Research Leadership in the Social Sciences: A rapid evidence review

A report for the ESRC by CFE Research

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An independent report by CFE Research for ERSC. This has contributed to the evidence base informing ESRC's future support developing research leadership in the social sciences.

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Established since 1997, CFE Research is an independent not-for-profit social company specialising in research and evaluation in the fields of education, wellbeing and the economy.

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GLOSSARY

AHRC	Arts and Humanities Research Council
ALS	Action learning sets
BA	British Airways
BAME	Black, Asian and minority ethnic
BEIS	Department for Business, Energy and Industrial Strategy
COP	Community of practice
DfE	Department for Education
DTPs	Doctoral Training Partnerships
ECRs	Early-career researchers
EDI	Equality, diversity and inclusion
EPSRC	Engineering and Physical Sciences Research Council
ESRC	Economic and Social Research Council
HE	Higher education
MBA	Master of Business Administration
NIHR	National Institute of Health Research
NPQs	National Professional Qualifications
PI	Principal investigator
PM	Project management
R&D	Research and development
REA	Rapid evidence assessment
SEND	Special educational needs and disability
UK	United Kingdom
UKRI	UK Research and Innovation
US	United States

EXECUTIVE SUMMARY

This report by CFE Research presents a summary of a rapid evidence assessment (REA) of the characteristics of good leadership, and effective ways to develop the skills, attributes and experience needed to be an effective leader at different stages of a research career. The findings are based on evidence from both the academic and grey literature on leadership development in selected fields in the public and private sectors. Issues are presented for consideration by the ESRC as it explores its strategy for developing leadership capacity in social science research, informed by learning and insights from the evidence.

While the starting point for this research was an ambition to build research leadership capability within the social sciences, the issues and insights presented in this report are relevant to the research sector more broadly; they are also pertinent to broader discussions in the context of the Government's Research and Development (R&D) People and Culture Strategy (HM Government, 2021).

Context for the review

The research and innovation landscape has evolved significantly in recent years. UK social scientists are now operating within a complex system where demand for challenge-led research that cuts across disciplinary, sectoral and international boundaries has increased significantly. The R&D People and Culture Strategy aims to foster a research culture that 'supports discovery, diversity and innovation', to ensure the UK remains at the forefront of R&D globally. It sets out how achieving this vision is contingent on attracting, developing and retaining skilled people, as well as collaboration between academia, industry and the third sector, underpinned by 'great leadership' at all levels (HM Government, 2021). To help achieve this vision, ESRC's strategic priority is to support the development of skills – including leadership – among the UK's social science community. ESRC is, therefore, seeking to develop a new strategy to build research leadership capability with the social sciences.

Review questions

To inform this strategy, ESRC commissioned *Fit for the Future* (Flinders, 2020) which made 12 core recommendations to increase the profile and incentivise the development of skills for research leadership within the social sciences. To support ESRC in taking these recommendations forward, it was necessary to gain a more detailed understanding of the particular skills, attributes and experiences that facilitate effective leadership, and the best way to develop these. Hence, ESRC commissioned this REA to develop its understanding by addressing two overarching questions:

1) **What should effective leadership look like at different career stages in a research environment?**

2) **Which interventions have been most effective in developing the skills and experience required for effective leadership across different career stages, and what can we learn from what works?**

Approach

A rapid evidence assessment (REA) approach was adopted to address these questions. The search strategy focused on academic and grey literature published since 2016, which concentrated on leadership development in health, education, and the private sector. Literature that focused on leadership in a UK context, but which had not been reviewed for *Fit for the Future* was prioritised in the first instance. However, selected literature from outside the UK and highly relevant research published before 2016 were also included in the final analysis, to help more fully address the research questions. A total of 60 sources of evidence were included in the review: 38 academic papers, 16 reports from the grey literature, and 6 public sector frameworks. Based on an assessment of quality, which took account of methodological rigour, relevance to the research questions, and transparency of approach and execution, the evidence base was rated 'average'. While a minority of sources focused on characteristics of a good leader and effective interventions at a specific career stage (predominantly, the early career stage), most considered issues of leadership in general. The grey literature was largely descriptive and provided little evaluative evidence on the effectiveness of frameworks and approaches to leadership development. Therefore, the findings primarily draw on academic and public sector sources, which tend to be more robust and evidence-informed.

Key findings

Defining effective leadership

- The reviewed literature describes a range of leadership styles and their characteristics. The more autocratic or authoritarian styles are generally recognised as less relevant in the public sector, where leaders work across organisational, political and geographical boundaries. Current dominant models of leadership in the public sector are more 'collaborative', 'facilitative' and 'transformational'.
- Transformational leadership styles seek to inspire (rather than reward) people to enhance the way an organisation works, through innovation and collective action. There is some evidence that transformational leadership is particularly effective in administrative leadership positions within the HE sector.
- Leadership is multifaceted, comprising knowledge, skills and attributes which mean different things in different contexts. Definitions of leadership in the public sector typically focus on qualities, rather than skills, attributes or experiences.
- Qualities of effective leadership, and the associated characteristics of an effective leader in the public sector, are equally applicable to research leaders.

- Although the characteristics of an effective leader are common to most sectors, in a research context, different disciplines value different characteristics; and even within disciplines, there are nuances in terms of how an effective leader is defined.
- Across all sectors, effective leaders need to be skilled in self-leadership, the leadership of others, and strategic leadership. In the academic context, research leaders also need to demonstrate 'intellectual leadership' – that is, the capacity to create ideas, generate new knowledge, and contribute to advancements in their field.
- Leadership is inherent in every career stage; it is not a role or status limited to management or senior personnel. The level of skills, attributes and experiences needed to be an effective leader at each career stage does, however, vary according to the job role and the individual themselves. Notions of 'effective research leadership' also evolve as job roles and responsibilities change over the life course.
- Greater emphasis is placed on self-leadership in the early career stage, when researchers are less likely to have line management or project management responsibilities. As researchers progress to more senior positions, a sharper focus is placed on the development of skills to lead others and offer strategic and intellectual leadership.
- Organisational structures and traditional ways of working in HE institutions can act as barriers to leadership development at all stages of a research career for the following reasons:
    - Current models of doctoral training do not place sufficient emphasis or value on the development of employability skills, including leadership.
    - Many early-career researchers are employed on fixed-term contracts, and the lack of stability can mitigate against skills development.
    - Some established academics have progressed based on their academic credentials and performance, rather than their leadership skills or leadership potential.

Researchers at all stages of their career journey, but particularly those in the later phases, may not recognise the value of leadership development, their own skills gaps, and/or the need to develop new skills to lead in a more complex research and innovation landscape.

- Further research is required to understand current gaps in the leadership skills and development of social science researchers. However, **Fit for the Future** highlights that research leaders need support to develop supervisory, networking and teamworking skills. Wider literature from other sectors identifies that the current skills gaps among current and aspiring leaders include communication skills, conflict resolution, time management, presentation skills, budget management and finance.

Developing leadership skills and competencies

Common approaches to leadership development in the public and private sectors are mentoring, coaching, and bespoke leadership programmes.

Mentoring

- Mentoring is delivered formally by an appointed mentor or informally by peers. During their early career stages, mentees typically draw on the expertise of more experienced mentors to develop their research skills, as well as transferable skills such as team- working and problem-solving, along with their knowledge management processes and the funding landscape. In later stages, the process is more reciprocal, with mentors and mentees drawing on their collective experience to work through problems and challenges together.
- Mentoring is most impactful when the mentor is a 'good fit' for the mentee, in terms of their background and characteristics, and the relevance of their knowledge, skills and experience. When exploring potential mentor–mentee relationships in a research context, it is important to consider the proximity of their respective research interests.

Coaching

- Coaching is currently more common in the private, corporate sector than in HE. It differs from mentoring in that a coach is a formal and qualified role designed to provide guidance that helps a client achieve their potential, rather than to informally share their knowledge and experience to help develop a mentee's skills and competencies.

Bespoke leadership programmes

- Bespoke leadership programmes are developed to address the specific leadership development issues within a sector, organisation or community, and to address the under-representation of specific groups in leadership roles (e.g. women and people from BAME backgrounds).
- Existing leadership programmes in the health and state education sectors are informed by an analysis of prevailing gaps in leadership capacity, and by wider evidence on effective leadership. They are also underpinned by a clear articulation of their purpose, including the outcomes and impacts they are designed to achieve for participants, the employer, and wider stakeholders – an aim which is commonly presented as a Theory of Change. This ensures that programmes are regarded as both credible and worthwhile by those they are designed to support.
- Bespoke programmes are most effective when they are tailored to the leadership requirements of individuals at different career stages, and they draw on the expertise of external training providers that specialise in leadership development, as well as existing leaders who have knowledge of the organisational context (e.g. research environment).

- The accreditation of leadership programmes and the use of existing qualifications (e.g. MBAs) can incentivise engagement for some aspiring leaders, but could be off-putting to others – particularly more senior leaders (including established academics), who may perceive it as implying they lack competence in their role.

Informal and experiential learning play important roles in leadership development.

Informal learning

- The provision of independent learning resources, along with opportunities to network and collaborate with peers in action learning sets and communities of practice, all help to consolidate learning in more formal settings and foster the development of leadership skills and competencies.

Experiential learning

- Experiential leadership development provides opportunities for current and aspiring leaders to put theory into practice, and develop real-world experience of knowledge enquiry, adaptability and collaboration. ‘Stretch assignments’, which challenge leaders to work in new environments and assume different responsibilities, help develop awareness of personal leadership styles and alternative approaches, particularly if undertaken with support from a coach or mentor.

Conclusions

UK social scientists are world-renowned for their contributions to enhancing knowledge, understanding change, and informing policy and practice; but to remain at the cutting edge, they need to adapt in response to shifts in the research landscape. This demands a fresh approach to research leadership, underpinned by a coherent strategy and framework to raise awareness of the importance of good leadership at all levels, and to support leadership development over the life course (Flinders, 2020).

This evidence review has identified the core qualities of an effective leader, based on insights from a range of sectors and industries. Although the culture and traditions in academia create unique challenges for researchers, the core qualities of an effective leader identified in other sectors are equally applicable to HE, as are the mechanisms for developing them. However, a ‘one size fits all’ approach to leadership development for researchers in the social sciences, or in HE more broadly, is unlikely to be effective. A more nuanced approach is required, which takes account of an individual’s existing skills and attributes, career stage and career aspirations. This will support the development of the inclusive, innovative research culture envisioned in the R&D People and Culture Strategy (HM Government, 2021), which encourages collaboration and interdisciplinarity, as well as progression and mobility within and between HE and the wider R&D sector.

Issues for consideration

There is limited evidence on the characteristics of good leadership in the social science research context, and on effective ways to support leadership development during the life course. Therefore, this report identifies key issues for the ESRC to consider when seeking a strategy to build leadership capacity, by drawing on the insights, concepts and ideas within the wider literature. While it is acknowledged that it will take some years before any of the ambitions of a new strategy are fully realised, learning from other sectors suggests that there are some important incremental steps which could help to ensure the strategy is effectively implemented and embedded by ESRC, while working in partnership with key stakeholders – including those who are responsible for delivering leadership development interventions. These steps are summarised in the table below:

Overarching consideration	Potential next steps
Develop a Theory of Change for research leadership development (internal exercise).	• Summarise the inputs, outputs, short- and medium-term outcomes, and long- term impacts of leadership development in a logic model, to emphasise the importance of leadership and how leadership development will be integral to the social science research landscape, moving forwards.
Develop an evidence-informed competency-based research leadership framework.	• Conduct primary research to identify the leadership skills, attributes and competencies needed by researchers at different career stages, and current gaps, building on evidence from other sectors. • Consult the sector on the draft competency framework, to secure buy-in. • Work with other research councils / UKRI to explore the feasibility of a common research leadership framework, or to ensure synergy between the frameworks implemented by different research councils.
Develop guidance on fostering a culture of leadership development and effective mechanisms for leadership development, including mentoring.	• Draw on evidence to develop guidance on effective mechanisms for leadership development, including good practice in mentoring (which the evidence shows to be particularly effective and widespread across different sectors). • Consider the value of a recognition scheme to help ensure mentoring is embedded and of a consistent quality. Consider the value of encouraging research organisations to engage with mentors from outside the mentees' discipline or sector.
Develop leadership programmes informed by a competency-based framework that is relevant to different career stages.	• Explore the feasibility of developing leadership programmes for researchers in the social sciences, which are specific to career stages. • Identify DTPs willing to pilot a leadership development programme for researchers in their early career. • Develop partnerships with businesses that run graduate training schemes, to learn about their programmes and how they nurture and embed leadership.
Incentivise and embed leadership development within research organisations.	• Explore the possibility of providing funding to enable researchers on leadership programmes to be bought out of other institutional-level responsibilities (e.g. up to 10% of their time). • Consider how the wording of grant specifications could prioritise leadership as a skill that would be recognised, and link this to the new leadership framework.

01. INTRODUCTION

This report by CFE Research presents the findings from a rapid evidence assessment on the characteristics of good leadership and ways to develop the skills, attributes and experience at different stages of a research career.

The research and innovation landscape has evolved significantly in recent years. Today, UK social scientists are operating within a complex system which is helping to drive the global, knowledge-based economy. Demand for challenge-led research that crosses disciplinary, sectoral and international boundaries has increased within this dynamic environment. Thus, social scientists working within and outside academia have a key role to play in advancing knowledge and providing insights that can shape and inform policy and practice, as well as in creating a positive and inclusive research culture.

Ensuring that UK social scientists develop the knowledge, skills and attributes to successfully lead research, now and in the future, is a strategic priority for the ESRC. It is, therefore, seeking to develop a new strategy to support the development of social science leadership capability and ensure the UK remains a world leader in social science research. To inform this strategy, ESRC commissioned research into research leadership in the social sciences; this was led by Professor Matthew Flinders and published in June 2020.

Fit for the Future (Flinders, 2020) made 12 core recommendations to increase the profile and incentivise the development of skills for research leadership within the social sciences. Driven by a desire to take forward the report recommendations, ESRC identified a need for a more detailed understanding of the particular skills, attributes and experiences that facilitate effective leadership, and the best way to develop these. As a first step, ESRC commissioned CFE to undertake this rapid review of existing academic and grey literature on effective leadership from a range of sectors, in order to address two overarching research questions:

1) **What should effective leadership look like at different career stages in a research environment?**
2) **Which interventions have been most effective in developing the skills and experience required for effective leadership across different career stages, and what can we learn from what works?**

02. THE UK RESEARCH CONTEXT

This chapter explores developments in the UK's research and innovation landscape, and the implications for research leadership in the social sciences.

