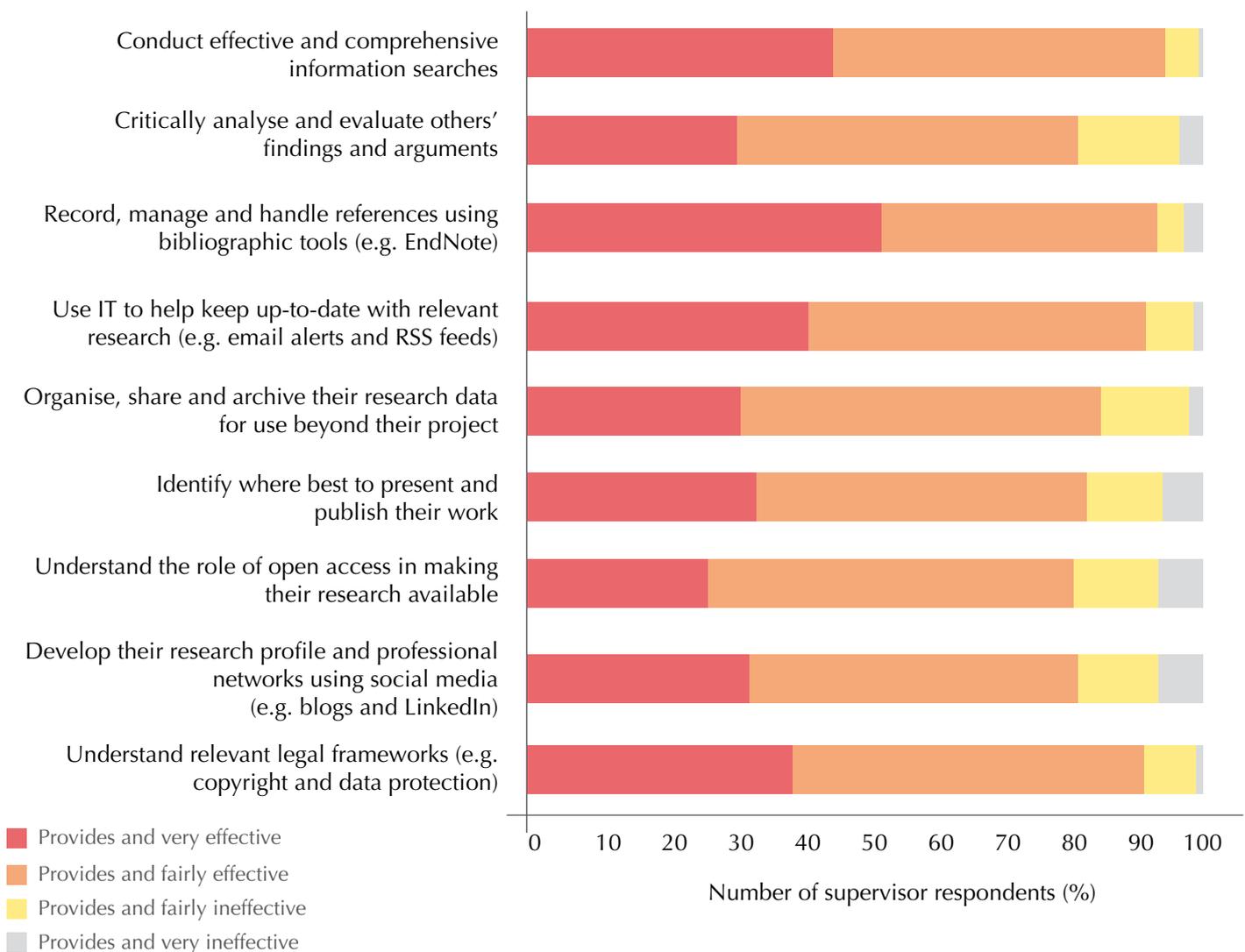
#### **Supervisors generally think that the training and support available for their research students is good**

Where supervisors are aware of the training and support on offer, opinions vary. Whilst most think it is effective, some think it is not. Several criticisms emerge as common themes.

### Evidence and detailed analysis

For each element of information literacy where supervisor respondents were aware of training and support provided for research students, they were asked “how effective do you think it is?” For those that had a view, the data show that some see it as ‘very effective’ and about half as ‘fairly effective’. A minority say ‘fairly ineffective’ or ‘very ineffective’. Figure 3.5 shows these data for each of the elements of information literacy.

Figure 3.5: Supervisor survey data on perceived effectiveness of training and support provided by their institution for research students (mean n=191)



This broadly positive picture is supported by the many comments regarding training and support from supervisors in responses to questions on things that their institution is already doing well.

The qualitative data from the supervisor survey, and the case studies, support the conclusion from an RCUK visit report<sup>57</sup> that “supervisors are increasingly positive about the transferable skills training programmes, having seen the changes in their students and the students’ enthusiasm for the training”.

Whilst on balance what training that is available is seen as good, there is variation. Some of this reflects variation in the local offering (as well as other factors, such as supervisors’ perceived standards); however, the quantitative survey data are not comprehensive enough to probe this further. From the qualitative elements of the supervisor survey data and the supervisor focus groups, several critical themes emerge on information literacy support:

- **Concerns about generic training:** *“The generic university-wide training provided is so general as to be useless to my students. Early exposure to this style of training makes students doubt the effectiveness of all university provided training.”*
- **Ineffectiveness of distant providers:** *“I’m not sure what is meant by ‘the institution’ here. There are individual supervisors, departments and then some of the bigger agencies. I think the further away the support is from the supervisor and the Department, the less effective it is likely to be.”*
- **Lack of coordination between providers:** *“[My institution could provide better support] by making the training provision more coherent. Training is available from several different sources centrally. A more co-ordinated programme bringing these together into a regularly timetabled training course that could run alongside subject-specific training and generic research methods training would be welcome.”*
- **Ineffectiveness of training for certain skills:** *“Some skills, such as evaluating the work of others, cannot be taught en masse”; “You can’t just go on training courses [for critical thinking]. It’s a slow process to build up the skills. You need to let them have a go at it first - for example, get them to write something - and then discuss it. Get them to think first and then give them some help. Otherwise you’re just reinforcing the problem.”*

- **Frontloaded training isn’t effective:** *“I think the real problem is that if you frontload [the training and support], which is obvious, [research students] don’t know that they need to know it and will miss it. And then if you wait until the stage that they need to know it, most of them will have found out most of what they need to know and won’t want to sit through a session. We used to have a nice introductory session in the library and we actually cancelled it this year because it wasn’t working at the time that it was... what you need is almost a responsive question and answer session or something.”*
- **Training and support doesn’t always happen at the right time:** *“What you want are these things embedded in real problems, and you need it at the point when they need it. As [my colleague] said before, if you do it six months before then it’s not going to work. You need to support them through in that very moment when they need it.”*
- **Concerns about the effects on the PhD project from attending training:** *“The introduction of a heavy formal training component in the first year of the PhD has generated a problem, namely that the expectation remains that the PhD will be completed in the same time frame as in the past - without recognition of the time burden of extra training. There is a need to ensure that the training is better linked to outputs directly relevant to the PhD. This is not always the case and as a consequence students sometimes (incorrectly) see the training as ‘irrelevant’ to their PhD.”*

## Implications

Supervisors’ attitudes towards training and support for their research students may well affect the extent to which offerings are recommended, and therefore uptake. Ensuring that training and support do offer value, and then persuading supervisors of this value, are important.

## Supervisors' own abilities and development

**Supervisors are generally confident that they can advise research students on each element of information literacy**

Many supervisors have confidence in their ability to advise their research students on information literacy, though this varies across the different elements of information literacy. They are mostly ‘very confident’ in advising on information search, critical thinking and knowing where

57. RCUK visits to institutions receiving the greatest amounts of Roberts’ funding, RCUK, 2010, [www.rcuk.ac.uk/documents/researchcareers/RCUKvisittostopfive recipients of Roberts.pdf](http://www.rcuk.ac.uk/documents/researchcareers/RCUKvisittostopfive recipients of Roberts.pdf) (accessed 11 May 2011)

58. See the caveat in section 2 (critical review of the methodology and evidence), page 16

to publish, and mostly 'fairly confident' in advising on reference management, using IT to stay up-to-date with relevant research, research data management, open access, social media and legal frameworks.

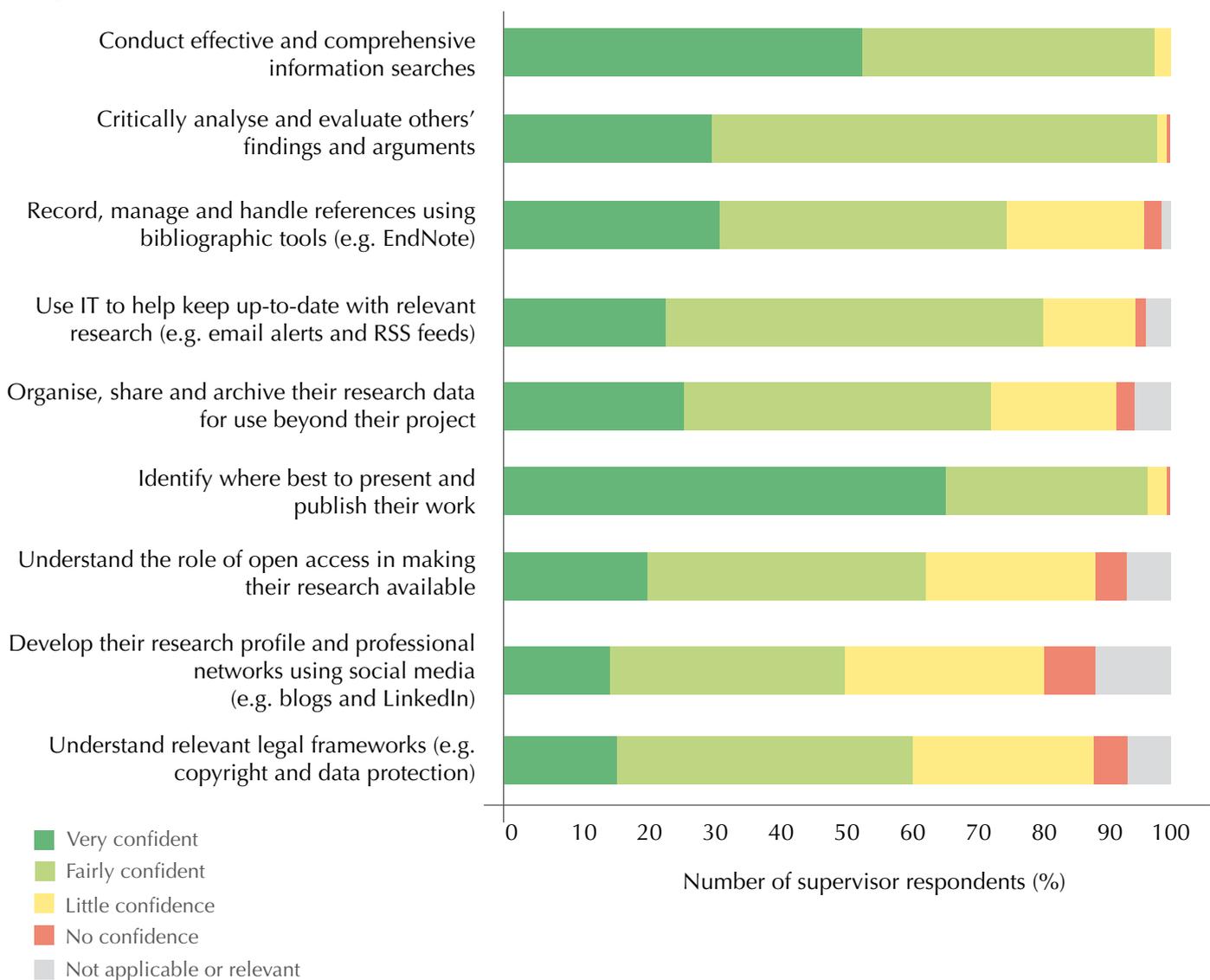
### Evidence and detailed analysis

The supervisor survey data covers supervisor respondents' confidence to advise based on the question "Please rate your confidence in advising your research students on the following areas [of information literacy]...". As we noted earlier,<sup>58</sup> the supervisor survey data are open to self-selection bias so the confidence felt by respondents may not be generalisable to all supervisors. Also the advice may be signposting rather than advising on all matters of content; as one supervisor commented "Whilst I don't

have confidence on advising on certain matters I am completely confident in recommending students to better sources than myself". Page 42, earlier, discussed this in more detail.

Supervisor survey respondents' overall confidence (as measured by 'Very confident' or 'Fairly confident') varies between 50% and 99% across the elements, with 24% of respondents having confidence across all nine elements. Only 3% of respondents considered themselves 'Very confident' in all nine elements. Three elements had less than two-thirds of supervisors expressing confidence; these were for open access, social media and the legal aspects of information literacy. Figure 3.6, below, sets out the supervisor survey data.

Figure 3.6: Supervisor survey data on confidence to advise research students (n=382)



58. See the caveat in section 2 (critical review of the methodology and evidence), page 16

The elements where confidence is highest match well to the two core supervisory roles identified earlier: critically analyse and evaluate others' findings and arguments; and identify where best to present and publish work. That there is high confidence in advising their research students on information searches, suggests an ability to advise even if it not perceived as a core role.

An overall picture of confidence is supported by qualitative data from supervisor interviews and focus groups, with comments like:

- *"I think I'm ok in these areas"*
- *"I don't think I need more training in these specific areas"*
- *"Not looking for more support at present"*
- *"OK at present (perhaps too much training already)"*

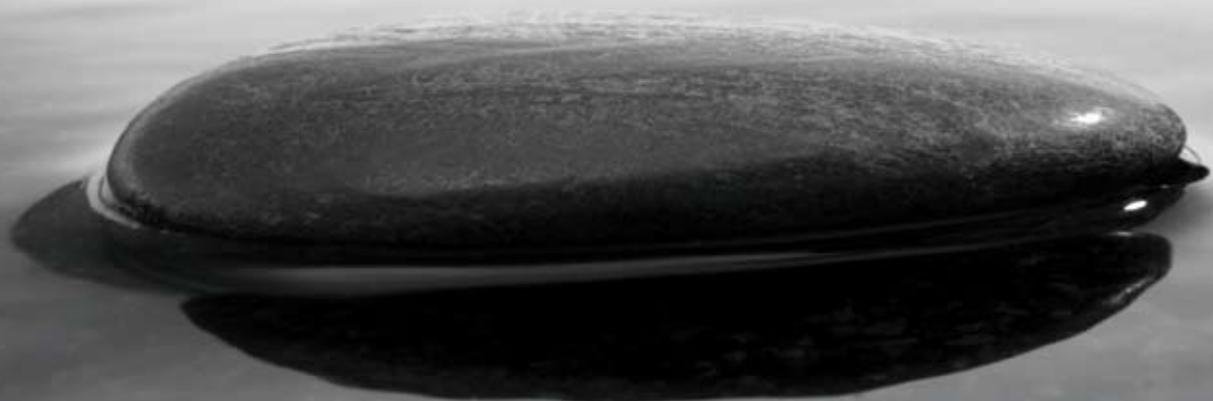
Of course, it may be the case that they are confident in what they know, but do they know what they need to know? Some of the librarians interviewed have suggested supervisors' knowledge is more out of date than they realise. This chimes with the 2008 Mind the Skills Gap report.