The recent R&D People and Culture Strategy highlights the vital role that science and innovation play in delivering economic prosperity, health and wellbeing, and environmental sustainability in the UK (HM Government, 2021). The strategy aims to foster a research culture that 'supports discovery, diversity and innovation' (p.5) to ensure the UK remains at the forefront of R&D globally. Achieving this vision is contingent on attracting, developing and retaining skilled people in R&D roles, and collaboration between academia, industry and the third sector – underpinned by 'great leadership' at all levels. To support this in the short term, the Department for Business, Energy and Industrial Strategy (BEIS) will, among other actions:

- develop a New Deal for postgraduate research students
- provide support for flexible, cross-sector training programmes, to encourage more movement and collaboration between academia, industry and the third sector
- better support interdisciplinary approaches, and design a pilot to help researchers acquire skills and knowledge beyond their own discipline
- ensure that leadership and management skills are actively developed and supported in talent programmes and in the cons grant holders' terms.

In the longer term, BEIS will work with the R&D sector to identify current skills gaps and future skills needs. As part of this, it will seek to address the impacts of short-term contracts and other barriers that disproportionately affect under-represented groups. By better supporting interdisciplinarity, and broadening career paths and entry routes (including apprenticeships), the Department will seek to widen access to the R&D system for people from a wider range of backgrounds, increase mobility across the sector, and foster leadership (HM Government, 2021).

Current models of research leadership and leadership development practice are not fit for purpose in the context of this strategy and the evolving research landscape, which increasingly requires social scientists to work collaboratively to address complex social challenges that cross traditional disciplinary boundaries (HM Government, 2020). The role of research leaders is now more complex and multifaceted; they are expected to obtain funding and manage budgets, conduct research and analysis, disseminate research findings, and establish a strong publication record – alongside mentoring junior staff, nurturing the research careers of others, and undertaking administrative tasks (Macfarlane, 2011; Shinton & Cowen, 2018). Issues of equality, diversity and inclusion (EDI) are increasingly interwoven with effective leadership. A strong research leader therefore needs to be able to operate across different dimensions and offer personal and collective leadership, as well as research and administrative leadership.

Identifying evidence of effective methods for developing leadership skills is a critical first step in embedding research leadership throughout a research career. However,

there are some contextual factors that can pose a challenge to leadership development; these need to be accounted for and addressed, in order to create the positive and inclusive culture that enables researchers working at all levels to develop their leadership capacity. These contextual factors are often not unique to the social sciences; however, they are discussed to provide some context for the review findings and issues for consideration.

Organisational structures and ways of working

Researchers operate in various types of organisations and sectors, which place different demands upon them. Despite these differences, and irrespective of their organisational context or discipline, researchers require a common set of leadership skills. However, to achieve the R&D People and Culture Strategy's objectives for broadening career paths and supporting researchers' mobility across the R&D sector, it is important to recognise the varied emphasis placed on specific skills and competencies in different settings, as well as the differences in how skills are deployed and in the systems for leadership recognition and reward. These organisational structures and ways of working can present a challenge for leadership development, as discussed below.

Doctoral training

According to recent reviews of doctoral training from ESRC and the Engineering and Physical Sciences Research Council (EPSRC), researchers' initial skills training and professional development must evolve to ensure graduates are equipped with the requisite skills and attributes for a range of careers in the research and innovation system (CFE, 2021; EPSRC, 2021). The review of the PhD in the social sciences, conducted for ESRC (CFE, 2021), revealed gaps in the development of advanced research skills; as well as in wider transferrable skills, such as budget management, the ability to apply research in practice, and to communicate with diverse audiences. Furthermore, the development of transferable skills, including leadership, is often given lower priority than research skills. As a result, students may not recognise the value and importance of developing wider employability skills (including leadership) to support them at all stages of their future careers. To address this problem, the report made a series of recommendations, including the following: minimum standards for the training needs analysis for doctoral candidates; greater flexibility to tailor training programmes to take account of students' existing knowledge, skills, experience and career aspirations; opportunities for students to apply their research in practice; and more opportunities to work collaboratively and across disciplines. Leaders of social science research need to embody these skills and attributes (Flinders, 2020), and leadership strategies for researchers must therefore adapt accordingly. ESRC is currently developing its response to these recommendations which, when implemented, have the potential to enhance leadership capacity both now and in the future.

Diversity of research roles

Analysis shows that social science doctoral graduates are employed in a wide range of roles within and beyond higher education (HE) (CFE, 2021). Within HE, those in academic roles are typically expected to balance research with teaching and administrative responsibilities, and the time for research is often squeezed by these other demands (Braun et al., 2016). Research leaders, therefore, need to compartmentalise the different elements of their job and develop the capacity 'to enable strategic engagement with competing primary tasks' (Murray et al., 2012, p.775). Furthermore, within the social sciences in particular, research has been traditionally regarded as an individual pursuit. Collaborative and interdisciplinary working, or mobility between the HE and other sectors, has not, until recently, been encouraged or supported. This is in stark contrast with practice in organisations outside HE, where researchers routinely work across a portfolio of projects in interdisciplinary teams and/or in collaboration with partners, including those based in other sectors. As a result, HE research staff have had limited opportunities to develop the requisite skills to become effective leaders in the increasingly complex research environment. The R&D People and Culture Strategy (HM Government, 2021) is seeking to address this issue by transforming the culture of research in the UK and creating new opportunities for leadership development.

Criteria for promotion

The expectation of having leadership skills differs during the life course. In the UK, as in the US, the effect of the baby boom generation has meant that faculty positions are often dominated by older academics (Doyle, 2008). Progression to professorial roles has historically been associated with length of service, expert subject knowledge and research skills, coupled with the ability to attract research funding. However, leadership skills have not explicitly featured within promotion criteria (Macfarlane, 2011). Although it does not necessarily follow that a good researcher will make a good leader without training and support, this established practice, along with a desire to maintain the status quo, can make those in more senior positions less receptive to innovation, including in leadership development. A fine balance therefore needs to be struck between valuing senior academics' experience, and challenging them to reflect and adapt their leadership style to a social science landscape that differs greatly from when they entered academia. Developing a coherent set of leadership principles that are applicable across the broad social science research environment thus presents a potential challenge.

Conditions of employment

Most post-doctoral and early-career researchers (ECRs) working in HE are appointed based on their subject knowledge and research expertise, to deliver a specific project on a fixed-term basis. Fixed-term precarious contracts do not create stable, supportive structures for ECRs to develop their leadership skills and experience (UCU, 2019).

Furthermore, opportunities to participate in leadership development may be more limited because of the restrictions and expectations of time-bound contracts. In the public and private sector, most large organisations offer training and support to graduates in their early career, so that they develop the employability skills, including leadership, that they need to succeed in the workplace. Many operate schemes which enable new recruits to rotate through the business and gain experience in different areas, and provide training, including in leadership and management skills (usually over a period of 1–2 years).[1]

Recruitment to full-time academic positions is implicitly understood to prioritise applicants' number of first-author publications and funding achievements over other skills and attributes, such as leadership skills. When faced with job insecurity, ECRs are thus more likely to focus on developing the elements that they believe institutions value and which are more likely to secure them employment, rather than skills such as leadership.

Furthermore, only recently (and not universally) have some research organisations[2] started to include academic leadership within their job role expectations. Therefore, for many, there is still the perception that leadership skills are not currently rewarded or incentivised within many HE institutions, and this can deter researchers from engaging in leadership development when it is offered during the life course.

Funding terms

In some spheres of academia, funding has tended to recognise and reward individual scholarship rather than collaborative or applied research endeavours (HM Government, 2021). More recently, there has been a shift away from singular esoteric research projects towards more collaborative cross-disciplinary inquiry that addresses the complex challenges in the social world. As a result, funders are seeking applications from multidisciplinary teams rather than sole principal investigators (PIs). For example, applicants to ESRC's New Investigator Grant are expected to work collaboratively, and the AHRC's research funding guide specifies that 'research grants are not intended to support individual scholarship' (2021, p.11). Inter- and multi-disciplinarity are also being promoted through large research grants: for instance, the ESRC's current call *Advancing adolescent mental health and wellbeing research*[3] states that 'a multidisciplinary approach is *expected*, where able, to add value and enhance the potential impact of the project'. This change has important implications for the skills development of researchers who lead, and work within, such teams.

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[1] See, for example, https://www.cosmopolitan.com/uk/worklife/campus/g21035834/graduate-schemes/
[2] See, for example, http://www.bristol.ac.uk/hr/policies/progression/criteria.html
[3] https://www.ukri.org/opportunity/advancing-adolescent-mental-health-and-wellbeing-research/

Equality, diversity and inclusion

The desire for a more diverse and inclusive research community set out in the R&D People and Culture Strategy (HM Government, 2021) is shared by ESRC, and there are ongoing activities to understand and develop an action plan for promoting inclusion within the research council.[4] Women and ethnic minority groups provide a particular focus, as they have been shown to be underrepresented in leadership roles in HE.[5] The R&D People and Culture Strategy highlights the importance of addressing the impacts of short-term contracts on leadership development and career progression, which disproportionately affect women and those from disadvantaged backgrounds; and of embedding a culture that values difference. The EDI agenda must therefore be central to any attempt to develop leadership capacity across the sector. This will ensure that leadership positions and development programmes are accessible to all, and acknowledge the particular barriers to progression that certain groups may face.

This section has highlighted some of the key contextual factors that can hinder the development of leadership capacity within the UK research environment. While the latest government strategy seeks to address these issues by driving changes in culture and behaviour and embedding leadership, multi-disciplinarity and collaboration, further work is required. To inform this work, we identify the characteristics of effective leadership in Chapter 4, and in Chapter 5 we explore interventions for leadership development and their applicability to social science research.

[4] https://esrc.ukri.org/about-us/policies-and-standards/equality-diversity-and-inclusion/

[5] https://www.advance-he.ac.uk/news-and-views/womens-leadership-in-higher-education; https://www.kcl.ac.uk/improving- representation-of-ethnic-minority-academics-in-senior-leadership

03. METHODOLOGY

This section provides an overview of the approach adopted for the rapid review of evidence.

Scope of the review

This review set out to address two key research questions and a series of sub-questions, as summarised in Table 1.

Table 1: Primary and secondary research questions

Primary Research Questions	Secondary Research Questions
1. What should effective leadership look like at different career stages in a research environment?	**1a) Definition:** How is effective leadership defined in other sectors and how applicable are these definitions to all career stages, particularly those within the social science research community? **1b) Expectations:** How do existing leadership and talent development frameworks in the HE, public and private sectors characterise the requirements for, and behaviours of, leadership, and what can we learn from them? **1c) Applicability** to the social science research community: To what extent and in what ways do the recommendations from the Flinders report feature within other articulations of effective leadership in a research environment?
2. Which interventions have been most effective in developing the skills and experience required for effective leadership across different career stages, and what can we learn from what works?	**2a) Effectiveness** of existing interventions: The *Fit for the Future* report recommends a number of ways to strengthen leadership skills, such as mentoring, interdisciplinarity, and team-based research. What can be learnt from existing initiatives, and what evidence considers interdisciplinarity and the recognition of leadership for researchers? **2b) Applicability:** In what areas can the learning be applied to address the identified needs in the social science research community at different stages during the life course?

A rigorous rapid evidence assessment (REA) approach was adopted to address these questions. This approach, while highly systematic, applies stringent search criteria and screening methods, to ensure that a comprehensive summary of existing literature across different sources can be achieved in a relatively short period of time and within defined budget parameters (Thomas et al., 2013).

A key requirement of the REA was to explore academic and grey literature (the latter being material in the public domain, such as organisational reports and websites) across a number of fields beyond HE. The initial fields of focus for the literature search were healthcare and clinical leadership, and leadership within schools. These fields were chosen because of their applicability and transferability to the broader education field and the

social sciences research environment. It was particularly important to learn from practice outside the HE field. As the search progressed, the search parameters were extended to explore what could be learned from other sectors, including the private sector. These other sectors were explored iteratively when identified through the search results, and in support of the main search areas specified above.

The review prioritised literature from the UK that had been published since 2016 and which was not reviewed for *Fit for the Future*. The life course perspective was used to frame this review, to ensure that the focus was also on how leadership development and characteristics may vary in different carer stages. In some instances, selected literature from outside the UK and highly relevant research published before 2016 were included in the final analysis, to help more fully address the research questions.

Approach

Searching and screening

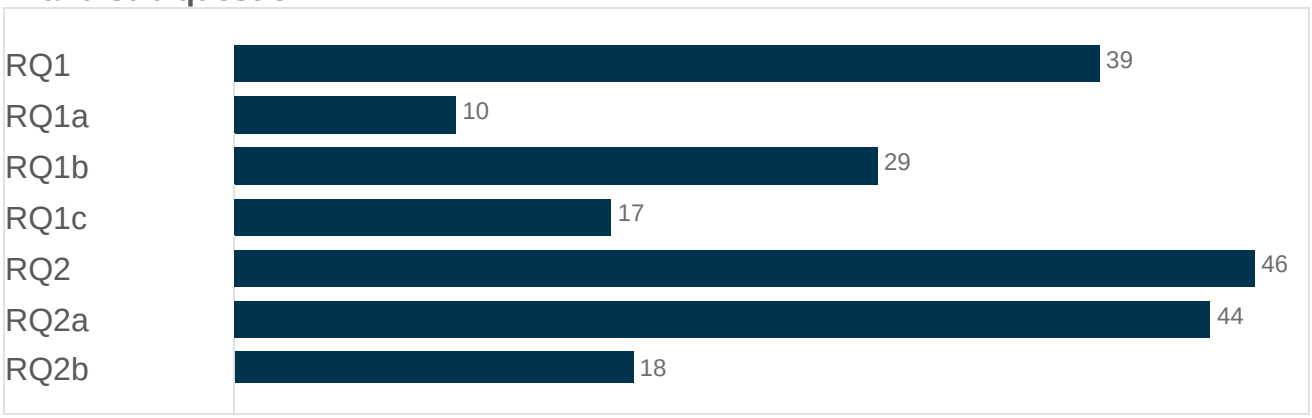
A list of primary and secondary search terms was created. From this initial list, we developed search strings which were used to identify potentially relevant sources of evidence. The full list of search terms and the search strings can be found in Appendix 1. To identify the academic literature, we interrogated selected databases (Web of Science, ERIC, Google Scholar); we searched for grey literature using Google and targeted websites. The bibliographies of relevant material were ‘hand searched’ for potentially relevant material that was not identified through other search strategies. Both primary methods returned thousands of results. Within the parameters of this REA, it was not possible to review all search results, so we screened the first ten pages of results for academic literature, and the first 100 results for grey literature. In total, the searches identified 222 sources for further screening: 148 academic, 57 grey, 12 public sector, and 5 private sector.