### *Implications*

If this confidence is well placed, then this finding implies most supervisors are able to provide appropriate advice – essential for training, coaching and answering questions that arise. Where confidence is low and corresponds to lower ability to advise, this could affect the support that the supervisor offers. Confidence may also affect their propensity to seek training and development opportunities – for instance misplaced confidence will make it less likely that they seek these opportunities though they would benefit more from them.

### ***Supervisors themselves are not necessarily completely up to date***

Whilst supervisors have confidence in their ability, for each element of information literacy, on average only about half of supervisors claim to updated their skills or knowledge, or undertaken training, in the last three years – with very few having done this across all nine elements. There is a keen awareness, and acceptance, of not being fully up to date, especially with the latest digital technologies, and supervisors readily rationalise this position. The earlier discussion of the conflation between information literacy and ICT (page 24) needs to be borne in mind.



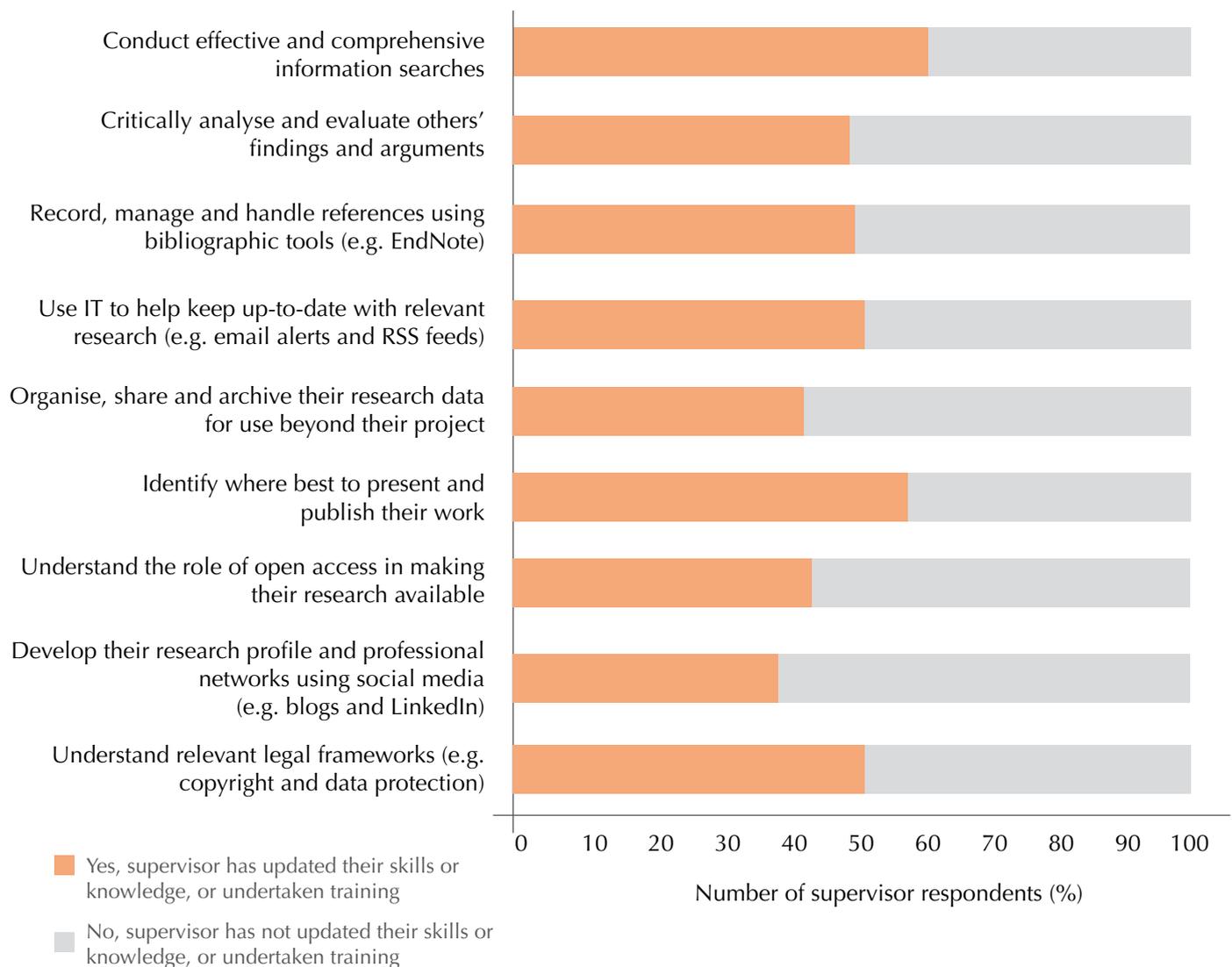
### *Evidence and detailed analysis*

Supervisors were asked “For the following areas [of information literacy], have you updated your skills or knowledge, or undertaken training, in the last three years?” The survey data are fairly consistent across the different elements of information literacy. Figure 3.7 shows that the highest level of updating of skills or undertaking training in the last three years is for information search at 60%, whereas the lowest is for developing their research profile and professional networks using social media at 37%. 6% of respondents stated that they had updated themselves across all nine elements during this timeframe (n=382). Conversely, 12% of respondents stated that they had not updated themselves in any of the elements, implying that 88% of respondents have done so in at least one element (n=382).

Qualitative data from the research student survey confirm the finding that supervisors aren’t always completely up to date. Comments related especially to the greater use of ICT in information search and use, for example “I think there is a generation gap with IT learning and supervision. My supervisor is not good at computing or technology in general.”



Figure 3.7: Supervisor survey respondents' updating or training in the last three years (n=382)



In discussion, supervisors generally accepted that they were not necessarily up to date. As well as discussing the reasons for this (lack of time, lack of suitable opportunities, etc) they often had ways of rationalising their position. The common themes were:

- **No need to know as a signposting role doesn't demand it:** "Supervision used to be all craftsman and apprentice, and still is in an ideal case. However, what we realise now is there are lots of different expertises and I don't need to know about all of them, but where my students do need to know I can point them in the direction of someone who does know."; "I need to give more time to updating my skills (particularly IT) to support students personally, but as I am able to direct them elsewhere instead they don't suffer."

- **A good record implies being good enough:** "There's a difference [between students not being up to date and supervisors not being up to date] say if you're talking about an academic with a large record versus someone who is just beginning. Of course they'll be times where you get it wrong, but if on average you're getting it right and building a large publication record and successful grant process [then you're alright]."
- **Being good enough is adequate given the opportunity cost of the updating:** "The question you've got to ask is, with my limited time available, how am I best to invest my time?"

- **A reliance on the underlying principles:** "It comes down to good science and this won't be affected by information literacy in terms of new media and stuff like that. Critically analysing others' arguments is just part of being a good scientist. The quality of the science doesn't change with the tools."
- **Not seeing the benefit in a new system:** "It's unlikely that you'll want to invest in a new system [now]. At the beginning of your career there's every incentive to build a system. What we do was the state of the art at one time."
- **Reliance on colleagues:** "You need good tools and one of my best tools is a colleague who reads the literature better than I do!"
- **Reliance on their research students:** "I work on the assumption that if I need to know something my students will tell me!"

### Implications

This finding needs to be considered in the light of the earlier recognition that some supervisors' conception of information literacy conflates ICT skills and information literacy skills. ICT may be something of a 'red herring' here.

How up to date supervisors are will likely influence their ability to impart useful skills, provide appropriate advice and understand the implications of new developments for future research behaviour. Making it easy to stay abreast of developments may be key to encouraging supervisors to get, and stay, up to date – and this topic is explored further in the remaining findings.

### **Supervisors themselves report barriers to attending training courses**

Respondents to the supervisor survey were asked "How could you be better supported in these areas [of information literacy]?" This was a polarising issue and a number of common themes emerged about their own development and training, and the training and support offered to them.

These include:

- **Autonomous academics who see themselves as self-supporting and therefore don't see external training and support as required:** "I feel well-supported. I'm capable of identifying my own training needs and acting on these, regardless of the lack of existence of an overall strategy within my department."; "As an academic I feel this is up to me"; "I am not very enthusiastic about training courses. I am best supported if the university leaves some space in my diary so I can think and support myself. From this point of view, organised university support is counterproductive."
- **Inappropriateness of training:** "No training in most of these areas will help and usually adds an unnecessary layer of irritation and bureaucracy. If you don't know these things well, you shouldn't be supervising."
- **Lack of time:** "I would need more time if I was going to go on these courses. I do my writing in bed at night. I'm doing practical activities throughout the day, mixing in administration and research"; "I feel my learning is secondary [to that of the PhD student]. I only do it when I've got time. I'm not sure it should be like that"; "Largely the training available for myself and students requires attending a one-day course. We cannot afford to take this much time out to learn something which could easily be communicated via an informational web page."<sup>59</sup>
- **Lack of availability:** "Better availability of training courses would encourage me to stay abreast; specifically, times that I can go on them!"; "My University is really bad at giving enough notice... There's an assumption that the academic's diary is empty... that we just sit there doing our research - totally flexible. This is not the case! My diary is filled for the next three or four weeks."
- **Unfocused training:** "Attending waffly training is, for supervisors, like everyone else, unappealing and deters us from going to any more."
- **Most training is aimed at new supervisors:** "There is a culture of training and development being aimed at relatively inexperienced staff, whereas in a fast moving world it is really needed for more experienced staff too. But there is an implicit stigma attached to experienced staff undertaking training."

59. Interestingly, research students realise this, for example one commented "there are lots of areas where more help would be appreciated but a) it seems to smack of hand-holding and b) they just don't have time". Many respond by managing their time with their supervisor by choosing what to prioritise.

- **Ineffective early stage training:** “Academics can be dragged along to courses, but they are reluctant participants. Our compulsory course for new supervisors didn't cover 'training needs analysis'. Some of it was very basic, for example, how to fill in a form for an annual review. You can go along and tick the box, and not change the way you were doing things at all.”

Concerns about the generic nature of training aimed at academics did not feature as prominently as for training for research students. Indeed, some supervisors actually like the idea of attending training sessions with academics from outside their field – they appreciate the networking opportunity. For instance one supervisor commented “it’s really useful to do university [training sessions]... you get to speak to other people and it’s really valuable. For example I got some great ideas from our media school people”.

About half of supervisors are aware of a departmental or institutional approach/strategy for enhancing academic staff knowledge and skills that covers information literacy: 53% of respondents in the supervisor survey stated that they are aware (n=382). For comparison, 86% of respondents were aware of an institutional approach / strategy for research students (see paragraph 3.5.6, n=382). This may reflect the actual prevalence of such approaches and strategies.

### Implications

This finding implies an approach to improving the development opportunities for supervisors. Offering short, focused and accessible development opportunities would meet many supervisors’ requirements. Once a valuable offering is in place, a shift in culture towards taking advantage of such opportunities as a matter of course may be effective in helping supervisors stay abreast of information literacy developments. These are large and long-term challenges for institutions, but this finding, and earlier findings around the supervisors’ role and influence, imply it is necessary.

Table 3.7: Survey data analysis showing supervisors’ sources of information and guidance for information literacy ranked by the percentage of respondents who expressed it as one of their top three

Ranking	Supervisor’s self-reported source of information/guidance	% reporting one of their top three
#1	Academic peers (including research fellows and associates)	91%
#2	Web	57%
#3	Online university resources	40%
#4	Library staff	36%
#5	Your School/Department	31%
#6	Research students	20%

### ***Supervisors look to their peers for information and direction on information literacy***

Nearly all supervisors see their peers as a source of information and guidance on information literacy. Whilst their peers are the number one source of guidance, other sources – particularly online sources – are also important. Evidence and detailed analysis

The source of evidence for this is the response to the supervisor survey question “Taking the areas [of information literacy] in previous questions as a whole, what are your top three sources of information and guidance for you as an academic?”. Table 3.7 shows respondents’ top six sources.

Supervisors were very keen and able to offer advice to each other on the role of supervisors in information literacy – both in the supervisor survey and in interviews and focus groups. A selection of their top pieces of advice has been set out in Annex A to provide a sense of what they advise and share practice on. The importance of their peers was highlighted many times, for example one supervisor commenting “Building professional networks is absolutely key, and that is one of the ways that we stay on top of the field. We rely on our social network. But [...] it doesn’t need to use new media... use any media you can think of, but network as much as you can.”

The prominence of online sources of information guidance may well be a response to the earlier findings about concerns with training and support. The general requirement for short, available and specific guidance may be well met by web and online institutional resources. For instance, one supervisor described their recent use of online courses: “In the last few months I’ve taken a few e-learning courses. It works well because I can fit it into my day. It was an hour a day for a week, but [the course] wasn’t run again that year... That commitment meant I did it... I put it in my diary for 4pm everyday. Other colleagues did it too and felt the same.”

Library staff featured as a source for around a third of academics. Qualitative evidence indicated that subject librarians are often very highly regarded. For example one supervisor commented:

*“...the other thing I think we should mention as good practice is how the library has departmental representatives and my experiences with the library member of staff who is assigned to our department is absolutely amazing and the case is that any member of the department, staff or students, can go back to the library representative with any kind of specific question and usually they respond very quickly”.*

The data show a fifth of supervisor respondents considering research students to be one of their top three sources. Qualitative evidence indicated that this information frequently covers newer digital technologies, for instance one supervisor commented:

*“I am learning more and more from my students (rather than the reverse) than ever before, as I age and the technology advances faster than I can keep up with it.”*

### ***Implications***

This finding implies that peer learning with colleagues is already the default position for academics. The challenge is therefore to ensure the learning is effective: specifically that good practice and up to date information is shared, rather than risk a vicious circle of promulgation of poor practice and out-of-date information.