These sources were entered into an annotated bibliography. The material was screened by title and abstract (or introduction, as appropriate) and mapped against the primary research questions, to identify the most relevant sources. A short list of 56 sources was compiled for detailed review and analysis. During the screening process, few sources on intellectual leadership were found, and so a further search was undertaken on this topic within the same parameters. This yielded 4 additional articles for review. In addition to the shortlisted sources, we included evidence from CFE’s evaluation of leadership interventions in the education sector.

Review and analysis

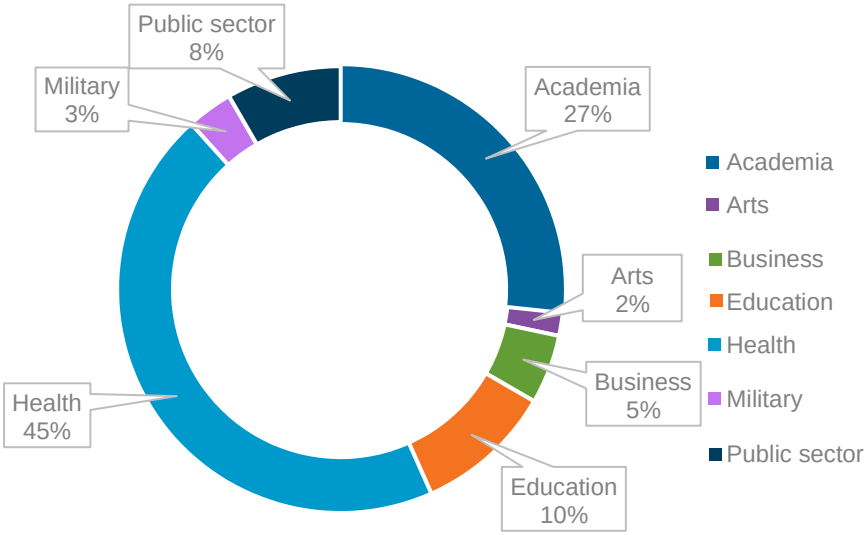
The shortlisted material was reviewed in detail and the findings mapped against the secondary research questions. A total of 39 sources were relevant to RQ1, and 46 sources relevant to RQ2. In total, 38 sources were coded as academic, 16 from the grey literature, and 6 were public sector frameworks. The number of sources that provided evidence related to each of the research questions is summarised in Figure 1.

Figure 1: Number of sources of evidence addressing each research question and sub-question



Further classification of the types of sources included in this review demonstrates that the majority are from the health sector, followed by academia, education and the public sector (Figure 2). The majority (71%) are articles, with 14% classified as reports, and the rest consist of blogs, conference proceedings, guides, theses, websites and books.

Figure 2: Breakdown of sources by sector



To answer our research questions, we sought to identify literature that addressed research leadership needs at different career stages[6] as summarised in Table 2 overleaf.

Table 2: Distribution of sources addressing specific career stages

	Early Career	Mid -Career	Late Career	General
Total	18	11	12	29

Only a small proportion of sources addressed specific career stages, and in particular, there was less evidence on leadership development in the late career stage, compared with the early career. Most evidence considered leadership development in general and did not identify specific characteristics or interventions to support leadership development at a particular point in a researcher's career.

The quality of the evidence was scored against criteria which assessed method, relevance, transparency and execution. All sources were rated against each criterion on a scale of 0 (low quality) to 3 (high quality) (see Appendix 2 for the full scoring matrices). Table 3 demonstrates that the majority of sources are rated either 1 or 2, suggesting that the quality is average. The 16 pieces of evidence identified through the grey literature searches typically provide summary information which is largely descriptive. These sources often lacked any supporting evidence or evaluation of effectiveness and were therefore of limited value in the context of this review. The evidence that can be confidently drawn upon tends to be from academic and public sector sources, which are more robust and evidence- informed.

Table 3: Rating of strength and quality of included sources

Method		Relevance		Transparency		Execution	
0 – No methodological information provided	2	0 – No relevance	2	0 – No clear objective stated	0	0 – Insufficient information provided / poorly executed	0
1 – Theoretical / conceptual studies	26	1 – Some relevance	17	1 – General statement of purpose	22	1 – Satisfactorily executed	17

[6] In this report, we use the terms 'early', 'mid' and 'late' career to describe the different stages of a leadership career. We acknowledge that some academics and researchers may be promoted to positions of leadership akin to 'late-career', such as professor, at a relatively young chronological age and may not consider themselves 'late-career'; however, this term describes the characteristics of their role and the expectations of their position.

2 – Observational research	31	2 – Good relevance	29	2 – Brief statement of objectives	31	2 – Well executed, low risk of bias	37
3 – Experimental / quasi-experimental studies	1	3 – High relevance	12	3 – Specific statement of objectives	7	3 – Very well executed, minimal risk of bias	6

The bibliography summarises the characteristics of each source of evidence. This evidence provides the basis of the findings presented in the following two chapters. The learning and insights from the evidence have informed the conclusions presented in the final chapter, which extrapolates the evidence to identify key issues for the ESRC to consider in its strategy for developing research leadership capacity within the social sciences.

04. DEFINING EFFECTIVELEADERSHIP

This chapter explores different styles of leadership and the characteristics of an effective leader, in order to provide insights into what good leadership looks like in a research context.

A range of leadership styles are evident across the studied sectors. These styles, and how they have evolved in response to changes in working cultures and practices – particularly within the public sector – are briefly explored. We then examine the way in which effective leadership is defined across a range of sectors, and how applicable and transferable these styles and definitions are to social science research. The chapter concludes by considering the features that are in many ways unique to *research* leadership, and identifying some key skills gaps that could usefully provide a focus for leadership development within the sector in the future.

Types of leadership

A number of styles of leadership are described in the literature, which typically identifies key characteristics but provides little evidence on their relative effectiveness. For instance, rarely are the qualities needed to be an effective leader of a particular style, or in a particular sector, clearly articulated (King & Wilson, 2020). The more 'autocratic' or 'authoritarian' leadership styles are, however, now recognised as less relevant and effective in the context of the public sector, and there has been a shift in the dominant models of leadership towards more 'collaborative', 'facilitative' and 'transformational' styles.

Collaborative leadership

Some evidence from the healthcare sector suggests that collaborative styles of leadership are more challenging to implement than other approaches, but that these are outweighed by the benefits, which include improved staff engagement, empowerment and satisfaction (De Brún et al., 2019). Collaborative styles of leadership, including distributed or collegiate leadership, encourage people to work together rather than in silos, and place a strong focus on building relationships, communicating ideas, and collective responsibility (Evans, 2014). Two essential facets of this type of leadership are, therefore, 'democratisation' and 'innovation' (King et al., 2020), as these help to ensure staff at all levels and career stages are empowered to develop more creative and novel ways of working, which contribute to a project's overall success.

Transformational leadership

The transformational leadership style evolved in the business context (Haworth et al., 2018), but it is increasingly recognised as an appropriate model for the public sector (Ellen, 2016; Glover, 2017). This style is based on the principle of inspiring others to transform the way an organisation works, through innovation and collective action. Transformational leadership is often contrasted with transactional leadership,

which is designed to motivate people and enhance their performance through a system of rewards. Transformational leadership has been shown to be an effective style for those in administrative leadership positions in universities, because it motivates staff through the development of shared visions and supports and encourages them to think 'outside the box'; in contrast, transactional leadership, with its focus on completing tasks underpinned by a system of rewards and punishment, was found to be ineffective in this context (Braun et al., 2016).

Given the increasing need for academics, researchers and those in senior leadership positions to work across organisational, political and geographical boundaries (Flinders, 2019; Evans, 2014), collaborative and transformative styles of leadership are equally applicable and transferable to the HE context, in order to foster interdisciplinary and cross-sector working (Haworth et al., 2018; Hitt & Ticker, 2016). However, while there are pockets of such practice, organisational structures and working practices across the sector – and within research in particular – are typically more aligned with more traditional 'top down' approaches (see Chapter 2). It is therefore necessary to challenge these established ways of working, in order to foster more collaborative approaches to leadership and the development of leadership capacity across all career stages.

Characteristics of effective leadership

It is perhaps unsurprising that different styles of leadership are characterised by different types of knowledge, skills and qualities. Therefore, defining 'effective' leadership often proves problematic, because what constitutes an effective leader in one style (e.g. authoritarian) often fails to do so in another (e.g. collaborative). The way in which effective leadership is defined also varies according to the sector, as does the way in which similar skills and attributes of an effective leader are described. For instance, discussions of leadership in the public sector generally focus on qualities rather than skills, attributes or experiences. These qualities are explored in more detail below.

Qualities of effective leadership

The National Leadership Centre was established to support senior public sector leaders in developing the skills needed to address tough challenges. The Centre identified five qualities of leadership from a preliminary review of the leadership literature: 'adaptive', 'connected', 'purposeful', 'questioning' and 'ethical'. Effective leaders in the public sector are expected to exhibit each of these qualities through their self-leadership, leadership of others, and strategic leadership (King & Wilson, 2020). Each of these facets of leadership is characterised by a series of skills and attributes, as outlined below.

Self-leadership

According to the NHS Leadership Academy (2017), the development of self-leadership skills is a prerequisite for the effective leadership of others. Self-

leadership is epitomised by attributes such as self-awareness, self-confidence, self-control, self-knowledge, resilience and determination. Effective self-leaders must also have the relevant knowledge to perform their role, and the confidence to apply this knowledge in executing their duties.

Leading others

In order to effectively lead others, individuals need to develop a good understanding of the people in their team, and the skills and confidence to adapt their leadership style in order to get the best from each individual (Vitae, no date [b]). A greater emphasis on teamwork and collaboration necessitates the development of a range of communication skills, including cross-organisational communication, conflict resolution, facilitation, relationship-building and networking (Elkington et al., 2017). When adopting a collaborative leadership style, an individual must also be able to build trust and respect with and between colleagues, and inspire people to buy into and work towards a shared vision or goal.

Strategic leadership

According to the Government Communication Service Leadership Framework (2020), an ability to think strategically is central to the work of the civil service, and staff at all levels require some level of strategic leadership skills in order to be fully effective. These skills are, however, particularly important for those in senior positions, whose role it is to direct projects, departments and/or whole organisations. In addition to the skills outlined above, good strategic leaders also need to exhibit critical thinking skills, and qualities such as courage, political awareness and astuteness.

Table 4 summarises the aims and characteristics of these elements of effective leadership, from the evidence reviewed from the public sector.

Table 4: Characteristics of effective leadership

Characteristics of effective leadership				
	Self-leadership	**Leading others**	**Strategic leadership**	**Cross-cutting personal qualities**
Aim	• Managing workload • Awareness of own values, goals and working practices	• Conveying vision • Creating a supportive environment • Developing capability across the team • Collaborative approach	• Establishing vision • Setting direction • Building capacity • Driving innovation and change	• Modelling expected behaviours • Integrity • Commitment • Viewing diversity as a benefit • Inquisitiveness • Motivation • Problem-solving skills • Adaptability/ flexibility • Creativity
Qualities	• Self-awareness • Self-reflexivity/ personal reflection • Self-control • Critical thinking • Emotional intelligence • Technical/ professional knowledge • Resilience • Determination	• Communication with colleagues • Ability to inspire • Empowering others • Listening skills • Openness • Being accessible • Developing trust • Mutual respect for colleagues • Conflict resolution • Facilitating teamwork • Holding others to account	• Networking/ connectivity • Communication with stakeholders • Courage • Strategic thinking • Intellectual flexibility • Political astuteness	

Characteristics of effective research leadership

The overarching qualities of an effective leader, along with the facets of the leadership role identified for the public sector (self-leadership, leading others,

strategic leadership) and the associated characteristics (knowledge, skills and attributes), are applicable to a research context. However, as Flinders (2020) notes, within the research sector, it is unlikely to be possible to develop a single definition or framework to characterise effective leadership, as different disciplines value different characteristics; and even within disciplines, there are nuances in terms of what an effective leader looks like. In addition, the level of skills, attributes and experiences a researcher needs to become an effective leader will vary according to the context in which they work, their job role, the stage in their career, and their personal characteristics and traits. In this sense, the research field is comparable to other sectors where there is a broad understanding of the qualities of an effective leader; but there are differences in terms of the emphasis placed on different skills and attributes.

The academic context creates a unique environment in which to foster and develop researchers' leadership capabilities, because 'the co-existence of formal and informal structures as well as academic traditions increases the complexity of leadership' (Braun et al., 2016, p.351). Furthermore, as noted in Chapter 2, the role of a researcher is multifaceted and can involve administrative and teaching responsibilities, in addition to research at different stages during the life course (Braun et al., 2016). Evans (2014) suggests that the sphere of *research* leadership specifically encompasses:

1) research activity processes and procedures
2) research skills and competencies
3) research output and productivity
4) researchers' motivation, satisfaction and morale
5) researchers' analytic capacity
6) researchers' understanding
7) researchers' knowledge structures
8) researchers' capacity for reason.

A further aspect of research leadership that distinguishes it from leadership in other sectors is the concept of 'intellectual leadership'. Intellectual leadership is characterised by the ability to create ideas, generate new knowledge and contribute to advancements in a specialist field (Oleksiyenko & Ruan, 2018). 'Contribution to knowledge' is a guiding principle that underpins doctoral training in the UK (and elsewhere). Although early- and mid-career researchers have the opportunity to develop and demonstrate intellectual leadership – for example, through co-authoring impactful journal publications (Oleksiyenko & Ruan, 2018) – this concept is more commonly regarded as fundamental to the role of later-career academics.

According to Oleksiyenko and Ruan (2018), 'intellectual impact emerges when a scholar defies societal/institutional harmony to pursue the truth, no matter how difficult or dangerous the consequent disagreements are' (p.408). As such, some of the characteristics of intellectual leadership could be considered to be at odds with those that are integral to other facets of effective leadership, such as collaboration and the development of a shared vision. However, networking and collaborative working are recognised for their role in the development of new ideas (Uslu & Welch,

2018), and as such they can help to strengthen, rather than undermine, intellectual leadership.

Leadership at different stages in a research career

In the evidence reviewed, much of the debate about the characteristics of an effective research leader was concerned with leadership in general and did not relate to specific career stages. The exception was the literature on intellectual leadership, which tended to focus on later career stages, and the role of professor in particular (e.g. Ruan, 2021; Uslu & Arslan, 2018; Uslu & Welch, 2018). Professorial leadership is characterised by an ability to maintain high standards of scholarship, develop colleagues, secure grants, affect the strategic direction of a university or RO, and represent a discipline and institution (Uslu & Arslan, 2018). However, balancing their own intellectual development (and the development of others) with wider administrative responsibilities can present a challenge (Macfarlane, 2011; Ruan, 2021). This can act as a barrier to leadership development at a more senior level, particularly if promotion is perceived to be based on individual performance rather than people's wider leadership skills or potential (Macfarlane, 2011).