4

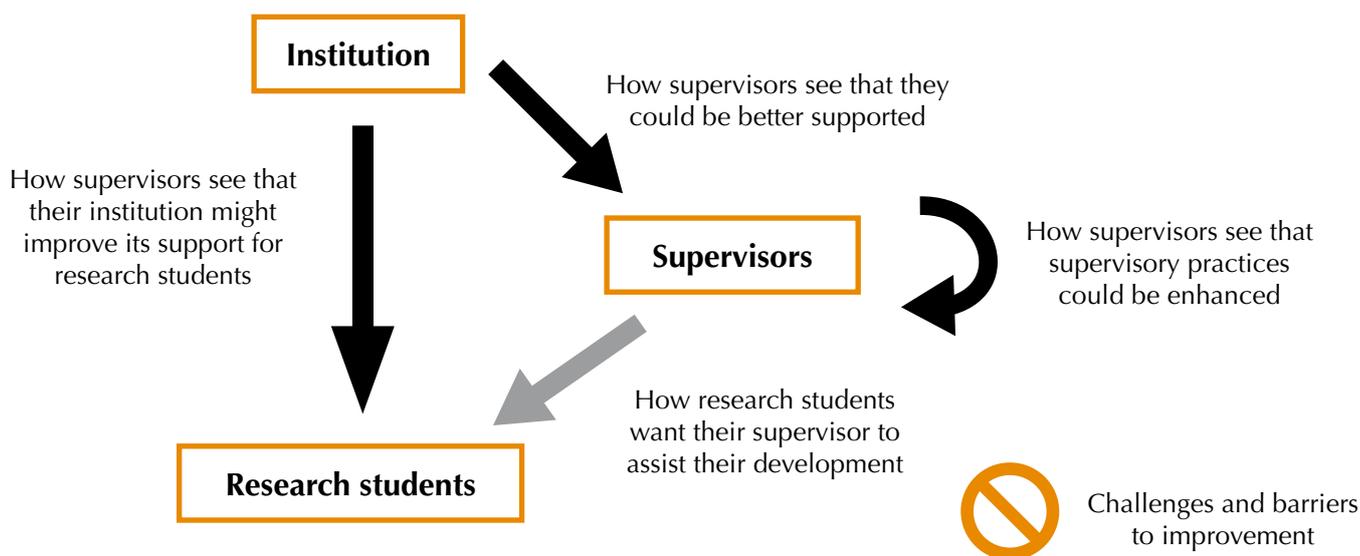
# Supervisors' and research students' views on developing good practice

Given that practices and research student experiences vary enormously with respect to information literacy (see, for instance, pages 20 and 29), it is clear that enhancements and improvements are necessary in some areas. Supervisors and research students have already identified support requirements and given feedback on current practices (for example supervisors' criticism of training for research students, page 46, and barriers to supervisors attending training courses themselves, page 46). In this section they identify improvements that would directly enhance good practice with information literacy, or, more commonly, enable such change to happen. This is important because whilst changes in supervisory practices for some supervisors are important, so is addressing what support mechanisms are in place in research groups, departments and institutions to enable supervisors to undertake their role effectively.

The improvements set out in this section reinforce earlier findings on how change won't just need to happen at one level and also that 'one size fits all' approaches will not work – "specific support" is a very common requirement, and this is usually synonymous with provision at a departmental-level or research group-level.

This section presents four groups of suggested improvement. Each group corresponds to part of the institutional system where improvements have been identified. The figure below shows these groups and references the relevant sub-sections, as well as the challenges that must be overcome in developing good practice. Section 5 presents a prioritised set of improvements.

Figure 4.1: Different views on developing good practice contained within this section (arrows indicate provider and recipient of support, with blue arrows show supervisor views, and the orange arrow showing research student views)



## How supervisors see that their institution might improve its support for research students

Respondents in the supervisor survey were asked “How might your institution improve its support for your research students in these areas [of information literacy]?” and 267 answers were received from the 382 respondents. With so many detailed suggestions it is impossible to cover these in-depth here, though there are a number of emerging themes:

**Scaling up support and increasing uptake**, including:

- providing more training opportunities;
- creating and distributing a comprehensive listing of resources, training and other support;
- promoting support;
- ensuring sustainability of funding and resources for these activities;
- providing greater availability of resources by putting them online;

**Using a graduate school**, including:

- providing a graduate school and an identity for graduate students;
- improving the relationship between graduate school and academics;

**Improving the nature of support**, including:

- targeting and personalising support;
- focusing support, especially in a discipline or subject-focused way;
- improving support for research students at the start;
- encouraging more peer support between research students.

These themes match well with earlier findings. For instance, scaling-up support and increasing uptake may be a reflection of the general approval of training and support which is known about (page 45), whilst improving the nature of support correspond to supervisors’ earlier criticism of training for research students (page 46).

## How supervisors see that they could be better supported

Respondents in the supervisor survey were asked “How could you be better supported in these areas [of information literacy]?” and all 382 respondents answered

as the question was mandatory.

Two types of response are common:

- that the support is already good and no further support is necessary (10% of responses); or,
- that workload demands are high and more time would be required to develop themselves (17% of responses).

In terms of specific suggestions for improvements, the themes arising match well with the general requirements expressed in the findings for short, available and specific guidance (page 52). Themes emerge around wanting:

**Information about support**, including:

- a comprehensive listing of resources, training and other support;
- specific publicity about support;

**Improved delivery of support**, including:

- more frequent, accessible shorter, training;
- more specific training for information literacy;
- more specific training for particular subjects;
- training delivered in one-to-one sessions;
- mentoring and peer support;

**A supporting strategy and culture**, including:

- a more cohesive approach or strategy across the department or institution;
- proactive staff appraisal systems;
- a culture that values research more highly (emphasised especially by supervisors from less research intensive institutions).

## How supervisors see that supervisory practices could be enhanced

Respondents in the supervisor survey were asked “What one key piece of advice would you pass on to other supervisors for enhancing research students’ knowledge and skills in these areas [of information literacy]?” and 262 answers were received.

Annex A sets out a selection of the answers, categorised by the major themes. Such themes include:

- **Before starting:** have the right attitude and assure yourself of your own suitability;
- **Starting in the best way possible:** check instead of making incorrect assumptions; have a plan; make sure you’re ready, prepared and up to date; and give the student the right start;

- **Approaching supervision:** work as a team and encourage appropriate use of training opportunities;
- **Effective supervision:** communicate; ensure supervisory meetings are effective; guide effectively by personalising, demonstrating and mentoring; and avoid distractions;
- **Support yourself:** sustain your own development as a supervisor and researcher, and find your own sources of support, including peer support.

## How research students want their supervisor to assist their development

Respondents in the research student survey were asked "How could your supervisor help you better develop in these areas [of information literacy]?" and 417 answers were received from the 907 respondents. Annex B sets out a selection of the answers, categorised by the major themes. These themes cover the fundamentals (e.g. basic supervisor capabilities; and proactivity and time) and specific areas (e.g. guidance on particular topics). Part of it is wholly about the supervisor (e.g. more effective guidance from the supervisor) and part about how the supervisor fits with the institution (e.g. formalising the role of the supervisor, and integration with other areas of the university).

## Challenges and barriers to improvement

### *Resources and funding are tight*

The end of 'Roberts funding'<sup>60</sup> and Research Council funding cuts mean there is likely to be a general tightening of budgets. The implication is that big new investments are less likely and the assumption is to 'do more with less'.

### *Supervisors' time is precious*

A recurring comment from both supervisors and research students is the high workload of the academic/supervisor. Improvements that demand more time from supervisors are likely to be difficult to implement or not well received.

### *Supervisors aren't a homogenous, self-identifying group*

Supervisors are drawn from across the academic spectrum; their supervisory role is only part of what they do as research professionals, and isn't the defining aspect.

This means that in practice supervisors are a difficult audience to 'target' and have very different preferences. Some examples of 'polar opposites' include:

- those supervisors who would like more of a prescribed approach for research students, and those that wouldn't;
- those supervisors who like email alerts and those who don't;
- those supervisors who perceive that generic training is useful and those that don't;
- supervisors who value knowledge and skills very differently, for example:
- "Many supervisors think in terms of 'knowledge' when in most research projects it is skills that are crucial to success."
- "My private view is that 'skills' is a passing ideological fad which serves various agendas which I do not fully understand."

What works well for supporting one supervisor may well not work for another. A possible implication is that, to maximise engagement, many different approaches need to be taken without being too onerous.