Is important to note, however, that leadership is not a role or status limited to management or senior personnel (Haworth et al., 2018). Although the level and type of leadership skills needed at each career stage changes and evolves, researchers at *all* stages need leadership skills in order to execute their role effectively and progress within or outside HE (if desired). A subset of the reviewed evidence considered the skills, attributes and experience researchers need in order to demonstrate effective leadership at different stages during the life course. These, along with the skills, attributes and experiences identified as applicable to all career stages, are summarised in Table 5; the potential focus for leadership development at each career stage is also identified, drawing on insights from this literature.

Table 5: Leadership skills by academic research career stage

Career Stage				
	Early	Mid	Late	All career stages
Skills	Analytical skills	• Giving good feedback (comprehensive/constructive) • Managing competing primary tasks • Delegation • Understanding of mentoring • Financial awareness • Analytical skills • Engaging others in their vision	• Mentoring and guidance • Delegation • Financial awareness • Creative innovation	• Administration • 'People skills' / interpersonal • Good communication • Listening
Attributes	Adaptability	• Fostering mutual cooperation and open exchange of ideas • Inspiring and building capacity amongst the research team/dept • Developing opportunities for / encouraging co- creation and collaboration (promotion of knowledge sharing)	• Strong role model • Leadership by example • Ambassador for research • Strategic motivator • Academic credibility • Inspiring others • Challenging boundaries	• Empathy and sensitivity to issues of others (students and colleagues) • Being equitable • Integrity, respected, trusted, unselfish
Experiences	• Understanding of the research process • Gaining collaborative and interdisciplinary research experiences	• Emerging track record of funding, supervision, managing projects. • Collaboration • Budget management • Funding applications	• Collaborative research and managing large projects, incl. international networks • Managing large groups of people • Budget management • Funding applications • Relationship building	

Career Stage				
	Early	Mid	Late	All career stages
Focus for leadership development	• Raising awareness of role / importance of leadership at all career stages • Exploring leadership potential • Research collaboration • Self-leadership skills	• Developing intellectual leadership – research profile and expertise (including mobility and collaboration) • Fostering open and cooperative teams • Managing competing priorities	• Strategic leadership development • Nurturing talent • Maintaining intellectual leadership	• Collective approaches to leadership
Considerations	ECRs learn from those above them – importance of role modelling in the department	Likely to have many competing leadership responsibilities, as well as pressure to publish and a growing research profile, some strategic engagement and day-to-day tasks	• Shifting their thinking from being the 'expert' to inspiring, motivating and empowering others (Stoll, 2019) • Overcoming potential tension between intellectual freedom and the demands of administrative leadership	

To supplement the evidence focused on research leadership in an HE context, we have drawn on our own knowledge of the non- academic research environment to identify the leadership skills and competencies expected of staff at different career stages in this sector (Table 6). It is important for any new strategy to take this into account if it is to reflect the ambition of the People and Culture Strategy (HM Government, 2021), and support the movement of researchers between HE and other parts of the sector, including more commercial settings.

Table 6: Leadership requirements in non-academic research by career stage

Leadership requirements in non-academic research by career stage			
	Researcher	Manager	Director
Project delivery	• Understands the principles of PM and works within a budget • Manages own time and works to deadlines • Shows initiative	• Ability to lead projects, including staff resources and capacity • Ability to manage budgets • Client communication • Prioritises workload across projects • Timely communication with directors • Disseminates research findings	• Ability to lead large-scale complex projects • Anticipates risk, develops solutions • Monitors project delivery and budgets at organisational level • Ensures efficiency of delivery • Applies knowledge to add value to research findings • Quality-assures research outputs
Business development	• Understands business development processes • Effective communication with external stakeholders • Able to work collaboratively with peers internally and in other organisations	• Builds and maintains relationships with clients and other stakeholders • Contributes to proposals and pitches • Identifies opportunities to extend existing contracts in response to emerging need	• Leads partnerships and strategic alliances • Evaluates alignment of opportunities with strategic objectives of organisation • Uses commercial insight to assess risk and reward in high-value opportunities • Leads proposals and pitches • Promotes organisation and develops reputation

People management	• Shares skills and knowledge with peers • Seeks opportunities to learn from others • Takes ownership of tasks	• Gives constructive feedback to support development of researchers • Provides support and opportunities for experiential learning • Motivates others • Leads by example, maintaining integrity • Listens to colleagues' concerns and escalates where needed	• Addresses under-performance • Empowers staff to identify skills needs, ensure resource availability, and create a culture that prioritises this • Commitment to and engagement of others in a shared vision • Well respected • Able to bring out the individual and collective talents of all staff
Self-leadership	• Takes responsibility for allocated work • Reflects on own learning and seeks feedback • Reflects on own strengths and is proactive in identifying development needs • Able to respond to shifting requirements	• Able to lead research teams effectively • Establishes and maintains effective communication with team members • Delegates appropriately • Takes responsibility for own professional development • Demonstrates flexibility in response to changes, and overcomes obstacles	• Encourages a culture that supports reflection, learning and personal and professional development • Demonstrates resilience and ability to work in the most challenging and stressful circumstances • Leads change effectively and maintains high levels of commitment

Gaps in research leadership capacity

This chapter has identified the knowledge, skills and attributes needed to be an effective leader, and the specific competencies required of research leaders. To inform the development of a strategy to help build leadership capacity, and ensure that guidance and interventions are appropriately tailored and targeted, it is also important to understand where gaps in leadership capacity currently exist.

In their review of leadership in the public sector, Taylor and Bodurka (2017) identified that individuals in the early stages of their leadership journey typically lack skills in communication, conflict resolution, time management and presenting, which are integral to effective leadership. CFE's (2021) evaluation of the impact of National Professional Qualifications (NPQs) on leadership capacity in schools suggests that current and aspiring leaders require a greater depth of understanding of budgeting and finance. A 2018
evaluation of the NHS's director-level leadership programmes found that the top three developmental needs for directors were systems leadership, leading without authority through others, and resilience (Carter et al., 2018).

Nearly half of all research leaders surveyed for *Fit for the Future* (Flinders, 2020) said that they required further opportunities to develop their abilities in supervising researchers and providing career advice. This report also highlighted that the direction of travel is away from individual and mono-disciplinary work, towards a model that focuses on collaborative leadership skills and emphasises the capacity to work in teams. Networks that are currently available for researchers to collaborate are weak and underdeveloped; this represents a further area for development, to pave the way for the next generation of research leaders.

In the next chapter we explore mechanisms for addressing skills gaps, in order to ensure researchers develop the competencies they need to grow and evolve into effective leaders as they progress through their careers.

05. DEVELOPING LEADERSHIPSKILLS

This chapter explores the range of interventions delivered across the sectors reviewed and considers the transferability of this practice to support the development of social science research leaders.

Approaches to leadership development

The following sections describe commonly used approaches to support leadership development. These include mentoring and coaching, as well as bespoke leadership programmes that enable current and aspiring leaders to develop the requisite skills and attributes of an effective leader. The importance of informal learning in leadership skills development is also considered, along with the mechanisms that help to foster leadership development and consolidate learning, such as learning resources, cultures of collaborative learning, and opportunities to apply theory to practice. This chapter is based on evidence from existing leadership programmes in education and health, as well as documents reviewed through the REA. However, limited information is available on comparable leadership programmes in the private sector – a review of the approaches taken by some of the top UK companies is summarised in Appendix 5.

Mentoring

Mentoring is commonly used to support leadership development within the research environment and wider public sector; a distinguishing feature is that mentoring can be delivered in a formal or informal way. There are benefits of both approaches for aspiring leaders, and current research leaders recognise mentoring's contribution to their success (Browning et al., 2017).

Formal mentoring

Mentoring is usually a strong one-to-one relationship formed between a mentor and mentee. Typically, the mentee is at a more junior career stage, and draws on the mentor's expertise to address their career aspirations and overcome potential hurdles in their development. Antes et al. (2016) suggest that the characteristics of effective mentoring include: fostering open communication, meeting regularly, personalising the approach to the individual, providing guidance whilst encouraging independence, setting clear deadlines, and expecting self-motivation.

Within the research environment, Garonzik-Wang and Segev (2018) suggest that mentoring can be effective in assisting ECRs to gain the necessary research skillset and knowledge of the funding landscape, develop manuscript and grant writing skills, and form collaborative and multidisciplinary relationships. This knowledge and these skills are integral to effective leadership in a complex and competitive research landscape. Mentors can also fulfil an important role by mapping and regularly reviewing their mentees' career plans, helping them to achieve their ambitions by drawing on their own experience in the sector.

Evidence from the Chiropractic Academy for Research Leadership (CARL) programme (Adams et al., 2018) supports the use of formal mentoring for ECRs over an initial three- year period, to provide insights into academic and research management and problem solving. The need for a structured mentoring programme for those in their early career is further reinforced across the public sector; for instance, the Department of Health and Social Care state that 'all newly qualified nurses should undergo preceptorship … a period of structured transition to develop their confidence as an autonomous professional and refine their skills, values and behaviours' (Kirkham, 2020, p.9).

As an individual progresses to a more senior position in their career, mentorship becomes more reciprocal, with mentors and mentees sharing experiences, working through potential problems collaboratively, and developing leadership through a more equal distribution of power within the relationship (Edwards et al., 2021; Hitt & Ticker, 2016). Both the mentor and mentee benefit from the process which facilitates active (rather than solitary) self-reflection, leading to improved self-awareness – two qualities which are also identified as core attributes of an effective leader (Keijser, 2019).

The ability to work in collaboration with others, including cross-sector and internationally, is identified as a core skill of an effective leader, particularly in a research environment (see Chapter 4). Mentoring can help to facilitate collaboration, particularly when it is integrated into a programme where a network of researchers (including international researchers) is established to enable them to work together and share their findings and ideas (Adams et al., 2018).

Informal mentoring

Informal mentoring happens within the research environment when less experienced researchers work alongside more experienced colleagues, who act as role models and share their knowledge and experience (Baek & Bramwell, 2016; Taylor & Bodurka, 2017; see the case study below). Buddying systems work on the same premise, by ensuring that less experienced staff have access to a more experienced colleague, whom they can approach for support and to ask questions.

Case Study: Deloitte UK[7]

Deloitte represents a case study example, providing one mentee's perspective on the role of mentoring in their career to date. According to the case study, 'mentors matter in lifelong learning, and continual career development'. A good mentor is identified as someone who guides, inspires, and looks out for the mentee.

The power of mentorship is also demonstrated: 'As a woman in my industry, having a female mentor has been an inspiration. It's hard to become what you can't see, and seeing my mentor flying high in her career, leading teams, boardroom meetings and projects, reminds me there's no reason why I can't achieve the same and beyond.'

A strong, positive relationship between the mentor and mentee is key to the success of mentoring. It is therefore important to ensure the mentor is a 'good fit' for the mentee – both in terms of their background and characteristics, and in the relevance of their knowledge, skills and experience (Elkington et al., 2017). When exploring potential mentor–mentee relationships in a research context, it is also important to consider the proximity of their respective research interests. If they are too closely aligned, this can lead the mentee to become introspective and narrow in their focus; if they are too far apart, this can result in tensions and conflict (Weston & Roostalu, 2018).

Based on their analysis of the DRILL programme (Developing Research Innovation, Localisation and Leadership), Brysiewicz et al. (2020) suggest that mentees benefit from access to multiple mentors who can assist them with different elements of their development. This also helps to mitigate the risk of a mentee becoming over-mentored and too introspective.

Coaching

Although there are some similarities between coaching and mentoring, there are also fundamental differences, particularly in the nature of the two roles. While the role of a mentor is to share their knowledge and experience to help the mentee develop their skills and competencies as a leader, a coach provides formal and structured guidance to help their client achieve their potential (Clutterbuck, 2008). Coaching is far more common in the private sector, where specialised leadership coaches work with private sector companies and their employees, to develop their leadership capacity (see BA case study overleaf).

[7] https://www2.deloitte.com/uk/en/blog/deloitte-careers/2018/the-great-importance-of-mentors-in-my-career-journey.html

Case Study: British Airways

Coaching is a specialist role, and coaches require training in order to provide effective support for those they coach. British Airways commissioned an external development organisation (Talent for Growth) to deliver a series of bespoke two-hour workshops to support the development of internal coaches. The workshops were designed to stretch the coaches, extend their repertoire of tools, and build their confidence. Coaches who attended the workshops reported higher levels of confidence, and shared good practice across the organisation.

There are, however, some examples where coaching has been implemented successfully in the public sector to support leadership development. For example, social workers who complete the Practice Leader Development Programme are coached during their first 12 months in a leadership role, by an experienced leader who helps them to make the transition and apply their learning in practice (Haworth et al., 2018). Equally, there is growing evidence that some HE institutions are offering coaching to staff, to develop their leadership skills.[8]

Bespoke leadership programmes

Increasingly, organisations and businesses are developing bespoke leadership programmes to address the perceived shortage of quality leadership development within their organisation or sector. Prior to commencing a bespoke leadership programme, organisations conduct a needs analysis to identify gaps in their leadership capacity.

Bespoke programmes are then tailored to the leadership requirements associated with different career stages. For example, the NHS leadership programmes are tailored to the needs of employees at different stages in their leadership journey: the Mary Seacole Programme is designed for those in their first formal leadership role, and the Nye Bevan Programme aims to accelerate individuals' progress to executive-level roles in the NHS (see the NHS Leadership Academy case study overleaf).

[8] Examples of HE institutions that are offering coaching include: Imperial College London (https://www.imperial.ac.uk/staff- development/people-and-organisational-development/coaching-and-mentoring/coaching-at-imperial/); University of Bristol (http://www.bristol.ac.uk/staffdevelopment/coaching-service/leadership-coaching/); and Lancaster University (https://www.lancaster.ac.uk/od-and-ed/od/professional-services-learning-and-development/coaching-and-mentoring/).

The NHS Leadership Academy

The NHS Leadership Academy encompasses a range of leadership programmes for NHS employees at different career stages. The various programmes that have been evaluated are displayed in the following table.

Programme	Description/ Target participant	Identified strengths of the programme
Elizabeth Garrett Anderson	NHS staff looking to take on a senior leadership role. The programme is fully accredited and leads to a Master's in Healthcare Leadership.	The majority of participants expressed a positive change in their leadership effectiveness following the programme. Leaders developed their confidence, self-reflection, and ability to form a strategic view and ground their leadership practice in evidence.
Mary Seacole	A leadership programme implemented locally within an organisation or system.	Participants identified working more collaboratively with better networking and partnerships. They developed a shared sense of leadership and better team working.
Nye Bevan	A one-year development intervention for leaders aspiring to be in executive teams in the next 1–2 years.	Participants highly valued the learning sets, opportunities to network, and time to think and reflect. Participants had a greater sense of self-awareness, confidence, and resilience, as well as a greater understanding of leadership.
Director Programme	Targets directors (or equivalent) with 2+ years of experience.	Participants valued supportive networks and the emphasis on experiential learning, plus executive coaching.
Stepping Up	Staff from a Black, Asian and minority ethnic (BAME) background.	Not available.
Ready Now	Senior leaders from a Black, Asian and minority ethnic (BAME) background.	Participants valued the focus on experiential learning, coaching and pastoral support, and networking opportunities.
Intersect Programme (last cohort in 2016)	Public sector leaders (most participants are from the NHS, white- British female and in senior leadership roles).	Participants reported an improved quality of relationships and could respond and positively manage diversity and difference. Positive changes were sustained over time.