### *Changing culture and dynamics would enable the change of practices but may be hard*

Some cultural characteristics of supervisors and research students were highlighted by participants:

- Strong social effects showing that supervisors value academic peers, and students value other students.
- There is little tendency for students to give critical feedback on their supervisors; there probably is not an incentive to do so, as students are normally reliant on their supervisor to provide support for the thesis and viva, and then for future references.
- Some supervisors may not want to admit to not knowing something, so won't seek support.
- Students may deliberately refrain from asking their supervisor about something they don't know about, or from going on a training course, because they feel they already ought to know about this. Out of embarrassment for instance, they may not want to dispel the supervisor's mistaken assumption about their knowledge.

60. [www.rcuk.ac.uk/ResearchCareers/Pages/CareerDevelopment.aspx](http://www.rcuk.ac.uk/ResearchCareers/Pages/CareerDevelopment.aspx) (accessed 28 May 2011)



# Recommendations

## Introduction

The previous section identified possible enhancements and improvements based on suggestions from supervisors and research students, and investigated the challenges in implementation. From the evidence presented, the following four recommendations are put forward as particular priorities. These recommendations are aimed at decision-makers in institutions and departments, including those concerned with researcher development, postgraduate studies, information literacy, and library services. Again, 'one size fits all' approaches will not be appropriate and so the implementation of each recommendation should be tailored to the local context.

The priorities are derived from the analysis earlier in the report, and cover both:

- the development and promotion of good supervisory practice with respect to information literacy, and;
- the provision of support mechanisms, training and, if appropriate, incentives for supervisors to enable them to play their role in developing the information literacy of their students.

The emphasis in each is to ensure that supervisors are effective in their role in the drive to ensure that research students possess the necessary level of information literacy – though clearly the recommendations do have wider relevance to researcher development. A notable area of possible improvement – how to connect with those supervisors who aren't currently engaged with information literacy – is excluded. The study found that this is associated with general a lack of engagement with their students and with researcher development. Addressing this broader problem therefore lies beyond the scope of this report.

The four recommendations are completed by explanations of why each of them is a priority, what should be done and how it could be achieved. Whilst the priorities are intended to be widely applicable, in reality they may well differ for different departments and institutions,

and depend on context, strategy, resource, etc. To effect these changes, it is vital to identify, test and promote the benefits; enlist senior support; consult and communicate effectively; consider how existing roles and responsibilities and associated behaviours and culture might need to change; adapt to context; and identify and use a few key indicators of change.<sup>60</sup>

## **Make it easy for supervisors to keep up to date on what training, support and resources are available for both themselves and research students**

It is crucial for supervisors to be aware of what training, support and resources are available for research students, in order to be able to direct them there, and to make judgements about the effectiveness of these interventions. This awareness may also support supervisors' understanding of what possible needs there might be. Both the supervisor survey data and the case studies show that not all supervisors know what training and support is available. In addition, supervisors themselves need to be aware of what support and resources are available to meet their own training needs; this, along with accessibility of such support and resources, increases the likelihood of them taking advantage of training opportunities.

So for this recommendation to be met, all supervisors should be at least aware of what training, support and resources are available for information literacy, and be aware of where both they, and research students, could/should go for advice and guidance. Supervisors should be provided with a clear and integrated listing of relevant training and support available to students. This should be marketed along with evidence of effectiveness from evaluation of previous courses. The breadth of recommended support could be described and communicated through the medium of a nationally-recognised framework such as the RDF.

61. A useful guide to change management, detailing the key principles, is *Managing Successful Programmes*, TSO, Fourth edition, 30 August 2011. A wealth of academic literature is also available on the topic.

Since supervisors' preferences are so diverse, it is appropriate to adopt as many ways as possible to keep them abreast of offerings and developments. Subject librarians, email updates, online information and resources, seminars and workshops, one-to-one sessions at the desktop, annual updates, etc are all important. Supervisors report that this information should be short, simple and specific to their needs.

One approach is to centre provision of training and support around the user. Offering one catalogue of courses and support encourages coherence in provision and makes it easy for both supervisors and students to know what is available. This does not imply that a centralised approach to provision is best – the arguments and tensions between centralised and devolved approaches go well beyond the scope of this report. However, clear evidence<sup>62</sup> exists that confused or partial understanding of offerings is an important barrier to awareness.

### **Clearly identifiable support benefits supervisors and students**

One case study institution took a strategic decision seven years ago to centralise the promotion of its postgraduate support. Whilst a few highly specific courses are still run by departments the vast majority are now packaged within a central programme co-ordinated by the graduate school – including the information literacy ones. The graduate school promotes the courses via a single listing which is distributed to all research students and all academics. This approach receives very positive feedback from both supervisors and research students.

### **Improve development opportunities for supervisors**

It is recommended that, wherever possible, academic development offerings should be kept short and specific to subjects and areas of research, and delivered locally at the departmental or group level. There are likely to be

opportunities to review existing provision. Reviewing this, including eliciting detailed feedback from supervisors, and assessing how well information literacy is addressed, will highlight areas of improvement for a particular institution.

Collaboration amongst providers of training will be beneficial in achieving improved development opportunities. Such collaboration is aligned with the trend, encouraged by some funders such as BBSRC, EPSRC and ESRC, towards consortial, multi-institution arrangements for Doctoral Training Centres. It is clearly sensible for information literacy support and training to be, at the very least, coordinated between institutions.

### **Academic staff development: revamps at two institutions**

One case study institution is moving to an approach of short, focused sessions with an emphasis on quality. Whilst information literacy is not explicit in the course titles, it is often directly addressed: so, for instance, social media would be included in the Networking course. Focus groups of research staff had identified several improvements and now traditional half-day and full-day sessions are being replaced by breakfast, lunchtime and evening sessions to encourage attendance. Each course is evaluated and if the instructor scores less than 'Excellent' or 'Very good' he/she is replaced – this policy applies to the programme director too for the courses that they run. The evaluation asks the participants what they think of the new sessions and so far people are very happy with the courses.

Another case study institution is also in the midst of making changes in academic staff development. They recognise that staff development, when done in an "officious and overly formal" way, is a turn-off for academics, but that academics do have a strong desire for development. One strand of the new approach is to recognise the development that is already going on. Another focuses on community building so that academics have better support networks. This includes their explicit courses on information and digital literacy.

62. A recent RCUK visit report stated "There were some problems related to the size of the institutions: some students and researchers reported problems in accessing training when it was provided by a different part of their institution, and there were differences across parts of institutions in how well the courses are marketed and encouraged." This issue was recognised in three of the five case studies, and was seen as an issue of organisational complexity as scale. *RCUK visits to institutions receiving the greatest amounts of Roberts' funding*, RCUK, 2010, [www.rcuk.ac.uk/documents/researchcareers/RCUKvisitsstopfiverecipientsofRoberts.pdf](http://www.rcuk.ac.uk/documents/researchcareers/RCUKvisitsstopfiverecipientsofRoberts.pdf) (accessed 11 May 2011)

### ***Encourage peer support between supervisors***

As a specific development mechanism, peer support is likely to be effective because it avoids being overly prescriptive, which is a real turn-off for many supervisors. These already have much experience and advice to offer each other (for example see Annex A). They already look to their peers, and encouraging peer support builds on this, ensuring that structured development occurs.

There is a need to encourage more peer support, which benefits from the inclusion of as many supervisors as possible; and to ensure that peer support covers information literacy. Such support should relate both to supervisory practice embracing information literacy; and to the development of the information literacy of supervisors themselves. The 'top tips' from supervisors and research students, set out in Annexes A and B respectively, could form the basis for initial discussion.

Two key ways of providing peer support are through seminars (not necessarily formalised) and mentoring. Within peer support systems it ought to be possible to introduce information specialists, trainers, etc not as authority figures, but as a source of ideas and news about information literacy. Heads of department, and directors of graduate studies, may need to take leading roles in setting up peer support systems. Having a senior academic as a champion for organising and initiating discussion is also likely to be effective. Senior academics can also be involved in mentoring, especially with new supervisors and those in probation periods.

#### **An example of peer support**

One department from a case study institution has recently deployed Endnote to its researchers. No formal training was provided but the academics were keen to learn how to use it to best effect. During the focus group for the case study, they identified the need for sharing practices and identified their regular departmental seminar series as the mechanism for doing so. One of the supervisors, who was seen as "the expert" within the research group was assigned the task to deliver a workshop session on Endnote in a forthcoming seminar to the other supervisors/academics and research students.

### **Encourage supervisors to support and discuss their research students' skills assessments**

None of the evidence collected indicated that all supervisors formally support and discuss their students' skills assessment. The need for supervisors to participate is also highlighted by the case study evidence showing that some students' self-assessments in information literacy can be unreliable (footnote 46, p28). Enhanced practice in this area is important as it will ensure that supervisors engage with researcher development early and explicitly, and encourage planning for development where required. For research students who come straight from undergraduate or masters, it is a good time to challenge any presumption that they know everything and to set the standard for PhD-level work; mature students may also benefit from early support covering the changing information landscape in the research environment. The importance of early skills assessment is set out in the QAA Code of Practice for personal development planning.<sup>63</sup>

In undertaking this practice, supervisors and research students could jointly consider mechanisms for assessing skills (whether first undertaken by research students or done together), and use this as the basis for planning development opportunities. The different elements of information literacy would be a part of the assessment, though a wider assessment based on the information competencies contained in the RDF<sup>64</sup> is also possible.

This recommendation could be effected by encouraging the use of self-assessment tools or frameworks where available, and ideally objective tests, to prompt discussion between research students and supervisors. Alternatively a more informal approach would be to get students to write something (e.g. a review or even the start of their thesis) to get their academic writing going. Either start can then lead into a discussion on knowledge/skills gaps and how anything 'missing' might be developed at an appropriate point in the PhD. Another way is to use students' research plans to identify what skills and capabilities are required for the key stages and then to plan suitable development opportunities.

63. QAA Code of Practice, Section 1, Postgraduate Research Degree Programmes, Precepts 19 and 20. [www.qaa.ac.uk/academicinfrastructure/codeOfPractice/section1/default.asp#development](http://www.qaa.ac.uk/academicinfrastructure/codeOfPractice/section1/default.asp#development) (accessed 29 May 2011)

64. Whilst most respondents in the supervisor survey were not aware of the RDF (73%), at all the case studies there was senior level discussion on how to best introduce/implement it.

This acknowledges that whilst at the beginning of their research, students read papers, consider research questions, etc (thus involving certain elements of information literacy such as information search, managing references, critical thinking, etc) not everything is applicable at the beginning; for example students are unlikely to have any research data to curate (unless inherited) or results to publish.

An argument to encourage supervisors is that by engaging with these issues upfront much time is saved later on. As one head of faculty put it “[whilst] there are no obvious incentives for supervisors to [engage with information literacy, an] indirect benefit for supervisors is that it saves them time”.

### **Consider how to position information literacy within the institution**

Qualitative evidence has highlighted that information literacy, as an overall concept and as a term, is not generally recognised by supervisors, though there also is anecdotal evidence that some institutions use the term with success.

The findings have identified that many supervisors see information literacy skills, aptitudes and behaviours as an integral element of the developing researcher. For them, the skills are naturally developed through the research process, and in particular, through supervisors’ focus on academic writing skills. Given that developing research students’ academic writing ability is a major role for supervisors, information specialists should consider highlighting the links between this and information literacy to engage supervisors.

It is recommended that there should be a dialogue within institutions as to how widely to adopt the concept and terminology of information literacy within researcher development activity. Using the term ‘information literacy’ expressly with all stakeholders gives it an explicit and visible focus. But such flagging of information literacy need not be the only approach. The concept could be more implicitly integrated into wider research skills, so that it is considered as a fundamental enabler to many research activities. This approach would not preclude an internal strategy for improving information literacy, nor using the term/concept of information literacy amongst information specialists and research skills programme developers.



# A

## Supervisors' top advice to other supervisors

Supervisor survey respondents were asked "What one key piece of advice would you pass onto other supervisors for enhancing research students' knowledge and skills in these areas [of information literacy]?" and 262 wide ranging answers were received. A selection, categorised by the major themes arising, and chosen to illustrate the range of perspectives, is listed below:

### Have the right attitude:

- *"Don't see PhD students as resources to be exploited for your own research ends and career - put yourself in their shoes and think about where they have the potential to go as academics themselves. Seeing them empathically as collaborative, albeit independent, colleagues to be mentored makes it easy then to give them what they most need."*

### Assure yourself of your own suitability:

- *"Never supervise a project if you are not an absolute expert in the respective field of research. One cannot help if one does not know the corresponding research community in full detail, since the above aspects differ a lot across the communities."*

### Check instead of making incorrect assumptions:

- *"Don't assume incoming students will be aware of best practices in organising and managing data. A research group policy is best established early."*
- *"Importance of checking rather than assuming that within your group, that more experienced staff will provide detailed help to new students"*
- *"Don't assume youth = digital native"*
- *"Important to analyse the student's needs at the start - don't assume they have any particular skills already!"*
- *"Request a piece of written work in the early stages, this will give you a chance to assess the student's current level in some of these areas. The biggest amount of time devoted to researchers, including UK residents, involves English writing, grammar and spelling."*

### Have a plan:

- *"Check thoroughly at the outset of supervising a new student what they can do/need to learn and work out an adequate and timely programme for them to acquire what's missing from their skill-set."*
- *"Ensure that there is a structured learning process for the PhD programme as a whole, that research students are directed to relevant training courses and that supervisors reinforce the learning points from those training courses"*
- *"Allow time for dissemination (eg archiving requirements) beyond the thesis"*

### Make sure you're ready, prepared and up to date:

- *"Develop your own skills, so you can effectively identify gaps in students' skills"*
- *"Attend appropriate training sessions yourself to keep up to date (or to reassure yourself that you are already acceptably informed)."*
- *"It pays to familiarise oneself with ethical/legal implications of research that have been documented outside the supervisor's immediate field or discipline. Other academic/professional frameworks have more comprehensive tools in dealing with ethical and legal concerns of advanced research projects."*
- *"Prepare well so that you know what the alternative resources are if you are not personally equipped to handle specific training and don't be afraid to delegate in those circumstances."*
- *"Go on available training courses themselves, to be fully up to date with what the possibilities are."*

### Give the student the right start:

- *"Get them to write a proposal laying out what they aim to achieve before they are allowed to start. Then use that, amended as necessary, as a focus for regular progress reviews."*

- *"Start with the basics in the first 6 months and do not over-estimate prior knowledge. Make sure students practice critically analysing papers and writing critiques from day 1 - offer frameworks and comment on their work honestly. (Sometimes you need to be cruel to be kind)."*
- *"Professional skills should be developed at the start of the PhD, rather than serving as an 'add-on' once the thesis is close to completion."*
- *"Emphasise structured and disciplined approach to information management right from the outset"*