The NHS commissioned independent evaluations of these leadership programmes which found positive impacts (Kilbane et al., 2017), including individuals becoming more resilient leaders and having more productive relationships with colleagues. Moreover, through targeting the programmes at specific career stages and under-represented groups, the evaluations have shown that they support career progression and encourage participants to pursue further learning and development opportunities.

A key positive principle of these leadership programmes was their experiential nature, allowing participants to explore their experiences in ‘real life’ situations, rather than relying on abstract theory. Through working in groups, using the principles of ‘action learning sets’ (ALS), these programmes also allowed participants to develop strong relationships; these often lasted beyond the end of the programme, and created a network of leaders within an organisation.

The cumulative evidence demonstrates the strength of these bespoke leadership programmes, which are matched to the different stages of leaders’ careers in the NHS. Whilst the form of delivery stays largely similar across the different programmes (ALS, networking, coaching), the content and emphasis of the reflection activities and leadership capabilities are adaptable. All programmes are mapped to the nine healthcare leadership model dimensions to ensure coherence (NHS Leadership Academy, 2013). This also helps participants to understand where they are on their leadership development ‘journey’ and identify what they need to do to reach the next stage. The leadership model in the NHS is transparent and clearly valued by those within the system.

In 2018, the NHS commissioned an evaluation of its director-level leadership programmes. Half of all respondents reported that they were planning to undertake leadership development activities in the near future, indicating that training for senior leadership is supported and culturally expected within the NHS. For this director-level leadership programme, elements that were valued included experiential learning, time away from other clinical duties, executive coaching, and supportive networks achieved through both residential activities and learning sets. Specifically for more senior leaders, short learning events are preferable, as these allow director-level leaders to consider issues from different perspectives, but are not as time-intensive as big set-piece programmes (Carter et al., 2018).

There is an argument that leadership programmes should be implemented before staff are appointed to leadership roles (Braun et al., 2016). Within the medical sector, Taylor and Bodurka (2017) advocate the use of Master of Business Administration (MBA) qualifications to support the development of managerial and leadership skillsets. However, Carter et al.’s (2018) evaluation of director-level leadership programmes in the NHS suggests that those who have been at a senior position for a period of time may be reluctant to engage in a substantive leadership development programme such as an MBA because it implies that they lack competence in their role. Some established leaders in the research sector could share this concern. Bespoke programmes, which take account of the wider culture and ethos of the organisation, may be perceived as less threatening by senior leaders, and as such, they may be more likely to engage, particularly if the programmes are co-created with current or aspiring leaders (Manville et al., 2015). These programmes are likely to be most successful when they draw on the expertise of both external training providers that specialise in leadership development, and existing leaders who have knowledge of the research environment, but who might lack the underpinning theoretical knowledge of leadership.

Bespoke leadership programmes are also developed to address the under-representation of specific groups in leadership roles. Alongside its career-specific leadership programmes, the NHS has two programmes for Black, Asian and minority ethnic (BAME) candidates: 'Stepping Up', for generic leadership and management development for any BAME staff; and 'Ready Now', to support the progression of BAME leaders in senior roles (see **Error! Reference source not found.** in the NHS Leadership Academy case study above).

Although there is limited evidence on the impact of these programmes, an evaluation of 'Ready Now' reported elements that, according to participants, contributed to its success, such as being part of a large, diverse cohort; focusing on experiential and work-based challenges; residentials giving time and space to engage with their development; bespoke coaching support, and a flexible delivery approach. However, ongoing systemic challenges were also acknowledged, suggesting the need for a wider structural commitment to addressing EDI, which goes beyond providing bespoke programmes (OPM Group, 2017).

A review of evidence on organisational interventions to advance women in healthcare leadership concluded that in order to build a positive and inclusive culture, interventions also require the following: an organisational commitment to increasing the numbers and visibility of women at all levels of leadership; transparent support for gender equity in selection and promotion processes; and leadership commitment and accountability for sanctioning and championing EDI policies and practices. Short-term initiatives do not result in embedded change, and co-designing programmes with women can help identify organisational priorities and improve career opportunities and prospects (Mousa et al., 2021).

Resources to support self-guided learning

Evidence suggests that supplementing formal training and interventions with resources to support self-guided learning helps to embed leadership skills and principles into an individual's wider working practices (Henshall et al., 2020). Hosting the resources online provides flexible access to materials for participants, irrespective of their working pattern and wider commitments, enabling them to refer back to the resources as and when appropriate throughout their leadership journey (Carter et al., 2018).

All the NHS leadership programmes for different career stages provide online resources and content that participants can work through and refer to in their own time. Online learning is an important part of the assessment of these programmes, and is accompanied with face-to-face learning activities for consolidation. It is necessary to support such supplementary resources with active engagement in leadership development activities (Keijser, 2019); this shows that providing resources alone is not sufficient to embed leadership behaviours in practice.

Collaborative learning

Action learning sets (ALS) are commonly used in leadership development programmes to facilitate collaborative learning. ALS comprise a group of people within an organisation who meet with the intention of collectively solving problems. The formation of these peer support networks can contribute to enhanced self-awareness, confidence and resilience, as well as increased collaboration (Edwards et al., 2021; OPM Group, 2017), all of which are identified as core competencies of an effective leader. ALS are used in the NIHR (National Institute of Health Research) Senior Nurse Leadership Programme (see case study overleaf), to foster a sense of collective purpose and empower participants through peer learning.

Case study: NIHR 70@70 Senior Nurse Research Leader Programme

Funding was obtained for a senior nurse and midwife leader programme in England, to increase research capacity and support the development of future research leaders. The programme was developed through a steering group that included senior NHS nurses, midwives, and representatives from the NIHR Academy and Clinical Research Networks.

The programme was based on the principles of experiential learning and collective decision- making. It gave participants access to bespoke online learning resources, online networking forums, regular meetings (action learning), and peer support. Participants' self-reported benefits of the programme included being part of a network (46%), having protected time (22%) and having workplace autonomy (13%).

ALS typically convene every couple of months, to provide sufficient time for members to implement changes agreed at the previous meeting and capture any learning that can be shared to further enhance practice. In the context of leadership development, including in a research context, ALS can be used to influence organisational culture and create a shift from individualised to more collaborative approaches (Henshall et al., 2020).

The opportunity to work as a team in the context of a leadership development programme also helps participants to develop the skills to work collaboratively in other contexts.

Participants in the NPQ programme valued the collaborative nature of the sessions, and recognised how they could apply these skills to enhance their own style of working (CFE, 2021).

Opportunities to put theory into practice

The 70/20/10 rule underpins leadership development in the corporate world. According to this rule, 70% of leadership development should be experiential, 20% gained from informal learning, and 10% from formal study (Rashid et al., 2020). This model emphasises the importance of learning 'on the job', particularly for ECRs (Suleman et al., 2021), and opportunities for emerging leaders to apply their learning in practice. As Grote et al. (2019, p.175) argue, 'the acquisition of leadership

qualifications and portfolio competencies alone are no substitute for programmes which foster real-world experience of knowledge, enquiry, adaptability and collaboration to develop effective leadership'. However, for a programme's success, it is critical that participants are given sufficient time to both apply their knowledge and receive feedback to support their ongoing development. To facilitate this, junior doctor leadership schemes usually last a minimum of 12 months (Grote et al., 2019).

The military seeks to foster leadership qualities in its recruits from the outset. Each individual is expected to take on a leadership role in group tasks, and through this process, some 'naturally' emerge as informal peer leaders. Evidence suggests that these 'informal' leaders subsequently become more effective formal leaders (Luria et al., 2019). These insights suggest that some people, regardless of training, make more effective leaders because of their inherent attributes and personality traits. Developing mechanisms to identify and nurture 'natural' leaders, so they can flourish in such roles, is therefore worthwhile. In a research context, the skills need assessment; hence, research-in-practice opportunities and supervision of doctoral students provide mechanisms for initially identifying leadership capacity which can be subsequently nurtured in postdocs and beyond. This is not to suggest that those without a 'natural' propensity cannot or should not be supported in developing their leadership capacity; on the contrary, in an increasing complex research landscape, it is essential for all researchers to develop some leadership skills and qualities, to enable them to be self-directed and work well with others. However, it is equally important to recognise that not all individuals will be best suited to more senior or strategic leadership roles as their career progresses.

Providing individuals with 'stretch' assignments, which challenge them to work in new environments and assume different responsibilities, can help them to learn about themselves and their leadership style 'on the job' (Baek & Bramwell, 2016). This approach is commonly implemented as part of a coaching programme in the corporate world. For example, coaches involved in delivering Deloitte's High Impact Leadership programme provide stretch assignments and, through the coaching relationship, help individuals to reflect on their performance and provide guidance on how to improve in the future.

Challenging individuals to work outside their normal discipline has also been shown to be effective in the clinical environment, by providing opportunities to observe alternative styles of leadership in practice (Kirkham, 2020). This suggests that encouraging early- career academics to attend interdisciplinary meetings or events, and take up opportunities to work in multi-disciplinary teams led by individuals from different departments or organisations, would expose them to other styles of leadership, and thus create a blueprint for self-reflection on their own leadership style. As a researcher progresses in their career, secondments, visiting fellowships or internships would provide further opportunities to observe and experience leadership in other contexts, to help shape an individual's own leadership style.

Informal learning

Formal training is crucial for developing and embedding a knowledge of leadership and skills. However, as the previous sections have shown, most of an individual's leadership development occurs outside formal training environments, through mentoring discussions, peer learning, and observing 'real life' leadership behaviours. As Rashid et al. (2020) note, informal learning also plays an important role in leadership development.

Informal learning can occur in a number of ways, including communities of practice (COPs). COPs are informal learning networks which often evolve organically to facilitate discussion between individuals facing similar challenges (NHS Institute for Innovation and Improvement, 2017); in this respect, they differ from ALS. COPs can fulfil an important role in relation to leadership development by bringing together peers at the same stage in their leadership journey, who can act as a sounding board and offer support to overcome specific leadership challenges. This approach has been shown to be effective in a social work context by enabling aspiring social work leaders to share their knowledge and expertise (Haworth et al., 2018). However, in order to flourish, the pervasive culture must be one of knowledge-sharing and collaboration. This presents a challenge in the context of research, as students and academics have traditionally worked in isolation from their peers. However, HE institutions are increasingly recognising the need to provide opportunities for doctoral students and ECRs to network, in order to overcome feelings of isolation and enhance their wellbeing (Metcalfe, et al., 2020). These could be harnessed specifically to help build leadership capacity in the early as well as later stages of a research career.

Opportunities for self-reflection

Self-reflection is critical for leadership development and a core skill of an effective leader. Self-reflection is inherently linked to feedback, so while leaders must be supported and encouraged to reflect on their own learning, it is important that they also receive feedback from others on their strengths and weaknesses (Braun et al., 2016; Kilbane et al., 2017).
Holmberg et al.'s (2016) evaluation of a leadership programme delivered to a corporate company in Sweden demonstrates that by embedding self-reflection across five residential seminars, the programme helped to improve participants' leadership self-efficacy and personal skills. In the evaluation of the NHS Mary Seacole Leadership programme, Kilbane et al. (2017) found that self-reflection increased participants' awareness of the need to listen to others, empower their teams, listen to feedback, and allow others to make decisions and changes.

Self-reflection can be incorporated into other types of leadership development methods, including mentoring discussions, ALS and COPs. Peer feedback can also help support critical self-reflection with a focus on continual improvement. '360 degree' feedback is commonly used in corporate settings; this mechanism ensures that individuals both receive feedback on their own performance and provide feedback on that of others, including their seniors. Understanding how they are

perceived by a range of people, including managers, peers and clients, helps individuals to reflect on their leadership style and behaviours, in order to adapt them where necessary to bring out the best in themselves and their colleagues (Kilbane et al., 2017).

Networking

A key part of being an academic is attending events and conferences. Networking at these events can help to facilitate the development of connections and relationships which can form the basis of formal and informal mentoring relationships and collaborations (Browning et al., 2017). These networks, which are often interdisciplinary and international, can help to build individuals' research capacity (Gibson et al., 2019), as well as facilitate leadership development by increasing confidence and encouraging self- reflection (Edwards et al., 2021). It is therefore important to promote networking and provide opportunities for doctorial students and ECRs to develop these skills, along with the social capital needed to progress in their career.

A framework for leadership development

A framework for developing effective leadership should bring together many of these aspects and offer the flexibility to tailor the specifics to different individuals, job roles and career stages. In the education sector, one framework that achieves this balance of structure, and the flexibility to support the development of leadership qualities in school staff as they progress through their career, is the National Professional Qualifications (NPQs). The case study overleaf provides further detail on this framework, and how a series of leadership programmes are mapped to the different career stages.

The Department for Education (DfE) National Professional Qualifications (NPQs)

The NPQs are a set of professional qualifications that support the development of current and aspiring teachers and leaders at all levels, from middle through to executive leadership. A shared, evidence-informed understanding of what works in school leadership is at the heart of the programme. Although voluntary, NPQs are the most widely recognised qualifications in the education sector and confer a high level of prestige. Subject to extensive external review, the qualifications reflect how effective leadership is defined in the sector, and the specific skills, attributes and experience required at each level of leadership.

Teachers and leaders can train for them at any point in their career. Generally, study for each NPQ takes between two academic terms and 18 months. Each NPQ develops six content areas: strategy and improvement, teaching and curriculum excellence, leading with impact, working in partnership, managing resources and risks, and increasing capacity. They also develop seven leadership behaviours: commitment, collaboration, personal drive, resilience, awareness, integrity and respect.

Providers are commissioned by the Department for Education to deliver training for these NPQs based on a Content and Assessment framework, which ensures that the qualifications are accessible, high quality and nationally consistent. They must re-apply for accreditation regularly. Each framework has been created by DfE in collaboration with a wide range of sector bodies, including unions and special educational needs and disability experts. The Education Endowment Foundation also independently reviewed the frameworks to ensure they are based on thorough, reliable and trusted evidence.

Providers are given relative autonomy to deliver NPQ training in whichever form they wish, as long as they abide by the stipulations within the frameworks. However, all providers deliver the curriculum through the following structure and teaching methods:

- on-the-job leadership training
- challenge and support – through a coach and/or mentor
- access to high-quality resources, drawing on up-to-date research and evidence
- professional development from and with credible peers
- opportunities for structured reflection

DfE recognises that the evidence base is not static and, as such, the design of NPQ frameworks should also be dynamic. Thus, the NPQs are reviewed on an ongoing basis. In 2017 the DfE launched four new, reformed NPQs to help address leadership gaps in UK schools. From September 2021, three new NPQs were created to improve the specificity of leadership training for teachers, replacing the generic Middle Leadership NPQ. These are for Leading Teacher Development, Leading Behaviour and Culture, and Leading Teaching, which are applicable to the different specialisms a senior leader might take in their career.

Programme	Description/Target participant	Aim of the programme
Leading Teacher Development (Specialist NPQ) new for 2021	Teachers who are responsible for the training and development of other teachers.	Enable trainees to design, deliver and implement effective professional development and training for other teachers.
Leading Behaviour and Culture (Specialist NPQ) new for 2021	Teachers who have, or intend to have, responsibilities for leading behaviour and pupil wellbeing.	Give trainees the skills to shape school culture; enable conditions for good behaviour; support complex behavioural needs; improve professional development; and implement these changes.
Leading Teaching (Specialist NPQ) new for 2021	Teachers who are subject leads or responsible for improving teaching practice in a subject, year group, key stage or phase.	Enable trainees to influence school culture; expand understanding of pupil learning; support colleagues' curriculum development and lesson planning; help colleagues to teach adaptively; facilitate effective pupil assessment; plan and lead CPD.
Senior Leadership (Leadership NPQ)	School leaders who are, or are aspiring to be, a senior leader with cross- school responsibilities.	Develop leaders' ability to improve school strategy and culture; support teachers' delivery of curricula and assessment; influence good pupil behaviour; respond effectively to SEND (special educational needs and disability) pupils' needs; manage school resourcing and recruitment; practise good Governance.
Headship (Leadership NPQ)	School leaders who are, or seek to be, a headteacher or head of school with responsibility for leading a school.	Further improve leaders' capability to establish and sustain effective strategy; ensure effective teaching, curricula and assessment design and implementation; motivate and protect pupils; ensure success of pupils of all needs; support teachers' professional development; manage resourcing and risk; ensure effective overall school management and Governance.
Executive Leadership (Leadership NPQ)	School leaders who are, or aspire to be, an executive headteacher or have a school trust CEO role with responsibility for leading several schools.	Develop senior leaders' ability to establish and sustain an effective trust strategy and culture; support trust-wide teaching through effective resourcing, curricula development and assessment implementation; help trust staff to influence positive pupil behaviour; ensure trust schools have the capacity and skills to support SEND pupils; ensure effective trust-wide CPD; manage trust- wide policies, resourcing and risk; show effective trust- wide Governance and accountability.

Summary

This chapter has illustrated the different mechanisms to promote leadership development. Leadership can be developed both formally and informally, but it is important that formal methods are taught so that these skills can then be embedded in practice by individuals.

Table 7 illustrates the different mechanisms that have been included in this chapter, summarising their benefits for researchers at different career stages.

Table 7: Mechanisms to develop leadership at each career stage

Career stage			
Intervention	Early	Mid	Late
Mentoring	Benefit of receiving mentoring from more experienced leaders. Identified by millennials as one of the most valuable leadership development strategies (Baek & Bramwell, 2016).	Benefit of mentoring others and being mentored by more experienced leaders.	Mentoring others to encourage reflection on own leadership. Those new to senior leadership would benefit from being mentored.
	Mentoring helps individuals at all stages, as both the mentor and mentee benefit.		
Coaching	Coaching helps learners to achieve their potential. Early and mid- career leaders would benefit by challenging and stretching their leadership capacity.		
	Coaching requires more specialised training, making it less accessible than mentoring, which is less dependent on the individual offering specific guidance.		
Bespoke training programmes	Training programmes should occur before an individual takes their first leadership role.	Bespoke programmes suit the specific demands of mid-career leaders, which should be co-created with participants.	Freestanding singular events to develop leadership may be more palatable to senior leaders (than long programmes).
	When creating bespoke training programmes, it is possible to develop needs analyses so that the programmes are specific to the individual needs of each career stage. The duration of programmes may need to be adapted to career stages, to ensure that the programme is palatable to the participant.		
Resources to support self-guided learning	Supporting resources are crucial for all career stages and should be tailored to the specific needs of each stage. It is important to monitor engagement with the resources, particularly for senior leaders.		
Collaborative Learning	Action learning sets (ALS) are potentially less useful, as ECRs focus on individual leadership.	ALS allow mid/senior leaders to share their experience and work through obstacles collaboratively. With experience comes the ability to engage in collaborative learning.	
	Collaboration skills should be developed throughout the leadership stages.		
Applying theory to practice	Most leadership programmes for ECRs last at least 12 months, to allow participants to embed their learning in practice.	Secondments and visiting fellowships allow mid-career leaders to explore	

		different learning environments.	
	70% of leadership development is through experience; thus, allowing leaders to apply theory to practice is essential for all career stages (Rashid et al., 2020).		
Informal Learning	Developing networks is critical, as these networks will be beneficial throughout one's leadership journey.	Peer feedback may be most useful at mid-career stage, to encourage reflection on leadership style and behaviours.	It may be harder for established senior leaders to explore 'new' networks for informal learning.
	Communities of practice (COPs) are appropriate for all career stages, bringing like-minded people together. Self-reflection should be a part of leadership development and awareness at all stages		

06. ISSUES FOR CONSIDERATION

This chapter draws on the key concepts and ideas from the REA, to provide insights and issues for consideration by ESRC and its strategic partners as they seek to build research leadership capacity in the social sciences in the short and longer term.

UK social scientists are world-renowned for their contributions to enhancing knowledge, understanding change, and informing policy and practice. However, to remain at the cutting edge, they need to adapt in response to shifts in the research landscape; researchers are increasingly required to mobilise teams and work across disciplinary and professional boundaries, whilst maintaining this intellectual leadership. This demands a fresh approach to research leadership, underpinned by a coherent strategy and framework designed to support leadership development over the life course (Flinders, 2020). The findings and issues for consideration presented in this chapter are designed to help build research leadership capability within the social sciences; however, many of these issues are also pertinent to the research sector more broadly, and may benefit from consideration at a cross-research council or UKRI level.

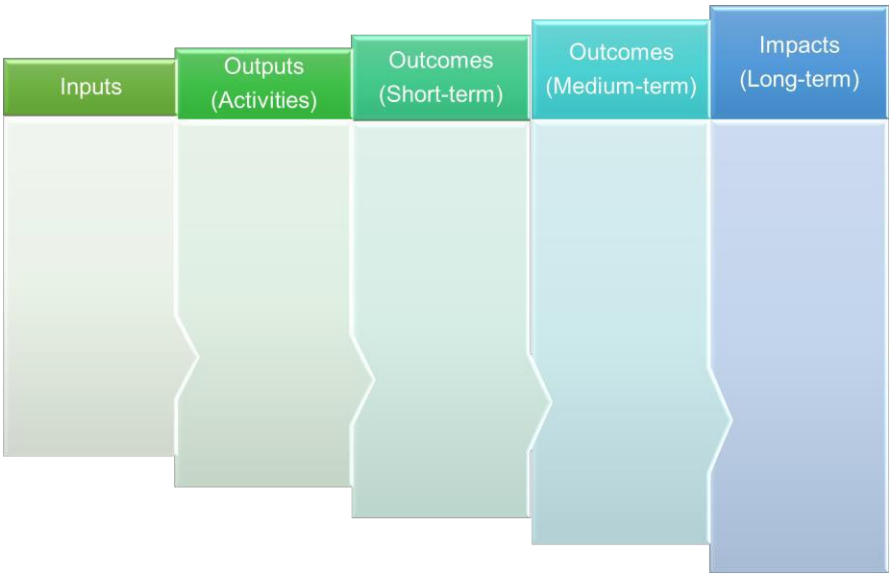
This evidence review has identified the core qualities of an effective leader, based on insights from a range of sectors and industries. Although the culture and traditions in academia create unique challenges for researchers, the core qualities of an effective leader identified in other sectors are equally applicable to HE, as are the mechanisms for developing them. However, this review also provides further evidence that a 'one size fits all' approach is unlikely to be effective for developing researchers' leadership in the social sciences. A more nuanced approach, which takes account of an individual's existing skills and attributes, career stage and career aspirations, is required to support the development of the inclusive, innovative research culture envisioned in the R&D People and Culture Strategy (HM Government, 2021), which encourages collaboration and inter-disciplinarity, as well as progression and mobility within and between HE and the wider R&D sector.

Evidence is currently limited on the characteristics of good leadership in the social science research context, and on effective ways to support leadership development over the life course of a research career. We have therefore identified key issues for the ESRC's consideration when exploring a strategy to build leadership capacity within social science research, by drawing on the insights, concepts and ideas within the wider literature. It is acknowledged that it will be some years before any of the ambitions of a new strategy are fully realised; nevertheless, learning from other sectors suggests that ESRC, in partnership with wider stakeholders - including those responsible for delivering leadership development interventions - can take some important incremental steps to ensure the strategy is effectively implemented and embedded. These steps are discussed below.

Define the purpose of leadership development

All of the leadership development frameworks reviewed for this REA are evidence-informed and underpinned by a clear articulation of their purpose, including the outcomes and impacts they are designed to achieve. We understand that a key driver for leadership development in social science research is the evolution in the research landscape, and the purpose of any research leadership development strategy is to ensure that UK social science keeps pace with these changes, in order to remain a world leader. A first step in the development of any strategy is, therefore, to articulate the role that leadership development will play in achieving this outcome, along with the desired impacts for the HE and wider research sector. Other sectors have articulated their Theory of Change for leadership development in a logic model, which also summarises the necessary inputs (e.g. resources) and outputs (e.g. training, continuing professional development and experiential learning) (Figure 3).

Figure 3: Logic model



Clearly articulating the purpose and desired outcomes of a leadership development strategy will help to ensure a shared understanding of the role and importance of research leadership across the sector. This is particularly important in the HE context, where less emphasis has traditionally been placed on the development of generic skills, such as leadership, for researchers (Braun et al., 2016).

Establish a competency framework for research leadership

Currently, access to leadership development for doctoral students and researchers at different career stages is variable, as is the content and depth of the different leadership programmes on offer. Furthermore, while some leadership development is tailored specifically to researchers, other forms are more generic. As a result, leadership development across the HE sector is fragmented and inconsistent (Flinders, 2020). As evidenced in this report, other sectors have developed competency-based leadership frameworks that outline the dimensions of effective

leadership in a given context, in order to ensure consistency as well as build capacity. Establishing a similar framework for research leadership in HE would therefore be beneficial. Should such a framework be developed, it would help to determine the appropriate mechanisms for assisting current and aspiring research leaders to acquire the skills, attributes and experience they need to be effective in an increasingly complex research ecosystem. These issues are not unique to the social sciences, as there was little evidence that differentiated the competencies of social scientists from other research disciplines; however, these issues are important to consider when developing a sector-specific research leadership strategy.

The specific leadership dimensions are rarely differentiated by career stage in the sectors explored for this REA. We have drawn on the limited evidence available to begin mapping the dimensions of leadership to the different stages of a research career (see).

However, primary research and consultation are required to further develop and refine this process. Such primary work may also elicit evidence of internal work that individual institutions are doing to build research leadership capacity, thereby strengthening the knowledge base from which to develop a programme or approach. A potential example of what this might look like, drawing together evidence gathered in this review, is given in Appendix 6. Ensuring that the framework is evidence-informed will help to establish its credibility among the range of target audiences. Consulting with other research councils and the wider research sector, on a draft competency framework, will help to achieve buy- in to the final version, which in turn could lead it to become embedded in institutional structures in the longer term. Achieving wider support, such as from other research councils, will add weight to the framework and be pivotal for its successful implementation.

Mechanisms for effective leadership development

In the long term, there is the potential to develop leadership programmes that comprise a suite of qualifications (accredited or unaccredited) which are tailored to the needs of researchers at different career stages. However, given the lead-in time and resources required to bring this to fruition, there are steps that could be considered in the shorter term to enhance the current offer in some institutions, and foster the culture required to support effective leadership development in the future.

Sector guidance on good leadership

The evidence demonstrates that while formal training can contribute to leadership development by equipping current or aspiring leaders with the requisite skills (e.g. project management), there is also a role for experiential learning and support – as shown in the 70/20/10 principle (Rashid et al., 2020). Competent leaders exhibit a range of attributes and behaviours that cannot necessarily be ‘taught’, but rather are acquired through experience, self-reflection, mentoring and coaching. Guidance for the sector to accompany the competency framework could help research organisations (including individual HE institutions) to implement measures that

create opportunities for researchers to develop and embed these attributes (as well as put their skills into practice). This could help to strengthen current provision and build additional capacity in the short term, while a comprehensive leadership programme for the sector is being considered.

A needs analysis could help researchers to develop the appropriate leadership skills and capabilities to deliver maximum value in their role by identifying their current strengths and areas for development. In the short term, this would help to ensure they accessed training and other opportunities to address their development needs. In the longer term, the analysis could be used to select an appropriately tailored programme from a suite (see next section) designed to meet the needs of researchers at different career stages.

Leadership development programmes for researchers

Subject to funding, there is the potential in the longer term to design ESRC-endorsed leadership development programmes, underpinned by a competency framework, which recruits participants from across the sector. As noted above, ideally these should be holistic programmes that combine formal training with mentoring and/or coaching and experiential learning, in order to nurture the required attributes of an effective leader at different career stages.

Evidence from the NHS Leadership Academy and Department for Education demonstrates the importance of developing a suite of programmes that respond to the specific needs of individuals at different career stages within a coherent, overarching framework (Department for Education, 2021; Kilbane et al., 2017; NHS Leadership Academy, 2017).
Equality, diversity and inclusion are also important considerations, both for the development of a strategy and any subsequent guidance and leadership development programmes. It is essential to ensure that any strategy or programmes are designed to address, and do not perpetuate, the under-representation of groups, including women and people from minority ethnic backgrounds, in leadership positions. The review has identified programmes that specifically target under-represented groups from which we can draw insights (see Chapter 5). However, bespoke programmes such as these only represent part of the solution; the success of any programme is also likely to be contingent on developing a supportive and inclusive culture that optimises opportunities for those who may otherwise face barriers to their development and progression.