#### **Work as a team:**

- *"Develop humility - you can't know everything but you should know where to find out, and how to respect and use other people's skills"*
- *"Know your limits - don't try and advise on things you don't know about when your institution has many experts/support networks in place who can help far more effectively! ... I understand that I can't be an expert in everything!"*
- *"Use the wider support team across the Grad school, Faculty and University to ensure the best support for your students - don't be afraid to say 'I don't know' as long as you then help them find someone who does."*
- *"Don't be afraid to call on the skills of others (eg Library staff or IT staff) or to advise students to ask their colleagues, where your own skills don't cover it."*
- *"The librarians tend to be an under-utilised resource who are always willing to help students with literature searches and are more knowledgeable in general than supervisors"*
- *"Working with a team of supervisors is very helpful because there is usually someone on the team with relevant expertise"*

#### **Encourage appropriate use of training opportunities:**

- *"Make sure their students take the initial research training courses which are run for all postgrads by your institution. They will really help students to get the requisite IT skills they need, and put them in touch with the Library staff, who are also excellent at providing IT training."*
- *"If courses are available at their institution enrol students to participate. They are empowered with new skills and instigates a level of independence early in their training relieving demands on supervisor dramatically."*
- *"Ensure that research students appreciate the need for, and attend, a range of training courses"*
- *"Find out about training, but cherry-pick and don't go over the top because a lot of the courses offered aren't very specific to subject area and students lose interest."*

#### **Communicate:**

- *"Communicate with your students formally, informally, and as often as possible. Passing on these skills should be embedded as normal research practice."*
- *"Be accessible/available to answer students questions and encourage them to ask !"*

#### **Ensure supervisory meetings are effective:**

- *"Meeting regularly (once a month is not enough) and setting aside in these meetings time for discussion of career development, in addition to substantive discussion, identifying the needs of the student and responding to them either by directly intervening or indicating relevant sources IS the best way to deal with the development of these skills."*
- *"I believe it is very important to give research students a structure for their work, eg agree on clearly specified tasks to accomplish between the meetings. While of course research students should learn to work independently, this would still provide the students with guidance I feel they need."*

### **Guide effectively by personalising, demonstrating and mentoring:**

- *"Listen to the student first, to understand where they are at already and what their needs are."*
- *"Use what the students already know - ensure they have the confidence to make the necessary steps in research themselves."*
- *"Try to see the project from the student's perspective and do not read competencies, problems, issues, skills... into what you hear."*
- *"Use own work to demonstrate these skills then work together with student on increasingly complex activities to develop their skills"*
- *"Direct students by example - whatever you tell them to do, you should do yourself. Students inherit and learn behaviour from their supervisors so you should set a good and professional example. Unfortunately, many supervisors are not good at setting a good example."*
- *"As much as possible, let them work it out for themselves. In so doing, they learn how to solve problems for themselves, which is the single key skill for research."*
- *"Try to make them realise that everything they do/write must be put into the context of existing published work using citations and related discussion/argument."*

### **Avoid distractions:**

- *"Make sure that the vast increase in available information does not distract you from applying traditional academic standards of rigorous scholarship."*
- *"Your research students already know how to use Facebook. Do something else to help."*

### **Sustain your own development as a supervisor and researcher:**

- *"They should recognise that there is NO "one key piece of advice"! Supervision is a learnt skill and learning from good experienced co-supervisors and from student feedback suggests a broad front approach."*
- *"The boundaries are always changing so don't assume your experiences are still relevant and there is a need to keep up to date"*
- *"Remain flexible yourself in your own research: it is easy to let your research skills stagnate but if you keep learning yourself you are in the best position to advise your students."*

### **Find your own sources of support, including peer support:**

- *"Find a peer group and meet/communicate regularly and often. Note that I am a lone social scientist in a large engineering and management-focused university. Little or no relevant knowledge is available through daily contact with staff or students."*
- *"Hard work, persistence and high standards are important in developing knowledge and skills, combined with motivation to improve your own skills and use a range of self-help and peer support strategies. There are excellent resources available to help supervisors if they know where to look, and if they don't know, senior supervisors can help."*

# B

## Research students' top needs from their supervisor

Research student survey respondents were asked "How could your supervisor/s help you better develop in these areas [of information literacy]?" and 417 answers were received. A selection, categorised by the major themes arising, and chosen to illustrate the range of perspectives, is listed below:

### Basic supervisor capabilities:

- "Supervisor needs more experience on my research area"
- "Pay more attention, be more available, schedule more frequent supervisions!"
- "By providing more comprehensive feedback on written work & progress and by sharing their experiences and how they keep up-to-date with literature, use blogs etc."
- "More structured contact time. And a driver for my supervisors to actually acknowledge these areas are important and may need time spent on them"
- "By challenging me with stretch assignments"

### Formalising the role of the supervisor:

- "By making more explicit what their role actually is. Every supervisor behaves differently here and this makes for confusion."
- "Making some of these issues an explicit agenda for discussion"
- "Have a three monthly review of progress in developing skills for publishing/access/social media/practical skills"
- "Following the completion of the skills audit every six months, supervisors could identify sources of advice and guidance and training for some of the skills listed above"
- "They should be included as part of any formal supervisory role. Compulsory regular training on these - and the role in general - would help."

### More effective guidance from the supervisor:

- "They could provide me with more examples of previous work in my area of research"
- "Provide more guidance on how best to go about things, rather than just setting me tasks"

- "Supplying a written 'guide' to resources for postgraduate resources may be of use"
- "More signposting to sources of help. Being more active themselves in the use of IT and online media"
- "Able to identify courses"

### Guidance on particular topics:

- "Give more advice on sharing and disseminating my research and what IT resources I could use in particular to help me. I am only aware of open access repositories in other universities which I found out via other academics in those universities."
- "Perhaps provide more guidance on areas (such as legal or copyright issues) which I am not aware of or should consider when compiling/ publishing work."
- "Introduce me to other academics within the wider research network"
- "More input/advice on post-PhD matters & publishing thesis"
- "As I am in the later stages of my PhD I would like more guidance on what to expect in my Viva and what I can do with my research post-PhD."
- "Advice on how to manage references and archive pdfs of papers on my computer for quick access"

### Proactiveness and time:

- "They could be more proactive in talking about publishing work and offering advice on other no-thesis topics."
- "Be proactive in directing me to sources of information"
- "Enforce a meeting/goals schedule, meet more often, check my progress, teach and train me actively, inform me about conference/journals to publish, etc."

### Integration with other areas of the university:

- "I believe my supervisors are helping me enough. The problem however arises from non-synchronization between the PhD training programme and the supervision activity."
- "By working in concert with the research school to provide better training, such as subject specific seminars that address these areas."

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It is available to download at [www.rin.ac.uk/role-research-supervisors](http://www.rin.ac.uk/role-research-supervisors).





# About the Research Information Network

## **Who we are**

The Research Information Network has been established by the higher education funding councils, the research councils, and the national libraries in the UK. We investigate how efficient and effective the information services provided for the UK research community are, how they are changing, and how they might be improved for the future. We help to ensure that researchers in the UK benefit from world-leading information services, so that they can sustain their position as among the most successful and productive researchers in the world.

## **What we work on**

We provide policy, guidance and support, focusing on the current environment in information research and looking at future trends. Our work focuses on five key themes: search and discovery, access and use of information services, scholarly communications, digital content and e-research, collaborative collection management and storage.

## **How we communicate**

As an independent voice, we can create debates that lead to real change. We use our reports and other publications, events and workshops, blogs, networks and the media to communicate our ideas. All our publications are available on our website at [www.rin.ac.uk](http://www.rin.ac.uk)

**Research Information Network**  
**96 Euston Road**  
**London**  
**NW1 2DB**

Telephone +44 (0)20 7412 7946

Fax +44 (0)20 7412 7339

Email [contact@rin.ac.uk](mailto:contact@rin.ac.uk)