Evidence from the private sector suggests that most (if not all) top corporate companies operate graduate training schemes that are designed to foster and embed leadership skills in new recruits at the outset of their careers. There is the potential to explore whether a similar approach in the HE sector, to support leadership development among doctoral students and early-career researchers, would be feasible to help build capacity and lay the foundations for further leadership development at subsequent career stages. Doctoral training partnerships (DTPs) could provide a testbed for new leadership development programmes targeted at

early-career academics, given their existing structures to support networking, interdisciplinary research, and cross-institution collaboration.

Using mentoring across the research life course

Mentoring is found to be the dominant mechanism for nurturing leadership across the range of sectors examined for this review. This is because it delivers benefits for both the mentor and mentee and is flexible enough to adapt to individuals' needs at different stages of their career. Indeed, mentoring is currently used within research and the HE sector.

However, further support for effective mentoring of researchers' leadership development in the social sciences would be beneficial, in the form of guidance in the short term (see above) and training (where appropriate). Recognition schemes could be considered in the longer term, to help embed mentoring and ensure both the consistency and quality of the mentor–mentee relationship. There is evidence that existing leadership development programmes are piloting the use of mentors from outside the mentees' sector. The review of the PhD in the social sciences (CFE, 2021) identified the benefits of interdisciplinary supervision, including from employers and those outside the sector. Selecting mentors from different disciplines, institutions, or even commercial organisations could offer similar benefits, by bringing different perspectives to the mentoring relationship; this approach also allows greater interdisciplinary learning and mobility, and so should be considered.

Incentivising and embedding leadership development into HE

The evidence presented in this REA and *Fit for the Future* (Flinders, 2020) demonstrates that the specific context and individualistic approach of academia have the potential to inhibit leadership development for researchers. The success of any new leadership strategy would, therefore, depend on a shift in culture towards one that values and rewards leadership development, along with interdisciplinary research and collaborative working. This will require the buy-in of senior leadership teams, as well as other key stakeholders such as doctoral students, current and aspiring leaders, and their supervisors and managers. Success will also require consideration of the mechanisms that motivate researchers and create the space for them to engage in leadership development, including opportunities for experiential learning, mentoring and formal training.

It is common practice in academia for staff to be 'bought out' of other responsibilities in order to undertake research. Other sectors, including healthcare, adopt a similar approach in order to release staff from clinical or administrative duties so that they can engage in leadership development (Taylor & Bodurka, 2017). This helps to enhance the credibility of the programme, as well as ensure that participants can focus on their development, which thereby maximises its impact.

By encouraging research organisations to integrate any developed competency-based leadership framework into their own staff performance and review systems, there is also the potential to shift the culture and embed leadership development in the longer term – for example, by linking salary progression and promotion criteria to

leadership competencies. This could help to embed leadership development as an important part of academic life, for researchers at all career stages.

A further mechanism for embedding leadership in the longer term could be the possibility of integrating leadership competencies within research funding applications. For instance, the New Investigator Grant currently asks potential PIs to document how they would build their team's capacity. Using indicators in a leadership framework to demonstrate researchers' capacity in this area would help to communicate the importance and value of the framework and could change behaviour in the longer term.

Potential next steps

This chapter has identified a number of issues for consideration by the ESRC and key stakeholders, as it seeks to develop a new strategy for research leadership in the social sciences. We summarise the potential actions identified in this chapter in Table 8below. The insights from this evidence review suggest that creating a culture of leadership across the social science research landscape, which helps researchers at each stage in the life course to develop appropriate skills and competencies, could usefully provide the focus for initial discussions. A 'one size fits all' approach will not work; therefore, developing an evidence-informed competency-based framework, which articulates the skills and attributes needed at each career stage, is likely to be essential for the long-term transformation of research leadership in the social sciences.

Table 8: Summary of areas for consideration

Overarching consideration	Potential next steps
Develop a Theory of Change for research leadership development (for ESRC internal use).	• Summarise the inputs, outputs, short- and medium-term outcomes, and long-term impacts of leadership development in a logic model, to emphasise the importance of leadership and how leadership development will be integral to the social science research landscape, moving forwards.
Develop an evidence-informed competency-based research leadership framework.	• Conduct primary research to identify the leadership skills, attributes and competencies needed by researchers at different career stages, and indicate current gaps, building on evidence from other sectors. • Consult the sector on the draft competency framework, to secure buy-in. • Work with other research councils / UKRI to explore the feasibility of a common research leadership framework, or to ensure synergy

	between the frameworks implemented by different research councils.

Overarching consideration	Potential next steps
Develop guidance on fostering a culture of leadership development and effective mechanisms for leadership development, including mentoring.	• Draw on existing evidence to develop guidance on effective mechanisms for leadership development, including good practice in mentoring (which the evidence has shown to be particularly effective). • Consider the value of a recognition scheme to help ensure mentoring is embedded and of a consistent quality. Consider the value of encouraging research organisations to engage with mentors from outside the mentee's discipline or sector.
Create leadership development programmes informed by the competency-based leadership framework.	• Explore the feasibility of developing leadership programmes for researchers in the social sciences at specific career stages. • Identify DTPs willing to pilot a leadership development programme for researchers in their early career. • Develop partnerships with corporate businesses than run graduate training schemes, to learn more about their programmes and how they nurture and embed leadership.
Incentivise and embed leadership development within research organisations.	• Explore the possibility of funding to enable researchers on leadership programmes to be bought out of other institutional- level responsibilities (e.g. up to 10% of their time). • Consider how wording of grant specifications could prioritise leadership as a skill that would be recognised, and link this to the new leadership framework.

APPENDIX 1: SEARCH TERMS AND SEARCH STRINGS

The core search terms that were applied to the two primary research questions are detailed in the subsequent tables. Within each table, individual cells show the synonymous terms which were used in combination with each other to identify evidence relating to the research questions.

Table 9: Primary research question (RQ1) search terms

RQ1: What should effective leadership look like at different career stages in a research environment?			
Definitions	Career stage	Expectations	Sector / context
Research leader* Effective leader* Successful leader*	Doctor* / PhD Recognised Established Leading Early career Mid-career Late career	Effective* Success* Evaluat* Skills Attributes Attitudes Behaviours Talent Competenc* Impact Capabilit*	Higher education University Social science* Academi* Public health / Health care / NHS Clinical Education School

Table 10: Primary research question (RQ2) search terms

RQ2: Which interventions have been most effective in developing the skills and experience required for effective leadership across sectors at different career stages, and what can we learn from what works?			
Definitions	Interventions	Effectiveness / Impact	Motivators / influencing factors
Effective leader* Successful leader*	Intervention Framework Mentoring Coaching Training Talent Qualification Professional development / CPD	Mobility / sectoral discipline* Progression Promotion Impact What works Interdisciplin* Evaluat*	Organisational culture Motivation Incentive / disincentive Reward Enabler Barrier Life course

APPENDIX 2: SCORING CRITERIA FOR QUALITY OF SOURCES

Table 11: Scoring matrix

	No score (0)	Low score (1)	Medium score (2)	High score (3)
Method - Methodological basis for evidence	No methodological information provided	Theoretical or conceptual studies	Observational research (e.g. longitudinal or cross-sectional qual. or quant. research). Secondary reviews	Experimental or quasi-experimental studies (RCT, simulated randomisation)
Relevance - Extent to which source has direct relevance to research questions	No relevance (Exclude)	Some relevance (1 RQ, non-research context, low applicability)	Good relevance (at least 1 RQ, non-research context with high applicability)	High relevance (at least 1 RQ, research context)
Transparency - Extent to which the objectives are clearly stated	No clear objective stated (Include if other criteria met, but highlight limitations)	General statement of purpose (defines context)	Brief statement of objectives (i.e. defines context and variables)	Specific statement of objectives (i.e. detailed definition of context, variables and hypotheses)
Execution - Evaluated against expected quality criteria for the specific method (for example, potential for bias in experimental approaches, or misinterpretation of meaning in observational analysis)	Insufficient information provided. Poorly executed, limitations undefined, or defined with high risk of bias or misinterpretation (Include if other criteria met, but highlight limitations)	Satisfactorily executed, limitations articulated, moderate risk of bias or misinterpretation	Well executed, limitations articulated, low risk of bias or misinterpretation	Very well executed. Limitations articulated and mitigated so minimal likelihood of bias or misinterpretation

APPENDIX 3: BIBLIOGRAPHY

The following table documents all sources that were included in the REA, including their full reference and their classification in relation to the criteria in Appendix 2.

Full reference	Document type	Sector	Country	Method	Relevance	Transparency	Execution	Early career	Mid-career	Late career	General stage
Adams, J. & Steel, A. (2019). Future-Proofing the Field of Naturopathy Research: Nurturing International Research Leadership in an Evolving Profession. *The Journal of Alternative and Complementary Medicine*, 25(2), 133–134.	Journal Article	Health	Australia	0	2	1	1				
Adams, J., Kawchuk, G., Breen, A., De Carvalho, D., et al. (2018). Leadership and capacity building in international chiropractic research: Introducing the chiropractic academy for research leadership (CARL). *Chiropractic & Manual Therapies*, 26(1), 5.	Journal Article	Health	International	1	2	1	1				
Allison, S., Goodall, A. H., & Bastiampillai, T. (2016). Research leadership: Should clinical directors be distinguished researchers? *Australasian Psychiatry*, 24(3), 249–251.	Journal Article	Health	USA	1	0	1	1				
Antes, A. L., Mart, A., & DuBois, J. M. (2016). Are Leadership and Management Essential for Good Research? An Interview Study of Genetic Researchers. *Journal of Empirical Research on Human Research Ethics*, 11(5), 408–423.	Journal Article	Health	USA	2	2	2	3	Y	Y	Y	Y

Baek, P. & Bramwell, S. (2016). What contributes to a successful Leadership Development Program? https://ecommons.cornell.edu/bitstream/handle/1813/74534/What_Contributes_to_a_Successful_Leadership_Development_Program.pdf?sequence=1	Article (unclear origin)	Business	Unspecified	0	1	1	1				Y
Barth, M., Bruhn, A., Lam, D. P. M., Bergmann, M., & Lang, D. J. (2020). Capacity building for transformational leadership and transdisciplinarity. *GAIA - Ecological Perspectives for Science and Society*, 29(3), 195–197.	Journal Article	Academia	International	1	2	2	2	Y			
Braun, S., Peus, C., Frey, D., & Knipfer, K. (2016). Leadership in Academia: Individual and Collective Approaches to the Quest for Creativity and Innovation. In *Leadership Lessons from Compelling Contexts* (Vol. 8, pp. 349–365). Emerald Group.	Book Chapter	Academia	Unspecified	1	3	2	2			Y	Y
Browning, L., Thompson, K., & Dawson, D. (2017). From early career researcher to research leader: Survival of the fittest? *Journal of Higher Education Policy and Management*, 39(4), 361–377.	Journal Article	Academia	Australia	2	2	2	2	Y		Y	
Brysiewicz, P., Nadesan-Reddy, N., & Suleman, F. (2020). A multidimensional model of mentorship for emerging health research leaders: A longitudinal qualitative multiple case study. *The Lancet Global Health*, 8, S34.	Journal Article	Health	International	2	3	2	2	Y			
Cheesebrough, K. R., Bronzert, J., & Frazier-De La Torre, E. (2020). Leadership, academia, and the role of career coaching. *Translational Behavioral Medicine*, 10(4), 870–872.	Journal Article	Academia	USA	2	2	3	2		Y		
Daley, J. & Baruah, B. (2021). Leadership skills development among engineering students in Higher Education – an analysis of the Russell Group	Journal Article	Education	UK	2	2	3	3	Y			

universities in the UK. *European Journal of Engineering Education*, 46(4), 528–556.										
De Brún, A., O'Donovan, R., & McAuliffe, E. (2019). Interventions to develop collectivistic leadership in healthcare settings: A systematic review. *BMC Health Services Research*, 19(1), 72.	Journal Article	Health	International	2	2	2	2	Y	Y	
Earley, R. (n.d.). Whole Circles: Models for Academic Textile Design Research Leadership in the Circular Economy, 14. https://ualresearchonline.arts.ac.uk/id/eprint/11284/	Conference Proceedings	Arts	UK	2	1	2	1			
Edwards, M., Sinclair, A., Holmes, J., & Mackay, S. (2021). *The impact and effectiveness of leadership development activities for senior leaders*. Institute for Employment Studies. https://www.employment-studies.co.uk/system/files/resources/files/NLC_Rapid_Evidence_Assessment_-_The_impact_and_effectiveness_of_leadership_development_activities_for_senior_leaders_1_0.pdf	Report	Public sector	UK	2	2	2	2			Y
Elkington, R., Pearse, N., Moss, J., van der Steege, M., & Martin, S. (2017). Global leaders' perceptions of elements required for effective leadership development in the twenty-first century. *Leadership & Organization Development Journal*, 38.	Journal Article	Business	International	2	2	2	2			Y
Englefield, E., Black, S. A., Copsey, J. A., & Knight, A. T. (2019). Interpersonal competencies define effective conservation leadership. *Biological Conservation*, 235, 18–26.	Journal Article	Academia	UK	2	2	2	1			Y
Evans, L. (2014). What is effective research leadership? A research-informed perspective. *Higher Education Research & Development*, 33(1), 46–58.	Journal Article	Academia	UK	2	3	2	2			Y

Evans, L. (2017). University professors as academic leaders: Professorial leadership development needs and provision. *Educational Management Administration & Leadership*, 45(1), 123–140.	Journal Article	Education	UK	2	2	2	2	Y			Y
Garonzik-Wang, J. M. & Segev, D. L. (2018). Mentorship for Research Success. In C. R. Scoggins, R. E. Pollock, & T. M. Pawlik (Eds.), *Surgical Mentorship and Leadership: Building for Success in Academic Surgery* (pp. 71–80). Springer International Publishing.	Book (incl. Chapters)	Health	Unspecified	1	1	1	1				
Gibson, C., Stutchbury, T., Ikutegbe, V., & Michielin, N. (2019). Challenge-led interdisciplinary research in practice: Program design, early career research, and a dialogic approach to building unlikely collaborations. *Research Evaluation*, 28(1), 51–62.	Journal Article	Academia	UK/ Australia	2	3	2	3	Y			
Government Communication Service. (2020). GCS Leadership framework 2020 (p. 17). https://3x7ip91ron4ju9ehf2unqrm1-wpengine.netdna-ssl.com/wp-content/uploads/2020/05/CO_GCS_Leadership_framework_2020.pdf	Website	Public sector	UK	2	1	1	1				Y
Grote, H., Smith, J., Little, J., & Horridge, M. (2019). Clinical leadership fellow schemes for junior doctors: A brief overview of available schemes and how to apply. *Future Healthcare Journal*, 6(3), 172–176.	Journal Article	Health	UK	1	2	1	2	Y			
Hargett, C. W., Doty, J. P., Hauck, J. N., Webb, A. M., Cook, S. H., Tsipis, N. E., Neumann, J. A., Andolsek, K. M., & Taylor, D. C. (2017). Developing a model for effective leadership in healthcare: A concept mapping approach. *Journal of Healthcare Leadership*, 9, 69–78.	Journal Article	Health	USA	2	1	2	2				Y

Hart, A., Biggs, S., Scott-Bottoms, S., Buttery, L., Dennis, S., et al. (2020). Negotiating Leadership in Interdisciplinary Co-Productive Research: A Case Study of An International Community-Based Project Between Collaborators from South Africa and the United Kingdom. *SAGE Open*, 10(4), 215824402097159.	Journal Article	Education	UK / South Africa	1	2	1	2	Y			Y
Haworth, S., Miller, R., & Schaub, J. (2018). Leadership in Social Work: (And can it learn from clinical healthcare?). University of Birmingham. https://www.birmingham.ac.uk/Documents/college-social-sciences/social-policy/Misc/leadership-in-social-work.pdf	Academic Paper	Health	UK	1	1	2	2				Y
Henshall, C., Greenfield, D. M., Jarman, H., Rostron, H., Jones, H., & Barrett, S. (2020). A nationwide initiative to increase nursing and midwifery research leadership: Overview of year one programme development, implementation and evaluation. *Journal of Clinical Nursing*, 1-13.	Journal Article	Health	UK	2	1	2	2				
Hitt, D. H. & Tucker, P. D. (2016). Systematic Review of Key Leader Practices Found to Influence Student Achievement: A Unified Framework. *Review of Educational Research*, 86(2), 531–569.	Journal Article	Education	International	2	2	3	3				Y
Holmberg, R., Larsson, M., & Bäckström, M. (2016). Developing leadership skills and resilience in turbulent times: A quasi-experimental evaluation study. *Journal of Management Development*, 35(2), 154–169.	Journal Article	Business	Sweden	3	2	3	2				
Ipsos MORI, Mackay, S., Fullick, S., Schneuwly, S., Institute for Employment Studies, Carter, A., & Edwards, M. (2021). *Evaluation of the National Leadership Centre*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/996800/20-055748_NLC_Y1Report_FINAL_170521_	Report	Public sector	UK	2	1	3	2				

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Keijser, W. (2019). Opening up medicine: Physicians and leadership in times of transformation [PhD, University of Twente].	PhD Thesis	Health	Netherlands	2	2	2	2				Y
King, M., Wilson, R., & Wilson, S. (2020). *Organisational Effectiveness and Collaboration Across the System: Literature Review Summary*. https://www.gov.uk/government/publications/nlc-public-service-leadership-literature-reviews/organisational-effectiveness-and-collaboration-across-the-system-literature-review-summary-by-dr-martin-king-professor-rob-wilson-sophie-wilson	Report	Public sector	UK	1	2	1	2				Y
Kirchner, M. & Akdere, M. (2017). Military leadership development strategies: Implications for training in non-military organizations. *Industrial and Commercial Training*, 49(7/8), 357–364.	Journal Article	Military	USA	1	2	2	1	Y			Y
Kirkham, L. (2020). Understanding leadership for newly qualified nurses. *Nursing Standard* (Royal College of Nursing (Great Britain): 1987), 35(12), 41–45.	Journal Article	Health	UK	1	2	1	2	Y	Y		
Luria, G., Kahana, A., Goldenberg, J., & Noam, Y. (2019). Leadership Development: Leadership Emergence to Leadership Effectiveness. *Small Group Research*, 50(5), 571–592.	Journal Article	Military	Israel	2	1	2	3	Y			
Major, D. (2019). Developing effective nurse leadership skills. *Nursing Standard* (Royal College of Nursing (Great Britain): 1987), 34(6), 61–66.	Journal Article	Health	UK	1	2	2	2				y

Manville, C., Hinrichs, S., Parks, S., Kamenetzky, A., Gunashekar, S., Wilkinson, B., & Grant, J. (n.d.). *Characteristics of high-performing research units*. https://kclpure.kcl.ac.uk/portal/files/52329881/2015_highperform.pdf	Report	Education	UK	2	1	2	2				
Martin, E. & Meadows, M. T. (2017). Impact of the American Organization of Nurse Executives' Development Programs. *Nurse Leader*, 15(2), 131–136.	Journal Article	Health	USA	1	1	1	2		Y		Y
Mousa, M., Boyle, J., Skouteris, H., Mullins, A. K., Currie, G., Riach, K., & Teede, H. J. (2021). Advancing women in healthcare leadership: A systematic review and meta-synthesis of multi-sector evidence on organisational interventions. *EClinicalMedicine*, 39.	Journal Article	Health	International	2	3	3	3				
Murray, R., Steckley, L., & MacLeod, I. (2012). Research leadership in writing for publication: A theoretical framework. *British Educational Research Journal*, 38(5), 765–781.	Journal Article	Academia	UK	2	2	2	2	Y	Y	Y	Y
National Leadership Centre. (2020). *A Literature Review on Effective Leadership Qualities for the NLC*. https://www.gov.uk/government/publications/nlc-public-service-leadership-literature-reviews/a-literature-review-on-effective-leadership-qualities-for-the-nlc-by-dr-martin-king-and-professor-rob-wilson	Report	Public sector	UK	2	1	2	2				Y
NHS England (2016). Developing people—Improving care: A national framework for action on improvement and leadership development in NHS-funded services. https://eoe.leadershipacademy.nhs.uk/wp-content/uploads/sites/6/2019/04/10591-NHS_-Improving_Care-Summary.pdf	Report	Health	UK	2	1	2	2				Y

NHS England (2018). *Leadership Development*. https://www.england.nhs.uk/wp-content/uploads/2018/03/leadership-development.pdf	Report	Health	UK	1	2	2	2	Y	Y	Y	y
NHS Institute for Innovation and Improvement (2017). *Improvement Leaders' Guide: Leading Improvement: Personal and organisational development*. https://www.england.nhs.uk/improvement-hub/wp-content/uploads/sites/44/2017/11/ILG-3.4-Leading-Improvement.pdf	Guide	Health	UK	1	1	1	1				Y
NHS Leadership Academy (2017). *Healthcare Leadership Model: The nine dimensions of leadership behaviour*. https://www.leadershipacademy.nhs.uk/wp-content/uploads/2014/10/NHSLeadership-LeadershipModel-colour.pdf	Guide	Health	UK	1	2	1	1				Y
Oakley, M., Zhang, M. B., O'Donnell, J., Potter, B., Apollonio, S., Stewart, J. C. B., Haden, N. K., Valachovic, R. W., & Rodriguez, T. E. (2020). Leadership development for early-career educators: Association report on the ADEA summer program for emerging academic leaders. *Journal of Dental Education*, 84(11), 1314–1320.	Journal Article	Health	USA	2	1	2	2	Y	Y	Y	
Oleksiyenko, A. & Ruan, N. (2018). Intellectual leadership and academic communities: Issues for discussion and research. *Higher Education Quarterly,* 73, 406-418.	Journal Article	Academia	International	1	3	2	1		Y	Y	
Pizzirani, B., O'Donnell, R., Skouteris, H., Crump, B., & Teede, H. (2020). Clinical leadership development in Australian healthcare: A systematic review. *Internal Medicine Journal*, 50(12), 1451–1456.	Journal Article	Health	Australia	2	0	2	2				

Rashid, A., Gill, D., & Dacre, J. (2020). Beyond credentials: Examining the potential of MBA training to cultivate clinical leadership. *BMJ Leader*, 4(3).	Journal Article	Health	UK	1	1	1	1				
Rehbock, S. (2020). Academic leadership: Challenges and opportunities for leaders and leadership development in higher education (pp. 252–264). In Antoniadou & Crowder (Eds) *Modern Day Challenges in Academia*. Edward Elgar Publishing: London.	Book (incl. Chapters)	Education	International	1	2	1	2			Y	
Ruan, N. (2021) Accumulating freedom for intellectual leadership: Women professors' experiences in Hong Kong. *Educational Philosophy and Theory,* 53(11), 1097-1107.	Journal article	Academia	Hong Kong	2	3	3	2			Y	
Shinton, S. & Cowen, R. (2019). *Strengthening UK research leadership*. Researchers14. https://www.researchers14.ac.uk/post/2019/01/30/strengthening-uk-research-leadership	Blog	Academia	UK	1	3	1	2	Y	Y	Y	
Stoll, B. J. (2019). Reflections on Leadership: Seizing and Embracing Opportunities-Holding up Half the Sky. *JAMA*, 321(22), 2165–2166.	Journal Article	Health	USA	1	2	1	1				Y
Suleman, F., Wassenaar, D., Nadesanreddy, N., & Brysiewicz, P. (2021). DRILL: An innovative programme to develop health research leadership in KwaZulu-Natal, South Africa. *African Journal of Health Professions Education*, 13(1), 10–11.	Journal Article	Health	South Africa	1	2	1	1	Y			
Taylor, J. S., & Bodurka, D. C. (2017). Chapter 11—Training Current and Future Leaders. In C. Gallagher & M. Ewer (Eds.), *Ethical Challenges in Oncology* (pp. 177–190). Academic Press.	Book (incl. Chapters)	Health	USA	1	2	1	2				Y

Uslu, B. & Arslan, H. (2018). Faculty's academic intellectual leadership: the intermediary relations with universities' organisational components. *International Journal of Leadership in Education*, 21(4), 399-411.	Journal Article	Academia	Turkey	2	3	2	2			Y		
Uslu, B. & Welch, A. (2018). The influence of universities' organizational features on professorial intellectual leadership. *Studies in Higher Education*, 43:3, 571-585.	Journal Article	Academia	Australia	2	3	2	2			Y		
Vitae (no date [a]). *Effective research project leadership*—Vitae Website. https://www.vitae.ac.uk/doing-research/leadership-development-for-principal- investigators-pis/leading-a-research-project/effective-research-project- leadership-1	Website	Academia	UK	2	2	2	2				Y	
Vitae (no date [b]). *Research leadership styles*—Vitae Website. https://www.vitae.ac.uk/doing-research/leadership-development-for-principal- investigators-pis/leading-a-research-project/effective-research-project- leadership-1/research-leadership-styles	Website	Academia	UK	1	1	1	1				Y	
West, N. X., Claydon, N. C., & Seong, J. (2019). Clinical research leadership - "A blueprint". *Journal of Dentistry*, 87, 20–23.	Journal Article	Health	Unspecified	1	3	1	1				Y	
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APPENDIX 4: REFERENCE LIST

The following list provides the supporting references used in this report, supplementary to those reviewed in the REA:

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Need for and provision of director-level leadership development. Institute for Employment Studies. https://www.leadershipacademy.nhs.uk/wp-content/uploads/dlm_uploads/2019/08/B42-Directors-Programme.pdf

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Doyle, W. R. (2008). The Baby Boomers as Faculty: What Will They Leave Behind? *Change: The Magazine of Higher Learning*, *40*(6), 56–59. https://doi.org/10.3200/CHNG.40.6.56-59

Ellen, B. P. (2016). Transformational Leadership. *Global Encyclopedia of Public Administration, Public Policy, and Governance*. https://doi.org/10.1007/978-3-319-31816-5_1343-1

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Kilbane, J., Shawhan, K., Jones, S., & Cortvriend, P. (2017). *Evaluation of the NHS Leadership Academy Mary Seacole Local Programme*. https://www.leadershipacademy.nhs.uk/wp-content/uploads/dlm_uploads/2019/08/B38-Mary-Seacole-Local.pdf

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APPENDIX 5: LEADERSHIP DEVELOPMENT IN PRIVATE SECTOR COMPANIES

Company	Brief Description	Mentoring	Coaching	Rewarding Leadership	Bespoke Training	Training Content
Deloitte	Website provides case studies of the benefits of mentoring, and articles outlining the dominant sector trends and broad requirements for what is needed to develop talent.	✓		✓	✓	
British Airways	Internal coaching used to support growth and leadership of BA leaders. A series of two-hour workshops delivered to train internal coaches.		✓			
Unilever	Website introduces a future leaders' graduate programme and has articles on the role of mentoring to improve gender equality	✓			✓	
IBM	IBM has an IBM Leadership Academy which is a portal to all leadership content and activity.	✓				✓
KPMG	KPMG has a bespoke leadership programme for Partners and Directors), as well as a training programme aimed at graduates.	✓	✓		✓	
HSBC	HSBC University contains a comprehensive set of tools and learning materials, as well as courses, to develop leadership skills.	✓	✓		✓	✓
GlaxoSmithKlein	GSK has a graduate programme for Future Leaders, as well as mentoring and coaching for employees at all levels.	✓	✓		✓	
AstraZenica	Business has a Commercial Leadership Development Programme (three years) for recent graduates		✓		✓	
BP	On-the-job learning, coaching, mentoring and learning and talent programmes	✓	✓			✓
Prudential	'Talent Mind-Set' embraces collaboration and diversity, to develop leadership at all stages. No clear indication of how this is achieved. Old documents (early 2000s) suggest the use of leadership review forums, mentor development programme and secondments	✓				✓

Tesco	Tesco has a purpose-built Academy – a learning hub for online resources, courses and learning support. A Leadership Programme and Early Careers programme are also implemented to develop leadership.				✓	✓

APPENDIX 6: POTENTIAL FRAMEWORK FOR RESEARCH LEADERSHIP DEVELOPMENT

Career stage (Example role)		Early		Mid	Late
		Doctoral	Post-doctoral	Lecturer/SL	Professor
Self-leadership	Emphasis of leadership	Leadership of doctoral research project	Developing self-leadership skills in different contexts Developing independent research profile	Ongoing development of self-leadership skills Role-modelling effective leadership	Ongoing development of self-leadership skills Role-modelling effective leadership
		Personal development; Managing workload and competing priorities			
	Characteristics of effective leadership	Self-awareness; Self-reflexivity / personal reflection; Self-control; Critical thinking; Emotional intelligence; Technical/professional; knowledge; Resilience; Determination			
Leading others	Emphasis of leadership	Leadership within small groups Research collaboration experience	Leading small groups Supervision of pre/doc students	Leading research projects, networks and collaborations Project management	Leading large/complex research projects Nurturing talent Project management
				Developing capacity across teams; Creating a supportive environment; Developing a collaborative approach to leading research projects	
	Characteristics of effective leadership	Listening skills; Openness; Mutual respect for colleagues; Developing trust			
				Empowering others; Being accessible; Conflict resolution; Facilitating teamwork; Holding others to account; Ability to inspire	
Strategic leadership	Emphasis of leadership	Awareness of broader environment and research landscape	Awareness of broader environment and research landscape	Creating and promoting a confident and inclusive research vision	Building capacity, influencing policy, shaping debates Ambassadorial role Establishing and conveying vision Driving innovation and change
	Characteristics of effective leadership				Strategic thinking Intellectual flexibility Political astuteness